

### Technical Assistance Consultant's Report

Project Number: 47009-002 / TA 8448 - PRC September 2014

### People's Republic of China: Guangxi Baise Vocational Education Development Project (Financed by the Asian Development Bank's Technical Assistance Special Fund)

Prepared by HJI Group Corporation Costa Mesa, California, USA

For Baise Municipal Government Baise University

This consultant's report does not necessarily reflect the views of ADB or the Government concerned, and ADB and the Government cannot be held liable for its contents. (For project preparatory technical assistance: All the views expressed herein may not be incorporated into the proposed project's design.

### Asian Development Bank



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# **FINAL REPORT**

Submitted by:

#### **HJI Group Corporation**

3200 Park Center Drive, Suite 1180, Costa Mesa, CA 92626, USA

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September 11, 2014

Ms. Wendy Walker Project Manager Principal Social Development Specialist Asian Development Bank Manila, Philippines

#### Re: Final Report Submission Guangxi Baise Vocational Education Development Project (TA 8448-PRC)

Dear Ms. Walker,

The PPTA Consultant, HJI Group Corporation (HJI), is pleased to submit this PPTA Final Report for the referenced project. The report has been prepared based on the updated FSR, Memorandum of Understanding of the ABD Fact-finding Mission, our detailed evaluation and assessment on each discipline of the PPTA, and the discussions with the EA, IA, PMO, and involved institutions and agencies.

We acknowledge the contributions to this Final Report from ADB officials for their guidance and directions; involved ADB staff consultants for their professional advices, Guangxi Provincial Government and Baise Municipal Government for their strong support, the local design institute, resettlement and environmental institutions for their dedicated work and cooperation; and especially, Baise University and Baise PMO for their close collaboration and great support.

Should you have any questions regarding the submission, please do not hesitate to contact me.

Very Truly Yours,

#### **HJI Group Corporation**

Wang Surver

Shuwen Wang Team Leader, TA 8448

Encl. Cc: Jim Qin (w/o enclosure) file

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#### ABBREVIATIONS, ACRONYMS AND UNITS

| ADB  | _ | Asian Development Bank                          |
|------|---|---|
| BMG  | _ | Baise Municipal Government                      |
| BPMO | _ | Baise project management office                 |
| BVC  | _ | Baise vocational college                        |
| BVS  | _ | Baise vocational school                         |
| CBA  | _ | competency-based approach                       |
| GZAR | _ | Guangxi Zhuang Autonomous Region                |
| kwh  | — | kilowatt hour                                   |
| MLT  | — | multilevel TVET system                          |
| PMO  | — | project management office                       |
| SGAP | — | social and gender action plan                   |
| SVS  | — | secondary vocational school                     |
| TVET | — | technical and vocational education and training |

#### WEIGHTS AND MEASURES

| kg | - | kilogram                                       |
|----|---|--|
| km | - | kilometer                                      |
| m² | _ | square meter                                   |
| m³ | _ | cubic meter                                    |
| mu | - | Chinese land measuring unit (1 hector = 15 mu) |
| t  | - | ton (1,000 kg)                                 |
|    |   |  |

#### **CURRENCY EQUIVALENTS**

(As of 18 August 2014)

| Currency Unit | - | yuan (CNY) |
|---------------|---|------------|
| ,             |   | , ,        |

| CNY1.0000 | = | \$ 0.1624  |
|-----------|---|------------|
| \$1.0000  | = | CNY 6.1544 |

Project Classification Information Status: Complete

#### PROJECT AT A GLANCE

| 1. | Basic Data<br>Project Name   | Guangxi Baise Vocational Education   | Department                      | Project Numb<br>EARD/EASS | er: 47009-002    |
|----|--|--|---------------------------------|---------------------------|------------------|
|    | Country<br>Borrower  | China, People's Republic of<br>People's Republic of China  | Executing Agency                | Baise Municipa            | Government       |
| 2. | Sector   | Subsector(s)   |                                 | ADB Financing             | (\$ million)     |
| 1  | Education  | Technical and vocational education and   | training                        |                           | 50.00            |
|    |  |  | Total                           |                           | 50.00            |
| 3. | Strategic Agenda   | Subcomponents  | Climate Change Infor            | mation                    |                  |
|    | Inclusive economic<br>growth (IEG)   | Pillar 2: Access to economic opportunities,<br>including jobs, made more inclusive<br>Pillar 3: Extreme deprivation prevented and<br>effects of shocks reduced (Social Protection) | Climate Change impac<br>Project | t on the                  | Low              |
|    | Environmentally<br>sustainable growth (ESG)<br>Regional integration (RCI)                          | Environmental policy and legislation<br>Pillar 4: Other regional public goods  |                                 |                           |                  |
| 4. | Drivers of Change  | Components   | Gender Equity and M             | ainstreaming              |                  |
|    | Governance and capacity<br>development (GCD)<br>Knowledge solutions<br>(KNS)<br>Partnerships (PAR) | Organizational development<br>Knowledge sharing activities   | Effective gender mains<br>(EGM) | streaming                 | 3                |
|    | Private sector<br>development (PSD)  | Promotion of private sector investment   |                                 |                           |                  |
| 5, | Poverty Targeting  |  | Location Impact                 |                           |                  |
|    | Project directly targets<br>poverty  | No   | Rural<br>Urban                  |                           | Medium<br>Medium |
| 6, | Risk Categorization:   | Low  | 1                               |                           |                  |
| 7. | Safeguard Categorizatio  | n Environment: B Involuntary Res   | ettlement: C Indigenou          | s Peoples: B              |                  |
| 8. | Financing  |  | CELER CONTRACTOR CONTRACTOR     | 2                         |                  |
|    | Modality and Sources   |  | Amount (\$ million)             |                           |                  |
|    | ADB  |  | a second office and the         | 50.00                     |                  |
|    | Sovereign Project loa  | n: Ordinary capital resources  |                                 | 50.00                     |                  |
|    | Cofinancing  |  |                                 | 0.00                      |                  |
|    | None   |  |                                 | 0.00                      |                  |
|    | Counterpart  |  |                                 | 53.54                     |                  |
|    | Government   |  |                                 | 53.54                     |                  |
|    | Total  |  |                                 | 103.54                    |                  |
| 9. | Effective Development C  | Cooperation  |                                 |                           |                  |
|    | Use of country public finar  | ncial management systems Yes   |                                 |                           |                  |

#### I. THE PROPOSAL

1. The proposed project will improve the supply of skilled human resources in Baise Municipality, Guangxi Zhuang Autonomous Region (GZAR) to support the transformation of the local economy, meet the demands of industry, and promote inclusive growth. The project will play a demonstration role for the sector and provinces in creating multilevel technical and vocational education (MLT) systems.

#### II. THE PROJECT

#### A. Rationale

2. Located within GZAR<sup>1</sup> Baise Municipality is in one of the 14 national poverty areas in the PRC. The population of 4 million includes six main ethnic minority groups,<sup>2</sup> which make up 86% of the population. Baise is being developed by the government as a new economic base in GZAR focused on expanding and moving to higher value chain production in four priority industries: (i) aluminum processing, (ii) agriculture, (iii) tourism, and (iv) regional trade and logistics. Positioned near the border with Viet Nam, the municipality is well placed to develop as an important logistical link to countries of the Association of Southeast Asian Nations and Greater Mekong Subregion. The strategic development of Baise supports the Twelfth Five-Year Plan agenda on rebalancing the economy and the national strategy on urbanization.

3. Increased investment has led to year on year growth of 25.2% but despite this, the future economic development of Baise is constrained by lack of a skilled workforce. Baise Municipal Government (BMG) has projected a current shortage of more than 80,000 skilled workers, particularly in the rapidly expanding priority industries, many of which are employing new technologies. A major issue for BMG and Baise industries and services is the number of people who leave the province to obtain low skilled work in other provinces and cities.<sup>3</sup> Baise has trouble attracting skilled labor because of the salary differential and comparatively undeveloped key industries, and is therefore left with little choice other than to develop its local human resources.

4. To address the skilled labor shortage, Baise's Twelfth Five-Year Plan includes a human resources development strategy, centered on creating an MLT system. The government's National Medium and Long-term Strategy on Education,<sup>4</sup> 2010–2020 identified technical and vocational education and training (TVET) as a critical element in developing a high skilled multilevel workforce to meet the demands of industry and services in the country. The strategy in Baise is aligned with two reforms being undertaken in the sector, which are changing the shape of education institutions and rebalancing the roles of academic and vocational education. These are (i) development of MLT systems, which seeks to blend vocational and academic education, create linkages between levels of TVET, promote lifelong learning, and provide learning pathways and career development for students; and (ii) transitioning some universities into TVET applicable institutions, which promote cooperation and development of pathways between TVET, higher education, and adult education programs; and facilitate collaboration between industry and education.

<sup>&</sup>lt;sup>1</sup> Guangxi Zhuang Autonomous Region (GZAR) is one of the 12 less-developed provinces and autonomous regions in the western part of the People's Republic of China. Nine out of the 12 counties in Baise Municipality are national level poverty counties.

<sup>&</sup>lt;sup>2</sup> The main ethnic minority groups are Zhuang, Yao, Miao, Yi, Gilao, and Hui.

<sup>&</sup>lt;sup>3</sup> Estimated exit in 2012 of 600,000 people.

<sup>&</sup>lt;sup>4</sup> Government of the People's Republic of China, Ministry of Education. 2010. *National Long-term Strategy on Education, 2010–2020.* Beijing.

5. Development of MLT in Baise will help to address critical bottlenecks in the quality and supply of human resources and is an important strategy for BMG to support inclusive growth. The MLT will build opportunities for rural and ethnic minority students to better access and progress in education to be able to enter into the rapidly changing economy. The MLT in Baise will integrate the education and training systems to create multiple pathways for initial training, entry to and progress within the workforce by linking the human resources and skills supply from universities, vocational colleges, secondary vocational school (SVS), and short-term migrant courses. Baise University, with its current three level programs (SVS, vocational college, and university), and its role as the only higher education facility in the municipality<sup>5</sup> is well-positioned to take a leading role in MLT provision locally and eventually at provincial and national levels. To improve its relevance, Baise University has been selected<sup>6</sup> as one of 19 GZAR universities to transition into a TVET applicable institution with a focus on developing majors that link more closely to industry needs.

Implementing the reforms in MLT and the transition of Baise University from an 6. academic to a TVET applicable university will require significant capacity building, upgrades in TVET infrastructure, equipment, and systems and participation of industry. The attractiveness of TVET as an option for students has been a challenge for BMG with low student engagement, retention, and continuation in the mid-level technician and technologist levels (i.e., in the vocational college and undergraduate TVET oriented courses), which are priorities for industry. The need for courses to provide industry-related TVET skills requires that current curriculum, instruction, and assessment are competency-based, and more flexible and responsive. Most staff members do not have relevant industry experience and standards to apply in the classroom and/or workshop. Building better partnerships with industry, involving them in curriculum development and training will facilitate the rapid transfer of skills and ensure relevance of the TVET programs and employability of students. The project focuses on implementing TVET quality improvements in curriculum and teacher training, and expansion and strengthening of school-industry partnerships will address these issues.

7. Specialized facilities, workshops and learning spaces will be needed to support the emphasis on science and technology courses and competency-based curriculum. The new Baise University campus supported by the project will accommodate a multilevel system, with teaching and learning spaces beyond what is currently available. The new campus facilities and equipment will allow the MLT system to function and be responsive to industry. Features, such as the low carbon photovoltaic system and Green Sustainability Center<sup>8</sup> to be developed under the project will serve as models of green development for other campuses across PRC.

8. The plans for Baise to assume a regional role require innovative responses from the education sector. Baise University is involved in several regional cooperation arrangements with other universities in Association of Southeast Asian Nations and Greater Mekong Subregion countries. The project will build on these initiatives by (i) training a leadership team to support regional cooperation planning and activities; (ii) developing curriculum for majors, such as logistics and tourism; and (iii) undertaking research on the impacts of regional cooperation and industry expansion on human resources and skills needs in Baise.

<sup>&</sup>lt;sup>5</sup> Baise University receives students from the 22 secondary vocational schools in the municipality as well as from GZAR and other provinces.

<sup>&</sup>lt;sup>6</sup> Baise University was selected by GZAR Education Bureau to participate in the Ministry of Education national program. Baise Education Bureau is involved in the project as part of the leading group and participant in the training activities including the work on migrant worker short term training with Bureau of Human Resources and Social Security.

The center for technical and vocational education and training under the project will serve other technical and vocational education and training schools in the municipality and eventually beyond. It will disseminate good practices in curriculum and staff development and industry partnerships.

<sup>&</sup>lt;sup>8</sup> The center will develop green campus management programs; curriculum and research in environment sustainability related areas and outreach to students, staff, and local communities. It will build on recommendations in TA 7862-PRC subproject 1.8 on "An Action Framework and Activities for Low Carbon Campus Creation".

9. **Strategic fit**. Ensuring that graduates are prepared for the workforce with relevant knowledge and skills is a major challenge for PRC's structural reform of the economy. The project is consistent with the PRC's Twelfth Five-Year Plan, 2011–2015 which promotes inclusive growth, environment friendly and resource-efficient urban development, developing high quality human resources, and accelerating education reform. The project is aligned with ADB's Strategy 2020, the recommendations from the midterm review of the strategy which emphasize promoting TVET to address the human resource agenda, and the education sector strategic plan.<sup>9</sup> It aligns with ADB's PRC country partnership strategy, 2011–2015.<sup>10</sup>

10. **Incorporation of lessons learned**. Lessons from TVET programs in PRC and globally were incorporated into the project design, including (i) involving industries in curriculum development and training; (ii) developing competency-based curriculum, teaching, and assessment approaches; (iii) creating learning pathways by establishing training programs that align with entry requirements for advanced programs; (iv) building a learning culture for innovation and reform; (v) creating an industry demand-led system through the use of labor market and student employment information; and (vi) establishing robust project monitoring and evaluation.

#### B. Impact and Outcome

11. The **impact** of the proposed project will be economic development and industrial transformation of Baise Municipality. The **outcome** will be a high quality, flexible, and responsive MLT system developed which meets industry needs.

#### C. Outputs

The proposed project components and associated outputs are Output 1: TVET 12. quality improved and capacity developed. This component will (i) develop an integrated MLT system that provides integrated curriculum linking vocational secondary, college, and undergraduate levels of TVET; (ii) implement a competency-based approach (CBA) to curriculum, instruction, and assessment in priority areas across different majors and course levels: <sup>11</sup> (iii) upgrade teacher skills through pre-service and in-service professional development; (iv) upgrade assessment and quality assurance based on industry standards; (v) develop curriculum in entrepreneurship and employability skills; and (vi) develop a TVET teacher training center. The project will develop curriculum and teaching materials including digital content. Output 2. Chengbi campus constructed and environmental sustainability promoted. The component will construct Phase II teaching and residential buildings and facilities in the new Chengbi campus. The component includes the construction of 12 buildings with a total of 160,693 square meters building area.<sup>12</sup> A 3.86 million kilowatt hour (kWh) photovoltaic power system will be installed, and campus roads. sport facilities, slope protection, and other school facilities constructed. Teaching and lab equipment for the new campus will be financed by domestic funding. The Green Sustainability Center will ensure development and sustainability of green principles in campus management, curriculum development, and community outreach. Output 3: TVET Innovation and relevance promoted. The component will support strengthening schoolindustry partnerships, expanding regional cooperation activities and implementing strategic research. It will (i) enhance industry participation in management and delivery of curriculum

ADB. 2008. Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020. Manila; ADB. 2014. Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific. Manila; and ADB. 2010. Education by 2020: A Sector Operations Plan. Manila.

<sup>&</sup>lt;sup>10</sup> ADB. 2012. Country Partnership Strategy: People's Republic of China, 2011–2015. Manila.

<sup>&</sup>lt;sup>11</sup> Selected priority areas are: aluminum processing, preschool education, design, engineering management and agriculture. Development of curriculum for new majors in tourism and logistics will also be conducted. These are in line with the priority growth sectors to support Baise becoming a new economic base.

<sup>&</sup>lt;sup>12</sup> An overview of the campus construction, equipment, and special features is in Appendix 5 of the project administration manual.

and assessment; (ii) provide staff opportunities for industry visits, assignments, and training attachments; (iii) promote integration and enhancement of short-term migrant training into MLT; (iv) develop a regional cooperation management team and activities; and (v) conduct research on enterprise-TVET partnerships, emerging priority sectors, and future course and qualifications needs. **Output 4: project implementation management.** This component will support capacity building for the project management office (PMO) and TVET institutions in project management, monitoring, and evaluation to ensure efficient and effective project implementation in compliance with PRC and ADB requirements.

#### D. Investment and Financing Plans

#### 13. The project is estimated to cost \$103.54 million (Table 1).

| Item   | Amount |
|--|--------|
| A. Base Cost <sup>a</sup>  |        |
| Improving TVET quality and capacity development                        | 3.65   |
| Chengbi campus construction and promoting environmental sustainability | 82.38  |
| Promoting TVET innovation and relevance                                | 0.77   |
| Project implementation management                                      | 0.58   |
| Subtotal (A)   | 87.38  |
| B. Contingencies <sup>b</sup>  | 10.09  |
| C. Financing Charges During Implementation <sup>c</sup>                |        |
| ADB  | 3.20   |
| Domestic Bank  | 2.72   |
| ADB Commitment Charge  | 0.15   |
| Subtotal (C)   | 6.07   |
| Total (A+B+C) <sup>d</sup>   | 103.54 |

#### Table 1: Project Investment Plan

ADB = Asian Development Bank, TVET = technical and vocational education and training.

<sup>a</sup> In May 2014 prices.

<sup>b</sup> Physical contingency is computed at 8% of the base costs. Price contingency is computed based on the following price escalators published by ADB: 1.0% (2015) and 1.4% annually for 2016, 2017, 2018, and 2019 on foreign exchange costs and 3.0% annually throughout 2015 to 2019 on local currency costs.

<sup>c</sup> Includes interest during construction and commitment charges. Interest during construction has been

computed at the 5-year USD fixed swap rate plus a spread of 0.5% and maturity premium of 0.1%.

<sup>d</sup> Includes taxes and duties of USD 5.38 million to be financed from government and ADB Ioan. ADB Ioan will cover taxes and duties on items financed by ADB. Financing of taxes and duties is proposed because the due diligence showed that (i) the amount of taxes and duties is within the reasonable threshold identified in the country partnership strategy, (ii) the amount does not represent an excessive share of the investment plan, (iii) taxes and duties apply only in respect to ADB-financed expenditures, and (iv) financing of the taxes and duties is relevant for the success of the project.

Source: Asian Development Bank estimates.

14. The Government of the PRC has requested a loan of \$50 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 6 years, <sup>13</sup>straight line repayment option, an annual interest rate determined in accordance with ADB's London Interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements. Based on this, the average loan maturity is 15.75 years and the maturity premium payable to ADB is 0.10% per annum. The loan will cover civil works, equipment, and TVET institutional strengthening and capacity development.

<sup>&</sup>lt;sup>13</sup> The reason for a grace period of 6 years is to better align with the loan from the domestic commercial bank, which has a maturity of 7 years, starting withdrawal by 2015 and straightline repayment period from 2016 to 2021.

15. The financing plan is in Table 2 and is further detailed in the project administration manual (PAM). BMG will finance 39.25% of the project and the remaining counterpart funding of \$12.90 million will be provided by Baise University through a domestic bank loan for which they have received a commitment letter. The government and executing agency have given an assurance that they will provide counterpart funding for the project in a timely manner, and will provide any additional counterpart funding needed to cover any shortfall of funds or cost overruns.

|                              | Table 2: Financing Plan |                    |
|------------------------------|-------------------------|--------------------|
| Source                       | Amount                  | Share of Total (%) |
| Asian Development Bank (OCR) | 50.00                   | 48.29              |
| Baise Municipal Government   | 40.64                   | 39.25              |
| Domestic Bank                | 12.90                   | 12.46              |
|                              | 103.54                  | 100.00             |

Source: Asian Development Bank estimates.

16. The borrower of the loan is the PRC. The loan proceeds will be entirely made available to the Guangxi Zhuang Autonomous Region Government (GZARG) under its relending arrangements, upon terms and conditions satisfactory to ADB. The GZARG will make the loan proceeds entirely available to BMG as indicated in the PAM. The onlending terms and conditions of the loan proceeds will be the same as those of the ADB loan. The BMG will bear the foreign exchange and interest rate variation risks in proportion to the loan amount it receives. The indicative flow of funds and the relending and onlending arrangements are in the PAM.

#### E. Implementation Arrangements

17. The implementation arrangements are summarized in Table 3 and detailed in the PAM.

| <b></b>  |  |  |  |  |
|--|--|--|--|--|
| Aspects  | Arrangement  |  |  |  |
| Implementation period  | January 2015–December 20   | 19   |  |  |
| Estimated completion date  | 31 December 2019 (estimate   | ed loan closing date: 30 Ju                        | ne 2020)   |  |
| Management   |  |  |  |  |
| (i) Oversight body   | BPLG, under the leadership representatives from BDRC,  | of the standing vice mayor BFB, BHUCB, and other r | of BMG, with elevant departments.  |  |
| (ii) Executing agency  | <ul> <li>BMG will be the executing agency for the project, and will establish project management arrangements and assume overall accountability for ensuring project success. The BPLG will exercise oversight on behalf of the BMG and will:</li> <li>(i) provide overall project direction and any required policy guidance;</li> <li>(ii) oversee the preparation and implementation of the project;</li> <li>(iii) provide overall strategic guidance to the project;</li> <li>(iv) support cross-agency policy dialogue;</li> <li>(v) review project progress to support effective implementation; and</li> <li>(vi) ensure counterpart contributions are provided for project implementation on time.</li> </ul> |  |  |  |
|  | The BPLG has assigned the overall responsibility for coordinating project management and implementation to the BDRC, which has established a PMO for this purpose.   |  |  |  |
| (iii) Implementing agency<br>Baise University, the implementing agency, has set up a PLG, chaired by the I<br>University Party Secretary General and President, and a PIU. The PIU will be<br>responsible for day-to-day operations and coordination. Three departments of<br>Baise University are members of the PIU and will be responsible for managem<br>operations and monitoring. These include construction management department<br>teaching affairs department, and financial department. |  |  | a PLG, chaired by the Baise<br>a PIU. The PIU will be<br>. Three departments of<br>sponsible for management,<br>management department, |  |
| Procurement <sup>a</sup>   | ICB  | 4 contracts  | \$42,743,888   |  |
|  | NCB  | 5 contracts  | \$21,798,714   |  |
| Consulting services  | QCBS   | 2 contracts  | \$ 3,970.000   |  |
|  | CQS  | 2 contracts  | \$250,000  |  |

#### Table 3: Implementation Arrangements

| Aspects  | Arrangement   |   |          |
|--|---|---|----------|
|  | ICS   | 1 contract  | \$30,000 |
| Retroactive financing<br>and/or advanced<br>contracting  | Retroactive financing Advanced contracting has been requested to engage two consulting servic contracts and one civil works contract. Retroactive financing for one civil works contract. |   |          |
| Disbursement The loan proceeds will be disbursed in accordance with ADB's Loan Dis<br>Handbook (2012, as amended from time to time) and detailed arrangem<br>agreed upon between the government and ADB. |   | n ADB's Loan Disbursement<br>etailed arrangements |          |

ADB = Asian Development Bank, BDRC = Baise Development and Reform Commission, BFB = Baise Finance Bureau, BHUCB = Baise Housing and Urban-rural Construction Bureau, BMG = Baise Municipal Government, BPLG = Baise Project Leading Group, CQS = consultant's qualifications selection, FBS = fixed-budget selection, ICB = international competitive bidding, ICS = individual consultant selection, LCS = least-cost selection, NCB = national competitive bidding, PLG = project leading group, PIU = project implementation unit, QBS = quality-based selection, QCBS = quality- and cost-based selection. Source: PPTA consultant estimates.

18. The project includes funding for international and national consulting services to support the executing agency and implementing agency to implement the project and carry out capacity building activities. The project design also includes a start-up consultant to assist the PMO with project readiness activities. The terms of reference for the consulting services are included in the PAM.

#### III. DUE DILIGENCE

#### A. Technical

19. The project's technical design is appropriate to achieve project objectives. The project will assist Baise University to construct Phase II of its new campus at Chengbi in the north of Baise. Civil works involve the construction of site work and site utilities, teaching, and living buildings and facilities; and equipment procurement and installation. All buildings, with a total building area of 160,693 square meters, will be designed and constructed in accordance with relevant PRC and GZAR design standards and codes. Campus design incorporates slope stabilization requirements, fire truck routing, and emergency evacuation plans (including temporary shelter, emergency evacuation routes, and emergency exits), campus traffic, and parking plans promoting pedestrian and bicycle traffic. Low-carbon and resource-efficient campus management features will be introduced on the campus, including a photovoltaic power generation system, high-efficiency heat pumps for air conditioning and hot water system, and on-site wastewater treatment and water reuse for campus landscaping (2,000 cubic meter per day). The project will include the procurement and installation of teaching and training equipment, which will be procured using a special fund from the Ministry of Education. The TVET capacity building components have been designed to incorporate international best practices in MLT competency-based curricula and teaching, and school-industry partnerships.

#### B. Economic and Financial

20. **Economic analysis**. Developing a MLT system will improve the competitiveness of Baise industries and support inclusive growth. The direct economic benefits include increased graduates finding employment and better remuneration. Indirect benefits include improved responsiveness of TVET to industry needs and improved quality of TVET provision that will filter to other schools in the municipality. The economic analysis confirmed economic viability of the project. The sectoral wage levels and demand in Baise were projected and applied for the project economic benefit quantification. The cost–benefit analysis reveals the project's overall economic internal rate of return at 16.7%, exceeding the economic opportunity cost of capital of 12% and the overall economic net present value at CNY249.6 million. Sensitivity analysis indicates that the economic internal rate of return is robust against all negative impacts.

21. **Financial sustainability**. A financial sustainability analysis was undertaken during project preparations based on fiscal impact. It indicates that the proposed project entails manageable fiscal risk regarding BMG's ability to provide counterpart funds for capital investment, finance operation and maintenance cost, and service project debts. The total fiscal contributions to the project will be 0.13% to 1.08% of BMG's projected fiscal revenue during project implementation—and at most 0.65% of fiscal revenue for debt service and operation and maintenance during the operation period. The project is therefore considered both financially sustainable and has controllable risks for BMG.

#### C. Governance

22. Financial management and procurement capacity assessment. The project will be ADB's third loan to BMG, which is successfully managing other projects. The financial management and procurement capacity assessments conclude that, although Baise University has financial management capacity and project management experience, it lacks sufficient experience in managing ADB projects and thus capacity building to implement the project in line with ADB policies and procedures is necessary. The GZAR Finance Department, which will operate and administer the imprest account, has sufficient experience in administering projects financed by multilateral agencies including ADB. The financial management assessment concluded that the overall risk rating is medium and recommends capacity development measures to ensure that the PMO and the implementing agency are able to meet the project's financial management requirements. With mitigation, the PMO and the implementing agency will have adequate capacity for financial management and procurement. A procurement agent will be hired as per normal PRC procedures, and provision has been made for training and advice to the PMO and implementing agency in ADB procedures, including procurement, disbursement, project management, and accounting systems. The financial management assessment is documented in the full project financial analysis. A summary is included in the PAM and recommended improvements have been incorporated into the project design. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the BMG, the PMO, and implementing agency. The specific policy requirements and supplementary measures are described in the PAM.

#### D. Poverty and Social

23. A social, poverty, and gender analysis was undertaken in accordance with the ADB guidelines. Baise Municipality is one of the 14 national intensively poverty stricken areas of the PRC. Nine of its 12 counties are national and two are regional poverty counties. The per capita disposable income of urban and rural households in Baise is lower than both the provincial and national averages.<sup>14</sup> The majority of students at Baise vocational school (BVS) (93%) and Baise vocational college (BVC) (78%) are from rural areas in the municipality, while the majority of students at Baise University come from across GZAR, but are also largely rural (65%). Employment rates of graduates are 93.5% at Baise University and 93.7% for BVC. Since 2012, SVS tuition has been free, and Baise University and BVC students avail of a wide range of financial assistance from national, regional, and local resources.

24. **Gender**. The project is categorized as effective gender mainstreaming. The poverty and social analysis revealed that the female students of BVS, vocational college, and Baise University account for 90%, 75%, and 55% of total students, respectively. There are high levels of female enrollment in the majors of preschool education and tourism primarily due to gender stereotyping of occupations linked with these majors and low levels in the priority science, technology, and engineering majors. Given the potential that Baise Municipality has in becoming an industrial hub, improvement of TVET programs will have a substantial impact

<sup>&</sup>lt;sup>14</sup> The urban per capita disposable income average was CNY19,561 in 2012, lower than the national (CNY24,565), and GZAR (CNY21,243) averages. The per capita net income of rural households was CNY4,774 in 2012, lower than both the national (CNY7,917), and the GZAR (CNY6,008) averages.

on creating economic pathways for women, especially those from rural and poor areas. The SGAP ensures social inclusion and gender mainstreaming in all components of the project. Gender actions and targets include (i) 50% female participation in MLT and recruitment outreach programs; (ii) 40% female teachers participation in core teacher training, (iii) gender-sensitive competency-based curriculum development; (iv) new campus include separate male/female dormitories, separate male/female latrines in campus facilities, and improved night safety measures; (v) 35% female target for civil works operation positions; (vi) gender recognition award for industry partners; (vii) female students paired with mentors for career guidance; and (viii) introduction of specific measures for prevention, reporting and response to sexual harassment.

#### E. Safeguards

25. **Environment**. The project is classified as category B for environment. An initial environment examination, including the environmental management plan was prepared in compliance with ADB's Safeguard Policy Statement (2009) and disclosed to affected people.<sup>15</sup> Environmental impacts are anticipated during the construction of campus facilities, including inadequate waste management, noise, fugitive dust, and construction site safety. These will be localized and short-term, and are adequately addressed in the environmental management plan, supported by capacity development and institutional strengthening activities under the project. Meaningful consultation with potentially affected people and project beneficiaries was conducted during project preparation. Environmental complaints will be handled in accordance with the grievance redress mechanism developed for the project, coordinated by the BPMO.

26. No significant impact is anticipated during project operation. The project will support the development of a low-carbon, resource-efficient, and environmentally sustainable campus. All buildings will be designed in compliance with green and energy-efficient building codes and specifications.<sup>16</sup> A photovoltaic power generation system will be installed in the campus, expected to generate some 3.86 million kWh of electricity per year, or 15% of the total demand of project facilities. High-efficiency heat pumps will be installed for air-conditioning (heating, cooling) of two project buildings, and to supply hot water for the student dormitories.<sup>17</sup> The project will also support Baise University in defining a campus sustainability strategy and establishing a Green Sustainability Center. The strategy will ensure sustainable environmental path for Baise University through the identification of priority sustainability programs related to low-carbon, energy- and resource-efficient campus management, green curriculum development, and community environment awareness. The center, to be established under Baise University with project support, will coordinate the formulation and implementation of these programs.

27. **Resettlement**. The involuntary resettlement category is C. The project activities will not require land acquisition or resettlement. Resettlement due diligence has been undertaken, yielding satisfactory results with no outstanding issues.

28. **Indigenous peoples**. The indigenous peoples' category is B. The poverty and social assessment has determined that no project activities will adversely affect indigenous people. Ethnic minority students and staff make up a large percentage at each of Baise University's institutions. Baise Municipality and its ethnic minority communities will benefit from increased

<sup>&</sup>lt;sup>15</sup> Initial Environmental Examination (S Appendix 3).

Including, but not limited to GB/T50378-2006 (Évaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50011-2010 (Building Seismic Design Code); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007), and other applicable national design codes.

<sup>&</sup>lt;sup>17</sup> The heat pumps are expected to reduce electricity consumption by 2.34 million kilowatt hour per year.

numbers of trained human resources for its industries and services. As per para, 17 SR3<sup>18</sup> of the ADB Safeguard Policy Statement (2009), the project has included measures in the overall project design in lieu of preparing a separate indigenous peoples plan. An analysis of the issues stemming from consultations with staff, students and other stakeholders (e.g., Baise Ethnic Minority Affairs Bureau) was prepared and recommended actions integrated into the project design. Measures include (i) integration of ethnic minority culture in new curriculum; (ii) targets for ethnic minority staff participation in training; (iii) inclusion of ethnic minority issues in regional cooperation expansion plan; (iv) review of bridging modules/courses to address rural/urban disparities; (v) improvement of rural student recruitment; and (vi) ethnicity indicators in tracer and industry surveys, and employment information system.

#### F. **Risks and Mitigating Measures**

29. Major risks and mitigating measures are summarized in Table 4 and detailed in the risk assessment and risk management plan.<sup>19</sup> Integrated benefits and impacts are expected to outweigh the costs.

| Risks   | Mitigating Measures  |  |  |  |
|---|--|--|--|--|
| MLT unattractive to the potential student population  | Central government is strongly supportive of MLT development.<br>The project design is intended to improve the quality and<br>relevance of TVET courses at all levels and to improve the<br>employability of graduates.  |  |  |  |
| The commitment of Baise<br>University and its TVET<br>institutions to implementing<br>change is not sustained | TVET improvement strategies have been developed through a consultative process that indicated strong recognition of the need to improve. The strategies were reviewed and finalized with the participation of the staff and management.                                      |  |  |  |
| Insufficient interest by the BMG<br>and GZAR government in<br>integrating the pilot innovations               | The BMG will give a loan assurance that they will actively<br>disseminate the project results and seek to make them models<br>of best practice. There will also be ongoing policy dialogue on<br>the activities with relevant departments of the BMG and GZAR<br>government. |  |  |  |
| Procurement capacity is low,<br>leading to mistakes or delays in<br>procurement.                              | The project will provide training in project management and planning. Standard bidding documents, advice and support of a procurement agent and start up consultant will be utilized.  |  |  |  |
| BMG = Baise Municipal Government, GZAR = Guangxi Zhuang Autonomous Region, TVET = technical and vocational    |  |  |  |  |

#### Table 4: Summary of Major Risks and Mitigating Measures

education and training.

Source: Asian Development Bank.

#### IV. ASSURANCES AND CONDITIONS

30. GZARG and BMG assured ADB that the implementation of the project will conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM, and which it is agreed to be incorporated into the loan documents. Furthermore, BMG agreed with ADB on certain covenants for the project, which will be set forth in the loan and project agreements.

<sup>18</sup> 

<sup>&</sup>quot;If Indigenous Peoples are the sole or the overwhelming majority of direct project beneficiaries, and when only positive impacts are identified, the elements of an [indigenous peoples plan] could be included in the overall project design in lieu of preparing a separate [indigenous peoples plan]". ADB. 2009. Safeguard Policy Statement. Manila. p. 57

<sup>19</sup> Risk Assessment and Risk Management Plan (Appendix 8).

#### V. RECOMMENDATION

31. The Consultant for PPTA 8448-PRC has worked closely since February 2014 with the EA and IA under the ADB mission's guidance to assure that the proposed loan to the PRC for the Guangxi Baise Vocational Education Development Project is prepared in full compliance with the ADB requirements. The Consultant would like to recommend that the Board approve the loan of \$50,000,000 to the People's Republic of China for the Guangxi Baise Vocational Education Development Project, from ADB's ordinary capital resources, with interest to be determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility; for a term of 25 years, including a grace period of 6 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan and project agreements presented to the Board.

## Appendix 1 Design and Monitoring Framework

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

#### **DESIGN AND MONITORING FRAMEWORK**

| Design Summary  | Performance Targets and<br>Indicators with Baselines   | Data Sources and<br>Reporting Mechanisms                 | Assumptions and Risks  |
|---|--|--|--|
| Impact<br>Economic development<br>and industrial<br>transformation of Baise                                     | <b>By 2023 :</b><br>% increase in employment in<br>priority economic sectors<br>(Baseline: TBD in 2015).   | BMG Annual Statistics                                    | Assumption<br>The government sustains<br>its priority for developing a<br>multilevel labor pool.   |
| wantipaity.   | % increase in average wages<br>(Baseline 2013: CNY36,100)  | BMG Annual Statistics                                    | <b>Risk</b><br>Economy falters and key<br>industries fail to expand.   |
| Outcome<br>A high quality, flexible,<br>and responsive MLT<br>system developed<br>which meets industry<br>needs | By 2019:<br>At least six multilevel<br>programs in priority TVET<br>majors established by 2018<br>(0 in 2014).   | Project progress reporting                               | Assumption<br>Coordination of Baise<br>University institutions,<br>curriculum, and resources<br>continues.   |
|   | % increase in graduates<br>(disaggregated by level, sex,<br>major, ethnicity, hukou<br>residence) (Baseline: TBD in<br>2015)   | Base University and Baise<br>Education Bureau statistics | <b>Risk</b><br>Shift in education policy<br>away from multilevel<br>TVET development.  |
|   | Increased employer<br>satisfaction with knowledge,<br>skills and competencies of<br>employees graduating from<br>the project TVET institutions<br>(Baseline: TBD in 2015).                         | Tracer studies and industry surveys                      |  |
| Outputs 1. TVET quality improved and capacity developed   | Competency-based gender<br>sensitive curricula developed<br>with industry and at least six<br>implemented by 2019.   | Project progress reporting                               | Assumption<br>Industry experts will<br>participate fully in<br>developing effective<br>training programs.  |
|   | TVET student enrollment in<br>priority majors increases by<br>at least 25% with target of<br>30% female student<br>enrollment by 2018<br>(disaggregated by sex and<br>further by level and major). | Project progress reporting                               | <b>Risks</b><br>Curricula developed do<br>not adequately identify<br>and respond to market<br>demand.<br>Poor social perception of<br>TVFT limits MLT students |
|   | 30% student graduates<br>increase in Baise University<br>(disaggregated by major and<br>sex).  | Baise University statistics                              |  |
|   | % graduates receiving<br>employment in areas where<br>they have been trained   | Baise University statistics                              |  |
|   | 550 teachers (40% female<br>teachers) trained in CBA<br>pedagogy and industry<br>relevant skills (disaggregated<br>by sex, major, TVET level).   | Project progress reporting                               |  |
|   | 40% increase in dual<br>qualified teachers (2014<br>baseline: 14%<br>disaggregated by sex, major,<br>level)  | Project progress reporting                               |  |
| 2. Chengbi campus<br>constructed and<br>environmental   | 12 buildings constructed by<br>2017 including: 19,000m <sup>2</sup> of<br>classrooms, 26,000m <sup>2</sup> of  | Project progress reporting                               | Assumptions<br>Project financing is<br>provided on time  |

| Design Summary                             | Performance Targets and<br>Indicators with Baselines  | Data Sources and<br>Reporting Mechanisms   | Assumptions and Risks   |  |  |  |  |
|--|---|--|---|--|--|--|--|
| sustainability<br>promoted.                | training facilities, separate<br>male/female dormitories,<br>separate male/female latrines<br>in campus facilities, safety<br>features at night and 3.86<br>megawatt photovoltaic power<br>generation system<br>operational by 2018.<br>Campus sustainability<br>strategy defined by 2015 and<br>Green Sustainability Center<br>operational by 2017.<br>Share of renewable energy<br>consumption of Baise | Strategy report, project<br>progress reports<br>Baise University facilities<br>management reporting, | Project design and<br>construction are<br>implemented effectively<br><b>Risks</b><br>Delay in hiring the<br>procurement agent and<br>project implementation<br>consultants.<br>Relevant agencies lack<br>coordination in<br>implementation and<br>monitoring. |  |  |  |  |
|  | University increased from 0%<br>in 2014 to 15% by 2019.<br>Number of students<br>benefitting from new facilities<br>(Target 18,000, at least<br>Female target: 40%  | and project progress<br>reports<br>Project progress reports  |   |  |  |  |  |
| 3. TVET innovation and relevance promoted  | Student information and<br>employment data system<br>established with capacity to<br>disaggregate social and<br>gender indicators by 2017.  | Project progress reporting   | Assumption<br>Regional cooperation<br>partners are ready to<br>engage on TVET.<br>Risk  |  |  |  |  |
|  | At least 10 regional<br>cooperation agreements<br>signed by 2019.   | Project progress reporting   | Industries continue to<br>seek qualified personnel<br>from outside of Baise.  |  |  |  |  |
|  | At least 20 industry<br>partnerships created<br>(disaggregated by industry)<br>by 2019.   | Project progress reporting   |   |  |  |  |  |
|  | Career guidance and<br>mentoring sessions link<br>students with role models<br>(100% female students)   | SGAP monitoring reports  |   |  |  |  |  |
| 4. Project<br>implementation<br>management | Institutional arrangement of<br>project management office<br>strengthened and fully staffed<br>(30% female, 50% ethnic<br>minority) by 2015.<br>PPMS established and<br>operationalized by 2015.  | Project progress reporting   | Assumption<br>Trained staff on project<br>management and<br>coordination remains in<br>their respective positions<br>till the end of project<br>implementation and<br>beyond.   |  |  |  |  |

| Ac | tiviti      | es with Milestones   | Inputs                                    |
|----|-------------|--|---|
| 1. | Imp         | roving TVET Quality and Capacity Development   |   |
|    | 1.1         | Develop core curriculum standards and CBA by Q4 2016.  | Loan                                      |
|    | 1.2         | Develop curriculum framework for MLT that incorporates a competency-based approach to course delivery in pillar industries | ADB: \$50.0 million                       |
|    |             | in collaboration with industries by Q1 2016.   | Item Amount                               |
|    | 1.3         | Develop teachers' guides, course materials, assessment tools   | (\$ million)                              |
|    |             | and train teachers by Q3 2018.   | Total 50.00                               |
|    | 1.4         | Upgrade teachers' skills in competency-based approach that is  | Counterport funding:                      |
|    |             | applied to their majors in priority areas by Q1 2018.  | Counterpart funding:                      |
|    | 1.5         | Develop teacher training modules, standards, and assessment  | Baise Municipal Government:               |
|    |             | handbook by Q4 2016.   | \$40.64 million                           |
|    | 1.6         | Policy and guidelines developed for TVET teacher training center   | Commercial Banks \$12.00 million          |
| •  | ~           | by Q2 2016.  | Commercial Bank: \$12.90 million          |
| 2. | Che         | ngbi Campus Construction and Promoting Environmental   | Item Amount                               |
|    | Sus         | tainability  | (\$ million)                              |
|    | 2.1         | Design facilities and procure the works by Q2 2015.  | Total 53.54                               |
|    | 2.2         | Drogure and install training equipment by Q3 2010.   |   |
| 2  | Z.J<br>Drog | moting TVET Innevation and Polovance   |   |
| э. | 2 1         | Implementation of student information and employment data  | Numbers may not sum precisely             |
|    | 5.1         | system by O1 2016  | because of rounding                       |
|    | 32          | Identify regional cooperation partners for key majors strategies   |   |
|    | 0.2         | and monitoring indicators by Q3 2017   |   |
|    | 3.3         | Implement regional cooperation agreements by Q1 2018.  |   |
|    | 3.4         | Create effective industry partnerships for training, research, and   |   |
|    | -           | employment by Q3 2016.   |   |
|    | 3.5         | Create leading groups at Baise University with industry  |   |
|    |             | representation by Q4 2015.   |   |
|    | 3.6         | Initiate training and research partnerships by Q4 2018.  |   |
| 4. | Proj        | ject Implementation Management   |   |
|    | 4.1.        | Complete necessary organizational arrangements for   |   |
|    |             | implementation plan (setting up accounting systems and   |   |
|    |             | improving financial and administrative policies and procedures)  |   |
|    |             | by Q4 2014.  |   |
|    | 4.2.        | Recruit and mobilize implementation support consultants by Q1  |   |
|    |             | 2015.  |   |
|    | 4.3.        | Undertake training and provide project implementation support to   |   |
|    |             | implementing agency by Q2 2015 (including ADB procedures,  |   |
|    |             | procurement, disbursement, safeguards monitoring, and financial  |   |
|    |             | management).   |   |
|    | 4.4.        | Implement EMP and SGAP until Q4 2019.  |   |
| AD | B = A       | sian Development Bank, BMG = Baise Municipal Government, CBA = c   | competency-based curriculum, EMP = ethnic |

ADB = Asian Development Bank, BMG = Baise Municipal Government, CBA = competency-based curriculum, EMP = ethnic minority plan, MLT = multilevel TVET, PPMS = project performance monitoring system, SGAP = social and gender action plan, TBD = to be determined, TVET = technical and vocational education and training.

## Appendix 2 Sector Assessment (Summary): Education

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

#### SECTOR ASSESSMENT (SUMMARY): EDUCATION

#### **Sector Road Map**

#### 1. Sector Performance, Problems, and Opportunities

1. The People's Republic of China (PRC) is one of the fastest growing economies worldwide with its average annual growth rate of 10.0% in the past three decades.<sup>1</sup> Despite this impressive growth, the PRC is facing a number of urgent development challenges. The government's priorities of rebalancing the economy from export to consumption-oriented growth; from low to higher value industries; and environmentally sustainable and socially inclusive development all require significant investments in human capital. Through these policies, the PRC's hopes to develop more skill-intensive and value-added products, and a production-based secondary and tertiary economy. The government is committed to increasing investment in education to transform the country's growth pattern and boost consumption. The overall quality of human resources is still low compared to more developed countries, and makes upgrading of workforce skills a top priority.

2. Continuing large-scale urbanization and the ambitious plans for economic transformation create both a challenge and an opportunity for the education sector. The National Long-Term Strategy on Education 2010–2020 seeks to better align the education system with the demands of the inclusive and sustainable growth and identified technical and vocational education and training (TVET) as one of the key priorities for educational reform. One of the main targets is for 28.0% of the total labor force to be highly skilled by 2020. The main elements of policy reform that have emerged over the past decade include expansion of TVET, increasing access and equity, modernizing curriculum and teaching methods, strengthening the role of employers, and management reforms. Two recent (2014) policy reforms are (i) the creation of TVET applicable universities, focused on scientific and technological courses, and (ii) the creation of a multilevel TVET system (MLT), which will blend vocational training and academic education, provide learning pathways, and foster career development opportunities. These policy reforms form the basis for provincial and local education strategies to enhance TVET as a socially inclusive and employment-driven form of education.

3. TVET in the PRC is provided under the governance of the Ministry of Education (MOE) and the Ministry of Human Resources and Social Security (MOHRSS). The MOE oversees secondary vocational schools (SVS) and tertiary vocational colleges at post-secondary level. Entry requirement to SVS is the successful completion of junior high school (grade 9), and admission to vocational colleges is based on performance in the national higher education entrance examination. SVS mostly offer 3-year programs and graduates either enter the labor market or progress to vocational colleges (and a small minority to undergraduate programs). The vocational colleges offer 2–3 year programs in over 300 occupational courses. The MOHRSS is responsible for vocational training in skilled worker schools and senior skilled workers schools at the secondary level. These institutions provide 2- to 3-year certificate courses specially designed for the state occupational qualification of skilled workers. Workplace training is an integral part of training programs. A national skill testing system exists for vocational qualifications under MOHRSS with open access.

4. Despite impressive progress, TVET development is hampered by funding constraints, low quality of the training instructors, shortage of investment for training equipment and facilities, low relevance of the training curricula to the labor market needs, and insufficient mechanisms for industry-school partnerships. The quality of the TVET system is the primary concern. TVET curricula need to be developed using industry recognised competency standards. Most lecturers and instructors in TVET institutions lack dual qualifications based on having current and relevant workplace experience. Facility and equipment upgrades are important to improve the quality of instructional processes.

#### 2. Guangxi Province and Baise County's Sector Context and Strategy

<sup>&</sup>lt;sup>1</sup> The government's Twelfth Five-Year Plan targets annual gross domestic product growth of 7.5% during 2011–2015.

5. Guangxi Zhuang Autonomous Region (GZAR)<sup>2</sup> is located in the southern part of the country, bordered by Yunnan to the west, Guizhou to the north, Hunan to the northeast, Guangdong to the southeast, and Viet Nam in the southwest. Its population consists of seven main ethnic groups: Zhuang, Han, Yao, Miao, Dong, Milam, Mao Nan, and 31 other smaller ethnic minority population groups. Ethnic minority population accounts for 38.4 % of the region's population. The single largest minority group is the Zhuang minority group with more than 15 million persons, representing 85.7% of the region's minority population.

6. Baise Municipality is located in northwestern GZAR. Baise has a total land area of 36,300 square kilometers and a population of 3.98 million, with six ethnic minority groups making up 86% of its population. Baise administers 12 counties/districts and 135 towns/townships. Over the past 7 years, Baise has emerged as a new economic growth pole in GZAR focused on four base industries of aluminum processing, agriculture, tourism, and regional trade and logistics. Located near the border with Viet Nam, Baise is also an important gateway to countries of the Association of Southeast Asian Nations (ASEAN) and Greater Mekong Subregion (GMS).

7. Baise has limited TVET options as it has only two vocational colleges and one undergraduate university program (Baise University) as well as 22 SVS. In 2013, Baise had 19, 918 SVS students, more than 400 vocational college students, and more than 8,000 undergraduates. The Action Plan for Developing TVET Education in Baise projects that by 2015, enrolled SVS students and enrolled vocational college students will increase to 58,000 and 8,000, respectively. The current gap between the present educational situation and the expected targets is a large one and the increased enrollments are unlikely to be achieved.

8. Baise University is approved by the MOE as a full-time integrated undergraduate institute for local vocational education. The university has two campuses, Donghe (occupying 217 *mu*/0.145 km<sup>2</sup>) and Chengbi (1698 *mu*/1.082 km<sup>2</sup>) with a total area of 1,915 *mu*/1.277km<sup>2</sup>. Its 150,000 square meter-dorm area can accommodate 13,600 students. It possesses 10 departments with 30 undergraduate specialties, 37 advanced vocational programs, and seven SVS specialties. It has developed the basis for a MLT system based on its SVS, vocational, and undergraduate levels. However, linkages between programs and institutions and programs need strengthening.

9. Baise University used to be a normal college, focused mainly on teacher training. In the last decade, it became a university offering both a 3-year post-secondary associate degree programs, *dazhuan* as in Chinese; and 4-year university degree programs, *Benke* as in Chinese. During the period of the Twelfth Five-Year Plan, Baise University has been trying to implement the national policy of becoming a TVET-applied university focusing on the application of science and technology in the workplace. The university sees its future as offering education programs at secondary and higher TVET levels and intends to define itself as a community college, serving the local community and neighboring GMS and ASEAN member countries.

10. The other strategy to achieve higher education status in Baise is building an MLT system. Baise University intends to provide more access for students from SVS to vocational college, and increased access to its 4-year university programs. It also plans to allow students to transfer between majors and departments. These are key strategies to reposition itself in the education system and re-define its role. The transition of Baise University to a TVET-applicable university is in line with government's policy to create 600 transformed universities, focused on scientific and technological applications in the next few years. Baise University is one of 18 other universities in Guangxi Province that were chosen in 2014 to become TVET-applicable universities. The initial planning and support that Baise University is receiving through the Asian Development Bank's (ADB) loan positions it as a valuable resource for Guangxi Province and underlines its importance as a central TVET hub for the province. There is great potential for Baise University to achieve demonstration school status in a number of high demand sector industries.

<sup>&</sup>lt;sup>2</sup> Guangxi Zhuang Autonomous Region has an area of 236,700 square kilometers (km<sup>2</sup>) with a population of 46,026,629 and population density of 207/km<sup>2</sup> (2010 census).

11. Baise Vocational School (BVS) is a private secondary vocational school registered by the Educational Department of GZAR. It is sponsored by Baise University and administered by Baise Education Bureau. It is also a designated vocational training institute, jointly approved by Baise Human Resources and Social Security Bureau and Baise Finance Bureau. Relying on Baise University, BVS is seeking to have seven secondary vocational specialties, including preschool education, electromechanical technology applications, music, computer application, e-Commerce, accounting, and welding technology applications. Currently, only preschool education and computer science are offered. In addition, it also carries out 14 adult education (including migrant workers), training programs for turners, welders, maintenance electricians, chemical inspection workers, food inspection workers, and computer network administrators. The school enrolls students from the 12 counties of Baise but currently has less than 400 enrolled students. The school has managed to attract substantial sponsorship arrangements, primarily for work placements and employments of graduates and short course students.

12. The development of TVET in Baise has followed a similar pathway to that in Guangxi, with local planning being guided by generally similar targets. However, Baise's strategic location and the context of Baise City's Five-Year Action Plan, 2012–2016 have added a number of specific initiatives and targets that are the focus of TVET activity. Firstly, Baise is aiming to become a central hub for TVET through the development of several facilities including a TVET Training Center to provide teacher training and research opportunities and a TVET training park or incubator that encourages more education and industry cooperative activities. A second feature of TVET in Baise is the focus on core specialisations that are focused on high demand skills that will support economic development and industry restructuring and upgrading for the area. The focus areas include aluminium processing, engineering management, industrial design applications, tourism, logistics, and commercial agriculture to support horticulture and food processing. The planning includes extension of industry upgrading and cooperative activities into regional (GMS and ASEAN) areas.

13. Baise City's Five-Year Action Plan, 2012–2016 has flagged the importance of expanding industry in high demand areas such as organic large scale commercial farming and downstream processing of aluminium to create new and highly marketable products. The expected expansion will lead to the creation of new jobs that also require new knowledge and skills, primarily at technician and technologist occupational levels. To achieve the expected expansion in the short- to mid-term will require the supply of skills to be geared to these new (for Baise) priority areas and occupations. The TVET system, particularly given its recent multilevel institutional linkages will be a primary supply source for the necessary knowledge and skills required by industry. The MLT system focused on Baise University's needs to respond by attracting students entering the upper secondary level of education (BVS and other secondary schools in Baise) and to retain them to then enter vocational or undergraduate levels of education and training. The new campus and new TVET capacity building arrangements at Baise University need to be geared towards the supply of relevant and high priority skills required in Baise's industry expansion.

14. Baise is engaged in poverty reduction initiatives that increasingly use TVET programs as a means to improve opportunities for employment and social restructuring. The development of migrant worker retraining programs and education targeting girls from impoverished families are two TVET focused schemes receiving government funds and subsidies. There is a need to better connect these programs to continuing education and training programs and this will be a project focus through learning pathways development. A more diversified and dynamic MLT TVET system is required that produces graduates with relevant and required skills, has well-trained teachers with industry experience, encourages enhanced education and industry cooperation and partnerships, and has a regional focus for TVET development.

#### 3. ADB Sector Experience and Assistance Program

15. This project is the fourth ADB loan in education in the PRC.<sup>3</sup> ADB TVET sector experience is therefore relatively limited in the PRC, especially in project implementation. However, lessons learned from TVET projects operated by others (e.g. AusAID, GIZ, DFID, and also the World Bank) in the PRC have been incorporated into the project design. These include (i) actively involving representatives of industries in identifying priority sectors that are in demand, developing competency standards, curriculum development, and focusing on quality assurance; (ii) creating learning pathways that articulate between courses and institutional levels; and (iii) strengthening the capacity of teachers through providing access to professional development and research opportunities. The focus of ADB technical assistance projects in TVET on the need to improve training and curriculum development, promote lifelong learning and strengthen industry partnerships are also a feature of the current Guangxi Baise project.<sup>4</sup>

16. **Strategic fit.** Graduates' preparation for the workforce, through their acquisition of relevant employability and technical skills in high demand skill areas, is considered important for the PRC's structural reform of the economy. ADB's support for the TVET sector is therefore warranted as it seeks to improve and modernize the existing system. The project supports the ADB's Strategy 2020<sup>5</sup> and its education sector strategic plan and the PRC country partnership strategy, 2011–2015.<sup>6</sup> The project is consistent with the PRC's Twelfth Five-Year Plan, 2011–2015 which promotes environmentally friendly and resource efficient urban development rebalancing economic growth and giving priority to developing high quality human resources and accelerating education reform.

<sup>&</sup>lt;sup>3</sup> The previous three projects were the Hunan TVET Demonstration Project approved by the Board in June 2013 and the Guangxi Nanning TVET Development Project approved by the Board in December 2013 and the Shanxi TVET Development Project (pending approval as of June 2014).

<sup>&</sup>lt;sup>4</sup> ADB. 2007. Technical Assistance to the People's Republic of China for Shanxi Development Strategy for Technical and Vocational Education and Training. Manila.

<sup>&</sup>lt;sup>5</sup> ADB. 2008. Strategy 2020: Working for an Asia and Pacific free of Poverty. Manila

<sup>&</sup>lt;sup>6</sup> ADB. 2012. Country Partnership Strategy: People's Republic of China, 2011 – 2015. Manila

#### **Problem Tree for Education**



TVET = technical and vocational education and training.

| Country Sector Outcomes           |   | Country Sec                      | tor Outputs                            | ADB Secto                                | r Operations   |
|-----------------------------------|---|----------------------------------|--|--|--|
| Outcomes with<br>ADB Contribution | Indicators with Targets<br>and Baselines                | Outputs with ADB<br>Contribution | Indicators with<br>Incremental Targets | Planned and Ongoing<br>ADB Interventions | Main Outputs Expected<br>from ADB Interventions      |
| Access to municipal and           | Number of enrolled                                      | TVET quality improved            | Increased secondary                    | Planned key activity                     | Planned target subsectors                            |
| social services improved.         | students at secondary                                   | and capacity developed.          | school enrollment ratio                | areas                                    | Students educated and                                |
|                                   | vocational schools                                      |                                  | from 82.5% to 87%.                     | Capacity development for                 | trained under improved                               |
|                                   | increased from 21.79                                    |                                  |  | curriculum, teacher                      | quality assurance systems                            |
|                                   | million in 2009 to 22.5                                 |                                  |  | training, human resources,               |  |
|                                   | million by 2015, and at                                 |                                  |  | industry-school                          | New or improved                                      |
|                                   | post-secondary vocation<br>schools from 12.8 million in |                                  |  | partnerships, and facilities             | educational facilities                               |
|                                   | 2009 to 13.9 million.                                   |                                  |  |  | Teachers trained with                                |
|                                   |   |                                  |  | Pipeline projects with                   | quality or competency                                |
|                                   |   |                                  |  | estimated amounts                        | standards  |
|                                   |   |                                  |  | Guizhou Vocational                       |  |
|                                   |   |                                  |  | Education Development                    | Pipeline projects                                    |
|                                   |   |                                  |  | Project (\$100 million)                  | Improved facilities,                                 |
|                                   |   |                                  |  |  | increased quality,                                   |
|                                   |   |                                  |  | Guangxi Baise Vocational                 | effectiveness of TVET,                               |
|                                   |   |                                  |  | Education Development                    | and information                                      |
|                                   |   |                                  |  | Project (\$50 million)                   | technology processes                                 |
|                                   |   |                                  |  | Shanxi Technical and                     | Ongoing projects                                     |
|                                   |   |                                  |  | Vocational Education and                 | Improved quality of TVET                             |
|                                   |   |                                  |  | Training Development                     | provision (at least 80% of                           |
|                                   |   |                                  |  | Project (\$100 million)                  | teachers at project schools<br>trained in competency |
|                                   |   |                                  |  | Ongoing projects with                    | based curricula                                      |
|                                   |   |                                  |  | approved amounts                         | development)   |
|                                   |   |                                  |  | Hunan Technical and                      | · ,  |
|                                   |   |                                  |  | Vocational Education and                 | Students benefitting from                            |
|                                   |   |                                  |  | Training Demonstration                   | improved curriculum and                              |
|                                   |   |                                  |  | Project (\$50 million)                   | facilities (100,000)                                 |
|                                   |   |                                  |  | Guangxi Nanning                          |  |
|                                   |   |                                  |  | Vocational Education                     |  |
|                                   |   |                                  |  | Development Project (\$50                |  |
|                                   |   |                                  |  | million)                                 |  |

#### Sector Results Framework (Technical and Vocational Education and Training, 2011–2015)

ADB = Asian Development Bank, TVET = technical and vocational education and training.

## Appendix 3 Project Administration Manual

Project Number: 47009 / TA 8448-PRC September 2014

### People's Republic of China: Guangxi Baise Vocational Education Development Project

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#### Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Baise Municipal Government (BMG) and the Baise University are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by BMG and Baise University of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan Negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the Loan agreement. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Loan agreement, the provisions of the Loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

#### Abbreviations

| ADB   | = | Asian Development Bank                          |
|-------|---|---|
| BMG   | = | Baise Municipal Government                      |
| BPLG  | = | Baise project leading group                     |
| BPMO  | = | Baise project management office                 |
| BVC   | = | Baise vocational college                        |
| BVS   | = | Baise vocational school                         |
| CBA   | = | competency-based approach                       |
| CSC   | = | construction supervision company                |
| DMF   | = | design and monitoring framework                 |
| EIA   | = | environmental impact assessment                 |
| EMP   | = | environmental management plan                   |
| FMA   | = | financial management assessment                 |
| GAP   | = | gender action plan                              |
| GZAR  | = | Guangxi Zhuang Autonomous Region                |
| GZARG | = | Guangxi Zhuang Autonomous Region Government     |
| ICB   | = | international competitive bidding               |
| IEE   | = | initial environmental examination               |
| LIBOR | = | London interbank offered rate                   |
| MLT   | = | multilevel TVET                                 |
| NCB   | = | national competitive bidding                    |
| PAM   | = | project administration manual                   |
| PIU   | = | project implementation unit                     |
| PMO   | = | project management office                       |
| PRC   | = | People's Republic of China                      |
| QBS   | = | quality based selection                         |
| QCBS  | = | quality- and cost- based selection              |
| SGAP  | = | social and gender action plan                   |
| SOE   | = | statement of expenditure                        |
| SPS   | = | Safeguard Policy Statement                      |
| SVS   | = | secondary vocational schools                    |
| TVET  | = | technical and vocational education and training |
| TOR   | = | terms of reference                              |

#### I. PROJECT DESCRIPTION

#### A. Rationale

1. Located within Guangxi Zhuang Autonomous Region (GZAR),<sup>1</sup> Baise Municipality is in one of the 14 national poverty areas in the People's Republic of China (PRC). The population of 4 million includes six main ethnic minority groups,<sup>2</sup> which make up 86% of the population. Baise is being developed by the government as a new economic base in GZAR focused on expanding and moving to higher value chain production in four priority industries: (i) aluminum processing, (ii) agriculture, (iii) tourism, and (iv) regional trade and logistics. Positioned near the border with Viet Nam, the municipality is well placed to develop as an important logistical link to countries of the Association of Southeast Asian Nations and Greater Mekong Subregion. The strategic development of Baise supports the Twelfth Five-Year Plan agenda on rebalancing the economy and the national strategy on urbanization.

2. Increased investment has led to year on year growth of 25.2% but despite this, the future economic development of Baise is constrained by lack of a skilled workforce. Baise Municipal Government (BMG) has projected a current shortage of more than 80,000 skilled workers, particularly in the rapidly expanding priority industries, many of which are employing new technologies. A major issue for BMG and Baise industries and services is the number of people who leave the province to obtain low skilled work in other provinces and cities.<sup>3</sup> Baise has trouble attracting skilled labor because of the salary differential and comparatively undeveloped key industries, and is therefore left with little choice other than to develop its local human resources.

3. To address the skilled labor shortage, Baise's Twelfth Five-Year Plan includes a human resources development strategy, centered on creating an MLT system. The government's National Medium and Long-term Strategy on Education,<sup>4</sup> 2010–2020 identified technical and vocational education and training (TVET) as a critical element in developing a high skilled multilevel workforce to meet the demands of industry and services in the country. The strategy in Baise is aligned with two reforms being undertaken in the sector, which are changing the shape of education institutions and rebalancing the roles of academic and vocational education. These are (i) development of MLT systems, which seeks to blend vocational and academic education, create linkages between levels of TVET, promote lifelong learning, and provide learning pathways and career development for students; and (ii) transitioning some universities into TVET applicable institutions, which promote cooperation and development of pathways between TVET, higher education, and adult education programs; and facilitate collaboration between industry and education.

4. Development of MLT in Baise will help to address critical bottlenecks in the quality and supply of human resources and is an important strategy for BMG to support inclusive growth. The MLT will build opportunities for rural and ethnic minority students to better access and progress in education to be able to enter into the rapidly changing economy. The MLT in Baise will integrate the education and training systems to create multiple pathways for initial training, entry to and progress within the workforce by linking the human resources and skills supply from universities, vocational colleges, secondary vocational school (SVS), and short-term migrant courses. Baise University, with its current three level programs (SVS, vocational

<sup>&</sup>lt;sup>1</sup> Guangxi Zhuang Autonomous Region (GZAR) is one of the 12 less-developed provinces and autonomous regions in the western part of the People's Republic of China. Nine out of the 12 counties in Baise Municipality are national level poverty counties.

<sup>&</sup>lt;sup>2</sup> The main ethnic minority groups are Zhuang, Yao, Miao, Yi, Gilao, and Hui.

<sup>&</sup>lt;sup>3</sup> Estimated exit in 2012 of 600,000 people.

<sup>&</sup>lt;sup>4</sup> Government of the People's Republic of China, Ministry of Education. 2010. *National Long-term Strategy on Education*, 2010–2020. Beijing.

college, and university), and its role as the only higher education facility in the municipality<sup>5</sup> is well-positioned to take a leading role in MLT provision locally and eventually at provincial and national levels. To improve its relevance, Baise University has been selected<sup>6</sup> as one of 19 GZAR universities to transition into a TVET applicable institution with a focus on developing majors that link more closely to industry needs.

5. Implementing the reforms in MLT and the transition of Baise University from an academic to a TVET applicable university will require significant capacity building, upgrades in TVET infrastructure, equipment, and systems and participation of industry. The attractiveness of TVET as an option for students has been a challenge for BMG with low student engagement, retention, and continuation in the mid-level technician and technologist levels (i.e., in the vocational college and undergraduate TVET oriented courses), which are priorities for industry. The need for courses to provide industry-related TVET skills requires that current curriculum, instruction, and assessment are competency-based, and more flexible and responsive. Most staff members do not have relevant industry experience and standards to apply in the classroom and/or workshop. Building better partnerships with industry, involving them in curriculum development and training will facilitate the rapid transfer of skills and ensure relevance of the TVET programs and employability of students. The project focuses on implementing TVET quality improvements in curriculum and teacher training, and expansion and strengthening of school-industry partnerships will address these issues.<sup>7</sup>

6. Specialized facilities, workshops and learning spaces will be needed to support the emphasis on science and technology courses and competency-based curriculum. The new Baise University campus supported by the project will accommodate a multilevel system, with teaching and learning spaces beyond what is currently available. The new campus facilities and equipment will allow the MLT system to function and be responsive to industry. Features, such as the low carbon photovoltaic system and Green Sustainability Center<sup>8</sup> to be developed under the project will serve as models of green development for other campuses across PRC.

7. The plans for Baise to assume a regional role require innovative responses from the education sector. Baise University is involved in several regional cooperation arrangements with other universities in Association of Southeast Asian Nations and Greater Mekong Subregion countries. The project will build on these initiatives by (i) training a leadership team to support regional cooperation planning and activities; (ii) developing curriculum for majors, such as logistics and tourism; and (iii) undertaking research on the impacts of regional cooperation and industry expansion on human resources and skills needs in Baise.

8. Strategic fit. Ensuring that graduates are prepared for the workforce with relevant knowledge and skills is a major challenge for PRC's structural reform of the economy. The project is consistent with the PRC's Twelfth Five-Year Plan, 2011–2015 which promotes inclusive growth, environment friendly and resource-efficient urban development, developing high quality human resources, and accelerating education reform. The project is aligned with ADB's Strategy 2020, the recommendations from the midterm review of the strategy which

<sup>&</sup>lt;sup>5</sup> Baise University receives students from the 22 secondary vocational schools in the municipality as well as from GZAR and other provinces.

<sup>&</sup>lt;sup>6</sup> Baise University was selected by GZAR Education Bureau to participate in the Ministry of Education national program. Baise Education Bureau is involved in the project as part of the leading group and participant in the training activities including the work on migrant worker short term training with Bureau of Human Resources and Social Security.

<sup>&</sup>lt;sup>7</sup> The center for technical and vocational education and training under the project will serve other technical and vocational education and training schools in the municipality and eventually beyond. It will disseminate good practices in curriculum and staff development and industry partnerships.

<sup>&</sup>lt;sup>8</sup> The center will develop green campus management programs; curriculum and research in environment sustainability related areas and outreach to students, staff, and local communities. It will build on recommendations in TA 7862-PRC subproject 1.8 on "An Action Framework and Activities for Low Carbon Campus Creation".

emphasize promoting TVET to address the human resource agenda, and the education sector strategic plan.<sup>9</sup> It aligns with ADB's PRC country partnership strategy, 2011–2015.<sup>10</sup>

9. Incorporation of lessons learned. Lessons from TVET programs in PRC and globally were incorporated into the project design, including (i) involving industries in curriculum development and training; (ii) developing competency-based curriculum, teaching, and assessment approaches; (iii) creating learning pathways by establishing training programs that align with entry requirements for advanced programs; (iv) building a learning culture for innovation and reform; (v) creating an industry demand-led system through the use of labor market and student employment information; and (vi) establishing robust project monitoring and evaluation.

#### B. Impact and Outcome

10. The **impact** of the proposed project will be economic development and industrial transformation of Baise Municipality. The **outcome** will be a high quality, flexible, and responsive MLT system developed which meets industry needs.

#### C. Outputs

11. The proposed project components and associated outputs are **Output 1: TVET guality** improved and capacity developed. This component will (i) develop an integrated MLT system that provides integrated curriculum linking vocational secondary, college, and undergraduate levels of TVET; (ii) implement a competency-based approach (CBA) to curriculum, instruction, and assessment in priority areas across different majors and course levels;<sup>11</sup> (iii) upgrade teacher skills through pre-service and in-service professional development; (iv) upgrade assessment and quality assurance based on industry standards; (v) develop curriculum in entrepreneurship and employability skills; and (vi) develop a TVET teacher training center. The project will develop curriculum and teaching materials including digital content. Output 2. Chengbi campus constructed and environmental sustainability promoted. The component will construct Phase II teaching and residential buildings and facilities in the new Chengbi campus. The component includes the construction of 12 buildings with a total of 160,693 square meters building area.<sup>12</sup> A 3.86 million kilowatt hour (kWh) photovoltaic power system will be installed, and campus roads, sport facilities, slope protection, and other school facilities constructed. Teaching and lab equipment for the new campus will be financed by domestic funding. The Green Sustainability Center will ensure development and sustainability of green principles in campus management, curriculum development, and community outreach. Output 3: TVET Innovation and relevance promoted. The component will support strengthening school-industry partnerships, expanding regional cooperation activities and implementing strategic research. It will (i) enhance industry participation in management and delivery of curriculum and assessment; (ii) provide staff opportunities for industry visits, assignments, and training attachments; (iii) promote integration and enhancement of short-term migrant training into MLT; (iv) develop a regional cooperation management team and activities; and (v) conduct research on enterprise-TVET partnerships, emerging priority sectors, and future course and qualifications needs. Output 4: project implementation management. This component will support capacity building for the project management office (PMO) and TVET institutions in

<sup>&</sup>lt;sup>9</sup> ADB. 2008. Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020. Manila; ADB. 2014. Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific. Manila; and ADB. 2010. Education by 2020: A Sector Operations Plan. Manila.

<sup>&</sup>lt;sup>10</sup> ADB. 2012. Country Partnership Strategy: People's Republic of China, 2011–2015. Manila.

<sup>&</sup>lt;sup>11</sup> Selected priority areas are: aluminum processing, preschool education, design, engineering management and agriculture. Development of curriculum for new majors in tourism and logistics will also be conducted. These are in line with the priority growth sectors to support Baise becoming a new economic base.

<sup>&</sup>lt;sup>12</sup> An overview of the campus construction, equipment, and special features is in Appendix 5 of the project administration manual.

project management, monitoring, and evaluation to ensure efficient and effective project implementation in compliance with PRC and ADB requirements.

#### II. IMPLEMENTATION PLANS

#### A. Project Readiness Activities

|                                    |   |   |   |   | 20 | 014 |   |    |    |    |   | 2015 |   |   |   |   |   |    |    |    |                      |
|------------------------------------|---|---|---|---|----|-----|---|----|----|----|---|------|---|---|---|---|---|----|----|----|----------------------|
| Indicative Activities              | 3 | 4 | 5 | 6 | 7  | 8   | 9 | 10 | 11 | 12 | 1 | 2    | 3 | 4 | 5 | 8 | 9 | 10 | 11 | 12 | Responsibility       |
| Domestic processing                |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    |                      |
| EIA approval                       |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    | BEPB                 |
| FSR approval                       |   |   |   |   |    |     | [ |    |    |    |   |      |   |   |   |   |   |    |    |    | GDRC                 |
| Foreign capital utilization report |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    | NDRC                 |
| Project evaluation opinion report  |   |   |   |   |    |     | l |    |    |    |   |      |   |   |   |   |   |    |    |    | MOF                  |
| Loan negotiation                   |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    | MOF/NDRC, ADB        |
| ADB Board approval                 |   |   |   |   |    |     |   |    |    | I  |   |      |   |   |   |   |   |    |    |    | ADB                  |
| Loan signing                       |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    | ADB, MOF, GZARG      |
| Government legal opinion provided  |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    | MOF, GZARG           |
| Loan effectiveness                 |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    | ADB, MOF, GZARG, BMG |
|                                    |   |   |   |   |    |     |   |    |    |    |   |      |   |   |   |   |   |    |    |    |                      |

ADB = Asian Development Bank, BEPB = Baise Environmental Protection Bureau, BMG = Baise Municipal Government, EIA = environmental impact assessment, FSR = feasibility study report, GPFD = Guangxi Provincial Finance Department, GDRC = Guangxi Development and Reform Commission, GZARG = Guangxi Zhuang Autonomous Region Government, MOF = Ministry of Finance, NDRC = National Development and Reform Commission.
### B. Overall Project Implementation Plan

|   | 2014 2015 |       |       |    | 2016 |    |    |    | 2017 |    |    |    | 2018 |    |    |    | 2019 |    |    |    |    |    |
|---|-----------|-------|-------|----|------|----|----|----|------|----|----|----|------|----|----|----|------|----|----|----|----|----|
| Indicative Activities   | Q3        | Q4    | Q1    | Q2 | Q3   | Q4 | Q1 | Q2 | Q3   | Q4 | Q1 | Q2 | Q3   | Q4 | Q1 | Q2 | Q3   | Q4 | Q1 | Q2 | Q3 | Q4 |
| Implementation period Jan 2015– Dec<br>2019   |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 0 Project readiness activities  |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 0.1 Start-up consultants appointed  |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 0.2 Setting up project management,<br>procurement, and financial systems                    |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 0.3 Recruitment of the project<br>implementation consultants                                |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 0.4 Conduct project management<br>procurement and finance systems and<br>training workshops |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 0.5 Prepare documentation for advanced contracting financing                                |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| Output 1: TVET Quality Improved and C   | apaci     | y Dev | elope | d  |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.1 Multilevel TVET strategic development   |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| MLT system leading group established  |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| MLT architecture established  |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| Training provided in MLT system   |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| Establishment of MLT system data<br>management committee                                    |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.1 Develop communication and outreach plan   |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.2 Curriculum development  |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.2.1 Develop competency standards  |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.2.2 Develop CBA to curriculum, instruction, and assessment                                |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.2.3 Pilot courses at SVS, vocational college, and universities                            |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.2.4 Provide general training in CBA for<br>all teaching staff                             |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |
| 1.2.5 Develop curriculum in   |           |       |       |    |      |    |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |    |

|   | 20    | 14     |       | 2015    |        |          | 2016  |     |    | 2017 |    |    |    | 2018 |    |    |    | 2019 |    |    |    |    |
|---|-------|--------|-------|---------|--------|----------|-------|-----|----|------|----|----|----|------|----|----|----|------|----|----|----|----|
| Indicative Activities   | Q3    | Q4     | Q1    | Q2      | Q3     | Q4       | Q1    | Q2  | Q3 | Q4   | Q1 | Q2 | Q3 | Q4   | Q1 | Q2 | Q3 | Q4   | Q1 | Q2 | Q3 | Q4 |
| entrepreneurship and employability skills   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.2.6 Review of quality assurance system<br>in curriculum, assessment, and<br>qualifications  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.2.7 Develop teaching and learning resources   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.3 Teacher training and pedagogy   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.3.1 Policy for staff movement between levels  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.3.2 CBA guidelines developed  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.3.3 Policy and plans for TVET teacher training center   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.3.4 Design and deliver core teacher training system   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.3.5 Policy on staff incentive structures<br>(human resources management)  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.4 Staff development   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.4.1 Revision of staff training plan to<br>include MLT system  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.4.2 Strategy for dual qualifications upgrade  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.4.3 Development of leadership training<br>program   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.4.4 Develop and deliver program for core teachers   |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.4.5 Develop domestic study tours for<br>observation and investigations  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 1.4.6 Organize staff training attachments in<br>domestic TVET institutions  |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| <b>Output 2: Chengbi Campus Constructed</b>   | and E | Inviro | nment | tal Sus | staina | bility I | Promo | ted |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.1 Preliminary design of advance<br>contracting and retroactive (advance<br>contracting and retroactive financing)<br>financing packages |       |        |       |         |        |          |       |     |    |      |    |    |    |      |    |    |    |      |    |    |    |    |

|  | 20    | 14    |    | 2015 |    |    | 2016 |    |    | 2017 |    |    |    | 2018 |    |    |    | 2019 |    |    |    |    |
|--|-------|-------|----|------|----|----|------|----|----|------|----|----|----|------|----|----|----|------|----|----|----|----|
| Indicative Activities  | Q3    | Q4    | Q1 | Q2   | Q3 | Q4 | Q1   | Q2 | Q3 | Q4   | Q1 | Q2 | Q3 | Q4   | Q1 | Q2 | Q3 | Q4   | Q1 | Q2 | Q3 | Q4 |
| 2.2 Bidding document for advance<br>contracting and Retroactive Financing<br>packages      |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.3 Preliminary design for other packages  |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.4 Construction drawings for advance<br>contracting and retroactive financing<br>packages |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.5 Bidding documents for other packages   |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.6 Construction drawings for other<br>packages  |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.5 Construction of advance contracting<br>and retroactive financing packages              |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.6 Construction of other packages   |       |       |    | 1    |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 2.7 Equipment procurement  |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| Output 3: TVET Innovation and Relevanc   | e Pro | moted | ł  |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.1 School-industry partnerships   |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.1.1 Development of student information<br>and employment system                          |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.1.2 Industry attachments organized   |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.1.3 Enterprise education facility<br>established   |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.1.4 Establish school-industry leading<br>groups  |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.1.5 Design and implement model training<br>programs for migrant workers                  |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.1.6 Design and implement<br>entrepreneurship. incubation program                         |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.2. Regional cooperation  |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.2.1 Team trained in regional cooperation activities/strategies                           |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.2.2 Attendance at regional forums and activities   |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |
| 3.2.3 Cross border language education<br>programs investigate                              |       |       |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |      |    |    |    |    |

|   | 20 | )14 | 2015 |    | 2016 |    |    | 2017 |    |    | 2018 |    |    |    | 2019 |    |    |    |    |    |    |    |
|---|----|-----|------|----|------|----|----|------|----|----|------|----|----|----|------|----|----|----|----|----|----|----|
| Indicative Activities   | Q3 | Q4  | Q1   | Q2 | Q3   | Q4 | Q1 | Q2   | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| 3.2.4 Further University Of Thailand<br>opportunities                                   |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 3.2.5 APEC standards workshop(s)  |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 3.3. Research   |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 3.3.1 School-industry policy development  |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 3.3.2 Research into emerging sectors<br>applied to MLT system                           |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| Output 4: Project Implementation Management   |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 4.1 Organizational arrangement for<br>implementing agency completed and<br>strengthened |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 4.2 Recruit and mobilize implementation<br>support consultants                          |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 4.3 Undertake training and provide project implementation support                       |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 4.4 Implement EMP, SGAP   |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |
| 4.5 Develop and implement campus<br>sustainability strategy, sustainability<br>center   |    |     |      |    |      |    |    |      |    |    |      |    |    |    |      |    |    |    |    |    |    |    |

APEC = Asia-Pacific Economic Cooperation, CBA = curriculum-based approach, EMP = environmental management plan, MLT = multilevel TVET system, SGAP = social and gender action plan, SVS = secondary vocational school, TVET = technical and vocational education and training.

#### III. PROJECT MANAGEMENT ARRANGEMENTS

#### A. Project Implementation Organizations—Roles and Responsibilities

1. The Baise Municipal Government (BMG) will be the executing agency for the project. BMG has set up an interagency Baise project leading group (BPLG), which is chaired by the standing vice mayor, and the deputies are the vice mayor and deputy secretary general of the BMG. The leading group consists of representatives from different municipal agencies.<sup>1</sup> The BPLG provides overall guidance, coordination, and monitoring for the implementation of the projects financed by international financial institutions in Baise. The Baise project management office (BPMO) is under the Baise Development and Reform Commission, and directly under the BPLG. The BPMO will be responsible to coordinate with Baise University on day-to-day project implementation, including organizing and coordinating the project activities and contacting and coordinating with Asian Development Bank (ADB). The project implementing agency (IA) is Baise University, which has set up a project leading group cochaired by Baise University's Party Secretary General and the President. Baise University's project implementation unit (PIU) is directly under the implementing agency leading group. The PIU will be responsible for day-to-day operations and coordination of the project preparation and implementation. Three Baise University departments are included as members in the PIU, which will be responsible for management, operations, and monitoring of project implementation including (i) Construction Management Department responsible for construction coordination and supervision, quality assurance, and safeguards; (ii) Teaching Affairs Department responsible for multilevel TVET capacity building and innovation; and (iii) Financial Department responsible for loan disbursement, contract management, and financial management. In addition, the PIU will be responsible for social safeguards (ethnic minority), broader social and gender issues and implementation of project performance management system.

| Project Stakeholders                           | Management Roles and Responsibilities   |
|--|---|
| Oversight Body<br>Baise Project Leading group  | <ul> <li>(i) Providing overall policy guidance.</li> <li>(ii) Facilitating interagency coordination.</li> <li>(iii) Resolving any institutional problems affecting project preparation and implementation.</li> </ul>   |
| Executing agency<br>Baise Municipal Government | <ul> <li>(i) Providing overall project direction and any required policy guidance.</li> <li>(ii) Overseeing the preparation and implementation of the project.</li> <li>(iii) Providing overall strategic guidance to the project.</li> <li>(iv) Supporting cross-agency policy dialogue.</li> <li>(v) Reviewing project progress to support effective implementation.</li> <li>(vi) Ensuring counterpart contributions are provided for project implementation on time.</li> </ul> |
| Baise finance bureau                           | <ul> <li>(i) Establishing, managing, monitoring, and reconciling the imprest account.</li> <li>(ii) Reviewing the withdrawal applications submitted by the project management office and further submits to higher financial authorities for approval.</li> </ul>   |

| Table 1: Implementation Roles and Responsibilities                       |
|--|
| The implementation roles and responsibilities are summarized in Table 1. |

2.

Baise Municipal Management Bureau, Baise Development and Reform Commission, Baise Finance Bureau, Baise Housing and Urban-Rural Construction Committee, Baise Environmental Protection Bureau, Baise Land Use Resources Bureau, Baise Hydropower Bureau, Baise National Assets Committee, Baise Communication Bureau, Baise Poverty Reduction Office, Human Resources and Social Security Bureau, Baise Civil Affair Bureau, Baise Foreign Affair Office, Baise Women's Union, Baise Land Reserve Center, Baise Development and Investment Group, Baise Non-state Owned Economic Office, Baise Youjiang District Government, Baise University, and Education Bureau.

| Project Stakeholders  | Management Roles and Responsibilities  |
|---|--|
| Project Management Office<br>(under the Baise Development and Reform<br>Commission) | <ul> <li>(i) Directing project preparation and implementation activities.</li> <li>(ii) Developing the annual work program and budget.</li> <li>(iii) Coordinating financial management of the implementing agency and consolidating project accounts and financial statements.</li> <li>(iv) Submitting withdrawal applications to the Baise Finance Bureau.</li> <li>(v) Establishing baseline data to monitor project impacts, including regular monitoring of physical, environmental and financial progress.</li> <li>(vi) Submitting reports to ADB, BMG, and relevant government departments of Baise Municipality and Guangxi Province in accordance with the approved reporting plan.</li> <li>(vii) Supervising and reporting to ADB on EMP and SGAP implementation and compliance.</li> <li>(viii) Setting up and coordinating safeguard GRM.</li> <li>(ix) Liaising with ADB and other agencies.</li> <li>(x) Coordinating with the implementing agency for the consulting services and training activities.</li> </ul>  |
| Implementing Agency   | For civil works:   |
| Baise University  | <ul> <li>(i) Contracting of design institute, CSC, and required monitoring institutes (environment, soil erosion) under guidance of PMO.</li> <li>(ii) Contracting procurement agent, coordinate preparation of bidding documents and procurement activities under guidance of PMO.</li> <li>(iii) Undertaking detailed procurement work for all works contracts under guidance of the PMO.</li> <li>(iv) Liaison with Baise Finance Bureau and other agencies as needed regarding the timely provision of counterpart funding</li> <li>(v) Coordinating and providing overall project implementation support involving contract and financial management.</li> <li>(vi) Progress monitoring and reporting to PMO.</li> <li>(vii) Coordinating EMP implementation on site, including conducting environmental inspections and regular monitoring; preparing quarterly environmental inspection and monitoring reports.</li> <li>(ix) Coordinating and reporting on SGAP implementation and ethnic minority actions including regular monitoring.</li> <li>(x) Coordinating the development of a Green Campus Sustainability Center (under the Baise University's Comprehensive Affairs Department).</li> </ul> |
|   | <ul> <li>For Multilevel TVET capacity building and innovation:</li> <li>(i) Implementing of the TVET capacity building activities involving the multilevel TVET strategic development; curriculum</li> </ul>   |
|   | <ul> <li>development; teacher training and pedagogy reform; and staff development.</li> <li>(ii) Implementing of the TVET innovation activities involving the school-industry partnerships; regional cooperation and specific</li> </ul>   |
|   | researches.<br>(iii) Providing counterpart staff for implementing the TVET<br>strengthening activities.  |
|   | <ul> <li>(iv) Establishing and maintaining project monitoring systems and<br/>reporting to PMO.</li> </ul>   |
|   | <ul> <li>(v) Participation in periodic review of TVET improvement<br/>strategies and in project impact evaluation.</li> <li>(vi) Participation in the procurement activities, such as technical<br/>specification, requirements and bidding evaluation, or in<br/>procurement relating to TVET attempt having activities</li> </ul>  |
|   | <ul> <li>(vii) Coordinating and providing overall project implementation<br/>management support involving loan implementation technical<br/>assistance and training and project monitoring and evaluation.</li> </ul>  |

| Project Stakeholders   | Management Roles and Responsibilities   |
|------------------------|---|
| Asian Development Bank | <ul> <li>(i) Overall project administration.</li> <li>(ii) Orientations to the executing agency and implementing agency.</li> <li>(iii) Review of draft bidding documents and approval of bid evaluation reports.</li> <li>(iv) Disbursement of ADB loan proceeds.</li> </ul> |

ADB = Asian Development Bank, CSC = construction supervision company, EMP = environmental management plan, GRM = grievance redress mechanism, PMO = project management office, TVET = technical vocational education and training.

#### B. Key Persons Involved in Implementation

| Executing Agency<br>Baise Municipal Government  | Mr. Bei Liu<br>Vice Director, Baise Development and Reform Commission<br>Telephone No.: 86-0776-2851333<br>Email address: gxbslb007@163.com<br>Office Address: Donghe Er Road, Youjiang District, Baise, Guangxi,<br>533000 |
|---|---|
| <b>Asian Development Bank</b><br>East Asia Regional Department<br>Urban and Social Sectors Division | Staff Name: Diwesh N. Sharan<br>Position: Director<br>Telephone No.: +63 2 632 6730<br>Email Address: dsharan@adb.org<br>Staff Name: Wendy Walker<br>Position: Principal Social Development Specialist                      |
|   | Fax No.: +632-636 2407<br>Email address: wwalker@adb.org  |

#### C. Project Organization Structure



#### IV. COSTS AND FINANCING

1. This section describes the project costs, categories, and components to be financed by ADB and the government. Loan proceeds will be disbursed according to ADB's *Loan Disbursement Handbook* (2012, as amended from time to time), and subject to the provisions of the Loan Agreement.

#### A. Summary Cost Estimates and Financing Plan

2. The project investment cost is estimated at \$103.54 million, including taxes and duties of \$5.38 million. The total cost includes physical and price contingencies, and interest during construction.

#### Table 1: Project Investment Plan

(\$ million)

| lte | m  | Amount |
|-----|--|--------|
| A.  | Base Cost <sup>a</sup>   |        |
|     | Improving TVET quality and capacity development                        | 3.65   |
|     | Chengbi campus construction and promoting environmental sustainability | 82.38  |
|     | Promoting TVET innovation and relevance                                | 0.77   |
|     | Project implementation management                                      | 0.58   |
|     | Subtotal (A)   | 87.38  |
| В.  | Contingencies <sup>b</sup>   | 10.09  |
| c.  | Financing Charges During Implementation <sup>c</sup>                   |        |
|     | ADB  | 3.20   |
|     | Domestic Bank  | 2.72   |
|     | ADB Commitment Charge  | 0.15   |
|     | Subtotal (C)   | 6.07   |
|     | Total (A+B+C) <sup>d</sup>   | 103.54 |

ADB = Asian Development Bank, TVET = technical and vocational education and training.

<sup>a</sup> In May 2014 prices.

<sup>b</sup> Physical contingency is computed at 8% of the base costs. Price contingency is computed based on the following price escalators published by ADB: 1.0% (2015) and 1.4% annually for 2016, 2017, 2018, and 2019 on foreign exchange costs and 3.0% annually throughout 2015 to 2019 on local currency costs.

<sup>c</sup> Includes interest during construction and commitment charges. Interest during construction has been computed at the 5-year USD fixed swap rate plus a spread of 0.5% and maturity premium of 0.1%.

<sup>d</sup> Includes taxes and duties of USD 5.38 million to be financed from government and ADB loan. ADB loan will cover taxes and duties on items financed by ADB. Financing of taxes and duties is proposed because the due diligence showed that (i) the amount of taxes and duties is within the reasonable threshold identified in the country partnership strategy, (ii) the amount does not represent an excessive share of the investment plan, (iii) taxes and duties apply only in respect to ADB-financed expenditures, and (iv) financing of the taxes and duties is relevant for the success of the project.

Source: Asian Development Bank estimates.

3. The Government of the PRC has requested a loan of \$50 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 6 years, <sup>1</sup>straight line repayment option, an annual interest rate determined in accordance with ADB's London Interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements. Based on this, the average loan maturity is 15.75 years and the maturity premium payable to ADB is 0.10% per annum. The loan will cover civil works, equipment, and TVET institutional strengthening and capacity development.

<sup>&</sup>lt;sup>1</sup> The reason for a grace period of 6 years is to better align with the loan from the domestic commercial bank, which has a maturity of 7 years, starting withdrawal by 2015 and straightline repayment period from 2016 to 2021.

#### Table 2: Financing Plan (\$ million)

| Source                     | Amount (\$ million) | Share of Total (%) |
|----------------------------|---------------------|--------------------|
| Asian Development Bank     | 50.00               | 48.29              |
| Baise Municipal Government | 40.64               | 39.25              |
| Domestic Bank              | 12.90               | 12.46              |
|                            | 103.54              | 100.00             |

Source: Consultant's estimates.

4. The borrower of the loan is the PRC. The loan proceeds will be made entirely available to the Guangxi Zhuang Autonomous Region Government (GZARG) under its relending arrangements, upon terms and conditions satisfactory to ADB. The GZARG will make the loan proceeds available to BMG as indicated in the project administration manual. The onlending terms and conditions of the loan proceeds will be the same as those of the ADB loan. The BMG will bear the foreign exchange and interest rate variation risks in proportion to the loan amount it receives.

#### B. Allocation and Withdrawal of Loan Proceeds

|        | Allocation and Withdrawal of Loan Proceeds                  |   |  |  |  |  |  |  |  |  |
|--------|---|---|--|--|--|--|--|--|--|--|
|        | Category  |   | ADB Financing Basis                          |  |  |  |  |  |  |  |
|        |   | Total Amount<br>Allocated for ADB<br>Financing \$ | Percentage and Basis for Withdrawal from the |  |  |  |  |  |  |  |
| Number | Item  | Category  | Loan Account                                 |  |  |  |  |  |  |  |
| 1      | Civil works   | 36,648,000  | 72.36% of total expenditure claimed          |  |  |  |  |  |  |  |
| 2      | Equipment   | 5,000,000   | 48.30% of total expenditure claimed          |  |  |  |  |  |  |  |
| 3      | Improving TVET quality<br>and capacity<br>development       | 3,647,000   | 100.0% of total expenditure claimed          |  |  |  |  |  |  |  |
| 4      | Promoting TVET<br>innovation and<br>relevance               | 773,000   | 100.0% of total expenditure claimed          |  |  |  |  |  |  |  |
| 5      | Project implementation<br>management consulting<br>services | 580,000   | 100.0% of total expenditure claimed          |  |  |  |  |  |  |  |
| 6      | Interest and commitment charges                             | 3,352,000   | 100.0% amount due                            |  |  |  |  |  |  |  |
|        | Total   | 50,000,000  |  |  |  |  |  |  |  |  |

TVET = technical and vocational education and training.

### C. Detailed Cost Estimates by Financier (\$ million)

|         |   |          |         | Baise M     | unicipal |           |        |           |                    |
|---------|---|----------|---------|-------------|----------|-----------|--------|-----------|--------------------|
|         |   | AD       | В       | Gover       | nment    | Domesti   | c Bank | TO        | TAL                |
| ltem    |   | Amount   | %       | Amount      | %        | Amount    | %      | Amount    | % of Total<br>Cost |
| A.      | Base Costs  | , and an | 70      | / life unit | 70       | , and and | 70     | , and and |                    |
| 1       | Civil works   | 36.65    | 72.36%  | 1.10        | 2.16%    | 12.90     | 25.48% | 50.65     | 48.91%             |
| 2       | Equipment   |          |         |             |          |           |        |           |                    |
|         | 2.1 Other equipment                                   | 5.00     | 48.30%  | 5.35        | 51.70%   | 0.00      | 0.00%  | 10.35     | 10.00%             |
|         | 2.2 Teaching equipment                                | 0.00     | 0.00%   | 10.32       | 100.00%  | 0.00      | 0.00%  | 10.32     | 9.97%              |
| 3       | Land acquisition, compensation, and resettlement      | 0.00     | 0.00%   | 0.00        | 0.00%    | 0.00      | 0.00%  | 0.00      | 0.00%              |
| 4       | Environmental protection                              | 0.00     | 0.00%   | 0.74        | 100.00%  | 0.00      | 0.00%  | 0.74      | 0.71%              |
| 5       | Water and soil protection                             | 0.00     | 0.00%   | 2.36        | 100.00%  | 0.00      | 0.00%  | 2.36      | 2.27%              |
| 6       | Project management                                    | 0.00     | 0.00%   | 6.05        | 100.00%  | 0.00      | 0.00%  | 6.05      | 5.85%              |
| 7       | Survey and design                                     | 0.00     | 0.00%   | 1.91        | 100.00%  | 0.00      | 0.00%  | 1.91      | 1.85%              |
| 8       | Improving TVET quality and capacity development       | 3.65     | 100.00% | 0.00        | 0.00%    | 0.00      | 0.00%  | 3.65      | 3.52%              |
| 9       | Promoting TVET innovation and relevance               | 0.77     | 100.00% | 0.00        | 0.00%    | 0.00      | 0.00%  | 0.77      | 0.75%              |
| 10      | Project implementation management consulting services | 0.58     | 100.00% | 0.00        | 0.00%    | 0.00      | 0.00%  | 0.58      | 0.56%              |
|         | Subtotal (A1)   | 46.65    | 53.39%  | 27.83       | 31.85%   | 12.90     | 14.77% | 87.38     | 84.39%             |
| в.      | Contingencies   |          |         |             |          |           |        |           |                    |
|         | Physical contingency                                  | 0.00     | 0.00%   | 6.59        | 100.00%  | 0.00      | 0.00%  | 6.59      | 6.36%              |
|         | Price contingency                                     | 0.00     | 0.00%   | 3.50        | 100.00%  | 0.00      | 0.00%  | 3.50      | 3.38%              |
| Total C | contingencies (B)                                     | 0.00     | 0.00%   | 10.09       | 100.00%  | 0.00      | 0.00%  | 10.09     | 9.75%              |
| С.      | Financial Charges During Implementation               |          |         |             |          |           |        |           |                    |
|         | Interest during implementation                        | 3.20     | 54.01%  | 2.72        | 45.99%   | 0.00      | 0.00%  | 5.92      | 5.72%              |
|         | ADB   | 3.20     | 100.00% | 0.00        | 0.00%    | 0.00      | 0.00%  | 3.20      | 3.09%              |
|         | Domestic bank   | 0.00     | 0.00%   | 2.72        | 100.00%  | 0.00      | 0.00%  | 2.72      | 2.63%              |
|         | ADB commitment charge                                 | 0.15     | 100.00% | 0.00        | 0.00%    | 0.00      | 0.00%  | 0.15      | 0.15%              |
| Financ  | ial Charges (C)                                       | 3.35     | 55.17%  | 2.72        | 44.83%   | 0.00      | 0.00%  | 6.07      | 5.87%              |
| TOTAL   | PROJECT COSTS (A+B+C)                                 | 50.00    | 48.29%  | 40.64       | 39.25%   | 12.90     | 12.46% | 103.54    | 100.00%            |

### D. Detailed Cost Estimates by Expenditure Category

| ltem    |   |                | (CNY million)<br>Foreign<br>Exchange | Total Cost |                 | (\$million)<br>Foreign<br>Exchange | Total Cost |
|---------|---|----------------|--------------------------------------|------------|-----------------|------------------------------------|------------|
| A.      | Investment Costs                                      | Local Guilency | Exchange                             |            | Local Ourfelloy | Exenange                           |            |
| 1       | Civil works   | 62.80          | 251.21                               | 314.01     | 10.13           | 40.52                              | 50.65      |
| 2       | Equipment   | 25.63          | 102.52                               | 128.16     | 4.13            | 16.54                              | 20.67      |
| 3       | Land acquisition, compensation, and resettlement      | 0.00           | 0.00                                 | 0.00       | 0.00            | 0.00                               | 0.00       |
| 4       | Environmental protection                              | 4.58           | 0.00                                 | 4.58       | 0.74            | 0.00                               | 0.74       |
| 5       | Water and soil protection                             | 14.60          | 0.00                                 | 14.60      | 2.36            | 0.00                               | 2.36       |
| 6       | Project management                                    | 37.53          | 0.00                                 | 37.53      | 6.05            | 0.00                               | 6.05       |
| 7       | Survey and design                                     | 11.87          | 0.00                                 | 11.87      | 1.91            | 0.00                               | 1.91       |
| 8       | Improving TVET quality and capacity development       | 0.00           | 22.61                                | 22.61      | 0.00            | 3.65                               | 3.65       |
| 9       | Promoting TVET innovation and relevance               | 0.00           | 4.79                                 | 4.79       | 0.00            | 0.77                               | 0.77       |
| 10      | Project implementation management consulting services | 0.00           | 3.60                                 | 3.60       | 0.00            | 0.58                               | 0.58       |
|         | Subtotal (A)  | 157.01         | 384.73                               | 541.75     | 25.32           | 62.05                              | 87.38      |
| В.      | Contingencies   |                |                                      |            |                 |                                    |            |
| 1       | Physical contingency                                  | 12.56          | 28.30                                | 40.86      | 2.03            | 4.56                               | 6.59       |
| 2       | Price contingency                                     | 10.71          | 11.00                                | 21.71      | 1.73            | 1.77                               | 3.50       |
|         | Subtotal (B)  | 23.27          | 39.29                                | 62.57      | 3.75            | 6.34                               | 10.09      |
| C.      | Financing Charges During Implementation               |                |                                      |            |                 |                                    |            |
| 1       | Interest during implementation                        | 19.83          | 16.88                                | 36.71      | 3.20            | 2.72                               | 5.92       |
|         | ADB   | 19.83          | 0.00                                 | 19.83      | 3.20            | 0.00                               | 3.20       |
|         | Domestic bank   | 0.00           | 16.88                                | 16.88      | 0.00            | 2.72                               | 2.72       |
| 2       | ADB commitment charge                                 | 0.95           | 0.00                                 | 0.95       | 0.15            | 0.00                               | 0.15       |
|         | Subtotal (C)  | 20.78          | 16.88                                | 37.66      | 3.35            | 2.72                               | 6.07       |
| Total F | Project Cost (A+B+C)                                  | 201.06         | 440.91                               | 641.98     | 32.43           | 71.11                              | 103.54     |

| E. | Detailed Cost Estimate by Components (\$ million) |
|----|---|
|----|---|

|     |   |            | Improving T<br>capacity o | VET quality and<br>development<br>% of Cost | Cheng<br>constr<br>promoting<br>susta | bi campus<br>ructed and<br>environmental<br>ainability<br>% of Cost | Promot<br>innovation a | ing TVET<br>and relevance<br>% of Cost |
|-----|---|------------|---------------------------|---|---------------------------------------|---|------------------------|--|
| No. | Item  | Total Cost | Amount                    | Category                                    | Amount                                | Category  | Amount                 | Category                               |
| Α.  | Investment Cost                                       |            |                           |   |                                       |   |                        |  |
| 1   | Civil works   | 50.65      |                           |   | 50.65                                 | 100.00%   |                        |  |
| 2   | Equipment   | 20.67      |                           |   | 20.67                                 | 100.00%   |                        |  |
| 3   | Land acquisition, compensation, and resettlement      | 0.00       |                           |   | 0.00                                  |   |                        |  |
| 4   | Environmental protection                              | 0.74       |                           |   | 0.74                                  | 100.00%   |                        |  |
| 5   | Water and soil protection                             | 2.36       |                           |   | 2.36                                  | 100.00%   |                        |  |
| 6   | Project management                                    | 6.05       |                           |   | 6.05                                  | 100.00%   |                        |  |
| 7   | Survey and design                                     | 1.91       |                           |   | 1.91                                  | 100.00%   |                        |  |
| 8   | Improving TVET quality and capacity development       | 3.65       | 3.65                      | 100.00%                                     |                                       |   |                        |  |
| 9   | Promoting TVET innovation and relevance               | 0.77       |                           |   |                                       |   | 0.77                   | 100.00%                                |
| 10  | Project implementation management consulting services | 0.58       |                           |   | 0.58                                  | 100.00%   |                        |  |
|     | Subtotal (A)  | 87.38      | 3.65                      | 4.17%                                       | 82.96                                 | 94.94%  | 0.77                   | 0.88%                                  |
| В.  | Contingencies   |            |                           |   |                                       |   |                        |  |
|     | 1. Physical   | 6.59       |                           |   | 6.59                                  |   |                        |  |
|     | 2. Price  | 3.50       | 0.10                      | 0.59%                                       | 3.38                                  | 96.64%  | 0.02                   | 0.59%                                  |
|     | Subtotal (B)  | 10.09      | 0.10                      | 0.20%                                       | 9.97                                  | 98.83%  | 0.02                   | 0.20%                                  |
| C.  | Financing Charges During Implementation               |            |                           |   |                                       |   |                        |  |
| 1.  | Interest during construction                          | 5.92       | 0.23                      | 0.83%                                       | 5.64                                  | 95.23%  | 0.05                   | 0.83%                                  |
|     | ADB   | 3.20       | 0.23                      | 1.55%                                       | 2.92                                  | 91.16%  | 0.05                   | 1.55%                                  |
|     | Domestic Bank   | 2.72       | 0.00                      | 0.00%                                       | 2.72                                  | 100.00%   | 0.00                   | 0.00%                                  |
| 2.  | ADB commitment charges                                | 0.15       | 0.01                      | 1.55%                                       | 0.14                                  | 91.16%  | 0.002                  | 1.55%                                  |
|     | Subtotal (C)  | 6.07       | 0.24                      | 0.85%                                       | 5.78                                  | 95.12%  | 0.05                   | 0.85%                                  |
|     | Total Project Cost (A+B+C)                            | 103.54     | 3.99                      | 0.82%                                       | 98.71                                 | 95.33%  | 0.85                   | 0.82%                                  |
|     | % of Total Project Cost                               | 100.00%    | 3.85%                     |   | 95.33%                                |   | 0.82%                  |  |

| F. | Detailed Cost Estimate by Year (\$ million) |
|----|---|
|----|---|

| Item  |   | 2015  | 2016  | 2017  | 2018  | 2019 | Total  |
|-------|---|-------|-------|-------|-------|------|--------|
| Α.    | Base Costs  |       |       |       |       |      |        |
|       | Investment Costs                                      |       |       |       |       |      |        |
| 1     | Civil works   | 10.13 | 15.19 | 15.19 | 7.60  | 2.53 | 50.65  |
| 2     | Equipment   | 4.13  | 6.20  | 6.20  | 3.10  | 1.03 | 20.67  |
| 3     | Land acquisition, compensation, and resettlement      | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00   |
| 4     | Environmental protection                              | 0.15  | 0.22  | 0.22  | 0.11  | 0.04 | 0.74   |
| 5     | Water and soil protection                             | 0.47  | 0.71  | 0.71  | 0.35  | 0.12 | 2.36   |
| 6     | Project management                                    | 1.21  | 1.82  | 1.82  | 0.91  | 0.30 | 6.05   |
| 7     | Survey and design                                     | 0.38  | 0.57  | 0.57  | 0.29  | 0.10 | 1.91   |
| 8     | Improving TVET quality and capacity development       | 0.73  | 1.09  | 1.09  | 0.55  | 0.18 | 3.65   |
| 9     | Promoting TVET innovation and relevance               | 0.15  | 0.23  | 0.23  | 0.12  | 0.04 | 0.77   |
| 10    | Project implementation management consulting services | 0.12  | 0.17  | 0.17  | 0.09  | 0.03 | 0.58   |
|       | Subtotal (A)  | 17.48 | 26.21 | 26.21 | 13.11 | 4.37 | 87.38  |
| В.    | Contingencies   |       |       |       |       |      |        |
|       | Physical contingency                                  | 1.32  | 1.98  | 1.98  | 0.99  | 0.33 | 6.59   |
|       | Price contingency                                     | 0.15  | 0.71  | 1.34  | 0.90  | 0.40 | 3.50   |
| Total | Contingencies (B)                                     | 1.47  | 2.69  | 3.31  | 1.89  | 0.73 | 10.09  |
| C.    | Financial Charges During Implementation               |       |       |       |       |      |        |
|       | Interest during implementation                        | 0.53  | 1.17  | 1.35  | 1.45  | 1.42 | 5.92   |
|       | ADB   | 0.11  | 0.38  | 0.70  | 0.95  | 1.06 | 3.20   |
|       | Domestic bank   | 0.42  | 0.79  | 0.65  | 0.50  | 0.36 | 2.72   |
|       | ADB commitment charge                                 | 0.07  | 0.05  | 0.03  | 0.01  | 0.00 | 0.15   |
| Finan | cial Charges (C)                                      | 0.60  | 1.21  | 1.38  | 1.46  | 1.42 | 6.07   |
| ΤΟΤΑ  | L PROJECT COSTS (A+B+C)                               | 19.54 | 30.12 | 30.90 | 16.46 | 6.52 | 103.54 |



#### G. Contract and Disbursement S-curve

#### H. Fund Flow Diagram



ADB repayment

- Counterpart funding and payments
- \_.\_.. Payment claims and withdrawal applications

#### V. FINANCIAL MANAGEMENT

#### A. Financial Management Assessment

1. A financial management assessment (FMA) was carried out using Asian Development Bank's (ADB) financial management assessment questionnaire. The financial management assessment is to determine whether or not the financial management arrangements of Baise Municipal Government (BMG) and Baise University as the implementing agency and project implementing unit (PIU), respectively, are capable and adequate for recording all transactions and balances, supporting the preparation of regular and reliable financial statements, safeguarding the assets of the company, and is subject to audit. The guidelines describe the approach prescribed by ADB in undertaking a financial management assessment, which involves the following steps:

- (i) use a standard questionnaire to assess the financial management of the implementing agency;
- (ii) based on the results of the questionnaire, identify issues for future review; and
- (iii) based on the external audit reports and financial sheets provided, identify potential problems and offer recommendations based on the findings.

2. This assessment was prepared during the technical assistance preparation in May 2014. The FMA was conducted in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects (2005) and the publication Financial Due Diligence a Methodology Note (2009). The FMA considered the capacity of the BMG and Baise University, including funds flow arrangements, staffing, accounting and financing reporting system, internal and external auditing arrangements, and financial information systems. Issues or risks associated with the implementing agency's financial management systems were identified, and appropriate risk mitigation measures were suggested to facilitate more effective project design and implementation.

3. The assessment concluded that while BMG has general experience in managing foreign-financed projects including ADB projects, but Baise University had no such experience, thus significant training and support will be required on ADB policies and procedures, including disbursement and project management. The assessment indicated that (i) there are established financial management policies in the PRC, which are basically followed by Baise University; and (ii) Baise University has good financial management capability and is experienced in managing locally-funded projects. The Guangxi Provincial Finance Bureau, which will operate and administer the imprest account have experience administering foreign-financed project including ADB-financed projects.

4. The FMA recommended capacity development measures to ensure that the implementing agency is able to meet the project's financial management requirements. It was proposed that the executing and implementing agencies would strengthen their financial management capability to manage the project, including (i) undertaking training, particularly on ADB policy and procedural requirements, (ii) appoint devoted staff as to manage project accounts, and (iii) seeking external financial management assistance as needed. The actions proposed to be undertaken by the PMO and the implementing agency is listed below in the risk mitigation table.

| Risk Description               | Risk<br>Assessment | Mit | igation | Meas | ures or Ris<br>Plan | sk Manag | ement   |
|--------------------------------|--------------------|-----|---------|------|---------------------|----------|---------|
| 1. Public Financial Management |                    |     |         |      |                     |          |         |
| A. Inherent Risks              |                    |     |         |      |                     |          |         |
| 1.1. Country-specific risks    |                    | (i) | There   | are  | sufficient          | resident | skills, |

Table 1: Risk Assessment and Risk Management Plan

| Risk Description   | Risk<br>Assessment | Mitigation Measures or Risk Management<br>Plan   |
|--|--------------------|--|
| Inadequate financial management,<br>management, and skills capacity.   | N                  | <ul> <li>expertise, and experience in most areas for timely and successful implementation. In addition, there is a high level coordinating body in the government to systematically and critically assess directions and outcomes of the project.</li> <li>(ii) Training will be given to the PMO and local financial staff to familiarize them with ADB.</li> </ul>   |
| 1.2. Entity–specific risks<br>Inadequate understanding of roles<br>of executing agency, implementing<br>agency, and other agencies.  | N                  | <ul> <li>(i) A clear organizational structure of the executing agency and/or implementing agencies is already established in relation to the project, and separation of roles and responsibilities between parties are clear.</li> <li>(ii) Work plans of core activities for the executing agency and/or implementing agency personnel are well developed.</li> </ul>   |
| <ul> <li>1.3. Project-specific risks <ul> <li>(i) Implementing agencies lack experience with ADB projects.</li> <li>(ii) Some capacity building components will be partly managed by individual project TVET schools.</li> </ul> </li> </ul> | M                  | <ul> <li>(i) Consulting support and training to be provided, including in the following areas: <ul> <li>a. ADB disbursement procedures, and</li> <li>b. project accounting requirements.</li> </ul> </li> <li>(ii) Detailed procedural guidance to be put in place in advance of loan effectiveness.</li> <li>(iii) PMO will oversee local project activities by requiring implementing agency plans and cost estimates to be approved by them.</li> </ul> |
| Overall Inherent Risks   | Ν                  |  |
| B. Control Risks           1.4. Implementing entity's financial management policies and procedures for the project are inadequate.   | М                  | Written financial procedures will be developed for the project and reviewed by suitably experienced GZAR officials.  |
| 1.5. Funds flow<br>Weak adherence to ADB guidelines<br>as concerns to disbursement and<br>withdrawal of project funds by the<br>executing and implementing<br>agencies.  | Ν                  | <ul> <li>(i) Executing agency to liaise regularly with<br/>ADB to ensure that ADB guidelines are<br/>followed.</li> <li>(ii) Interagency coordination at all levels to<br/>discuss the loan disbursement<br/>performance.</li> <li>(iii) Separate accounts to be maintained for<br/>all project components financed by ADB<br/>and the government.</li> </ul>  |
| <ul> <li>1.6. Staffing <ul> <li>(i) High staff turnover and inadequate financial management skills.</li> <li>(ii) Implementing agency accounting staff lacks adequate understanding of ADB requirements.</li> </ul> </li> </ul>              | М                  | <ul> <li>(i) Provide thorough training on ADB's disbursement procedures and project accounting requirements.</li> <li>(ii) Oversight of disbursement by experienced financial staff at executing agency and GZAR level.</li> <li>(iii) Guidance and support from the management support consultant.</li> </ul>   |
| <ul> <li>1.7. Accounting Policies and<br/>Procedures</li> <li>Account and bank reconciliations<br/>are not performed in a timely<br/>manner</li> </ul>   | N                  | Qualified and trained staff will undertake<br>account and bank reconciliations on a<br>periodic basis. Minor weaknesses identified<br>in the FMA will be addressed prior to the<br>project commencing.   |
| 1.8. Internal audit<br>Inadequate capacity in the Internal<br>Audit department   | М                  | All implementing agencies' financial<br>activities are routinely subject to internal<br>audit coverage but there is scope to<br>enhance capacity by modernizing auditing   |

| Risk Description   | Risk<br>Assessment | Mitigation Measures or Risk Management<br>Plan  |
|--|--------------------|---|
|  |                    | methods.  |
| 1.9. External audit<br>External auditors do not perform<br>their functions adequately                  | Ν                  | Independent external auditors acceptable to<br>ADB will be appointed by the executing<br>agency to audit project accounts and<br>compliance with financial covenants on an<br>annual basis  |
| 1.10 Reporting and monitoring<br>Regular financial reports suitable<br>for user needs are not prepared | Μ                  | <ul> <li>(i) The executing agency will make comprehensive progress reports (including financial) to ADB semiannually.</li> <li>(ii) Consultancy support to advise improvements needed to financial management reporting.</li> </ul> |
| Overall Control Risk Assessment  | Μ                  |   |

 Overall Control Risk Assessment
 M

 ADB = Asian Development Bank, BFD = Baise Finance Department, BMG = Baise Municipal Government,

 FMA = financial management assessment, GZAR = Guangxi Zhuang Autonomous Region, H = high, M =

 moderate, N = negligible or low, PAM = project administration manual, PIU = project implementation unit, PMO

 = project management office, PRC = People's Republic of China, S = substantial, TVET = technical and vocational education and training.

Source: Asian Development Bank estimates.

#### B. Disbursement

5. The Loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time),<sup>1</sup> and detailed arrangements agreed upon between the government and ADB.

6. Pursuant to ADB's Safeguard Policy Statement (2009),<sup>2</sup> ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth in Appendix 6 of the Safeguard Policy Statement. All financial institutions will ensure that their investments are in compliance with applicable national laws and regulations and will apply the prohibited investment activities list (Appendix 6) to subprojects financed by ADB.

7. Direct payment procedure will generally be used for large civil works and consulting service contracts. Reimbursement procedures will be also used as appropriate when the government initially funds ADB eligible expenditures from its own resources. Statement-of-expenditure (SOE) procedures will be used.

8. An imprest account will be established promptly after loan effectiveness at a commercial bank acceptable to ADB and maintained and administered by GZAR Finance Department. The maximum ceiling of the imprest account will be 10% of the loan amount.<sup>3</sup> The request for initial and additional advance to the imprest account should be accompanied by an estimate of expenditure sheet setting out the estimated expenditures to be financed from the imprest account for the next 6 months of project implementation, and submission of evidence satisfactory to ADB that the imprest account has been duly opened.<sup>4</sup> For every liquidation and replenishment request of the imprest account, the PMO will furnish to ADB (i) a Statement of Account (bank statement) where the imprest account is maintained and (ii) the imprest account reconciliation statement reconciling the above mentioned bank statement against the executing agency's records.<sup>5</sup>

<sup>&</sup>lt;sup>1</sup> Available at: http://www.adb.org/Documents/Handbooks/Loan<u>Disbursement/loan-disbursement-final.pdf</u>

<sup>&</sup>lt;sup>2</sup> Available at: http://www.adb.org/Documents/Policies/Safequards/Safeauard-Policv-Statement-June2009.pdf

<sup>&</sup>lt;sup>3</sup> Bank charges may be financed from the ADB loan.

<sup>&</sup>lt;sup>4</sup> Estimate of Expenditure Sheet is available in Appendix 29 of the *Loan Disbursement Handbook*.

<sup>&</sup>lt;sup>5</sup> Follow the format provided in Appendix 30 of the *Loan Disbursement Handbook.* 

9. To expedite flow of funds and simplify the documentation process, the ADB SOE procedure will be used for liquidation and replenishment of the imprest account, and for reimbursement of eligible expenditures not exceeding \$100,000 per individual payment. The payments in excess of the SOE ceiling will be reimbursed, liquidated, or replenished based on fully supporting documentation. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.<sup>6</sup>

10. Before the submission of the first withdrawal application, BMG—through the PMO, should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is \$100,000, unless otherwise approved by ADB. The PMO is to consolidate claims to meet this limit for reimbursement and imprest account claims. Withdrawal applications and supporting documents will demonstrate, among other things that the goods and/or services were produced in or from ADB members, and are eligible for ADB financing.

11. No training activities under the TVET Quality Improved and Capacity Developed output shall be conducted until ADB shall have received and approved the Training Implementation Plan. No activities under the enterprise education facility shall be conducted until the guidelines for selection have been approved by ADB.

#### C. Accounting

12. The PMO will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project. The PMO will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

#### D. Auditing and Public Disclosure

13. The PMO will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing and with the government's audit regulations, by an independent auditor acceptable to ADB. The audited project financial statements will be submitted in the English language to ADB within 6 months of the end of the fiscal year by PMO.

14. The annual audit report will include an audit management letter and audit opinions, which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the SOE procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time) and the project documents.

<sup>&</sup>lt;sup>6</sup> Checklist for SOE procedures and formats are available at: http://www.adb.org/documents/handbooks/loan <u>disbursement/chap-09.pdf</u> http://www.adb.org/documents/handbooks/loan\_<u>disbursement/SQE-Contracts-100-</u> <u>Below.xls</u> http://www.adb.org/documents/handbooks/loan\_<u>disbursement/SQE-Contracts-Over-IOO.xls</u> http://www.adb.org/documents/handbooks/loan\_<u>disbursement/SOE-Qperating-Costs.xls</u> http://www.adb.org/documents/handbooks/loan\_<u>disbursement/SOE-Free-Format.xls</u>.

15. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

16. ADB has relevant policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.<sup>7</sup> ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the recipient, or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

17. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).<sup>8</sup> After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The audit management Letter will not be disclosed.

<sup>&</sup>lt;sup>7</sup> ADB policy on delayed submission of audited project financial statements:

<sup>(</sup>i) When audited project financial statements are <u>not received by the due date</u>, ADB will write to the executing agency advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement, such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.

<sup>(</sup>ii) When audited project financial statements <u>have not been received within 6 months after the due date</u>, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (a) inform the executing agency of ADB's actions; and (b) advise that the loan may be suspended if the audit documents are not received within the next 6 months.

<sup>(</sup>iii) When audited project financial statements <u>have not been received within 12 months after the due date</u>, ADB may suspend the loan.

<sup>&</sup>lt;sup>3</sup> Available from <u>http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications</u>

#### VI. PROCUREMENT AND CONSULTING PACKAGES

#### A. Advance Contracting and Retroactive Financing

1. All advance contracting and retroactive financing will be undertaken in conformity with ADB's Procurement Guidelines (2013, as amended from time to time)<sup>1</sup> and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).<sup>2</sup> The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. It was explained to the borrower, the executing agency and the implementing agencies and the project implementing unit (PIU) that (i) advance contracting includes the advertisement, bidding documents, (not prequalification), evaluation of bids and up to the recommendation of contracts award—and that all steps will require ADB's no objection; (ii) approval of advance contracting and retroactive financing does not commit ADB to finance the project; and (iii) where advance contracting is approved, ADB's approval must be sought for the draft prequalification and bidding documents before they are issued.

2. To expedite project implementation, the government requested ADB to approve advance contracting, which includes the recruitment of consultants and procurement of civil works; and the request for retroactive financing of eligible expenditures for consulting services and civil works.

3. **Advance contracting**. Advance contracting will include (i) prequalification of contractors, tendering, and bid evaluation for civil works contract packages; (ii) awarding of contracts; and (iii) recruitment of consultants. The advance contracting includes civil work contract packages and consulting service contracts. The issuance of invitations to bid, and the draft prequalification and bidding documents under advance procurement action will be subject to ADB approval.

4. **Retroactive financing**. The government was informed that as a general rule, retroactive financing is permitted only if (i) it is specifically agreed by ADB and the Borrower; (ii) the goods, works, services, and consultants for which it is requested are procured in accordance with ADB's Procurement Guidelines (2013, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time); (iii) the amount to be retroactively financed does not exceed 20% of the loan amount; and (iv) the expenditures must have been incurred before effectiveness of the relevant loan but, generally, no earlier than 12 months before signing of the Loan Agreement. In either instance, detailed assessments (due diligence) on each retroactive financing proposal must demonstrate that (a) the expenditures incurred are genuine, reasonable, and material to getting the project off the ground; and (b) they were incurred for proper reasons, in a transparent manner over a reasonable period of time. The government has been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

#### B. Procurement of Goods, Works, and Consulting Services

5. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2013, as amended from time to time). International competitive bidding (ICB) will be used for civil works contracts estimated to cost \$10 million and above. National competitive bidding (NCB) will be used for civil works contracts estimated to cost over \$100,000 equivalent up to \$10 million. For goods and equipment, ICB will be used for values exceeding \$1 million, while NCB will be used for goods from over \$100,000 to below \$1 million equivalent. For NCB, the first draft English language of the procurement documents (prequalification, bidding documents, and draft contract) should be submitted for

<sup>&</sup>lt;sup>1</sup> Available at: <u>http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf</u>

<sup>&</sup>lt;sup>2</sup> Available at: <u>http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf</u>

ADB approval regardless of the estimated contract amount. Subsequent procurements are subject to post review. All ICB contracts are subject to prior review. Prior review and approval of ADB of the procurement documents (prequalification, bidding, and contract) is required.

6. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is listed below:

#### C. Procurement Plan

| Table 1: Basic Data                                     |   |  |  |
|---|---|--|--|
| Project Name: Guangxi Baise Vocational Education Develo | pment Project                               |  |  |
| Project Number: 47009                                   | Approval Number:                            |  |  |
| Country: People's Republic of China                     | Executing Agency: Guangxi Baise Government  |  |  |
| Loan Amount: \$50.0 million                             |   |  |  |
| ADB Financing: \$50 million                             |   |  |  |
| Non-ADB Financing:                                      |   |  |  |
| Date of First Procurement Plan: (loan approval date)    | Date of this Procurement Plan: 30 June 2014 |  |  |
|   |   |  |  |

#### 1. Process Thresholds, Review and 18-Month Procurement Plan

#### a. Procurement and Consulting Methods and Thresholds

7. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

#### **Table 2: Procurement of Goods and Works**

| Method   | Threshold                         |  |
|--|-----------------------------------|--|
| ICB for works  | \$10 million or more              |  |
| ICB for goods  | \$1 million or more               |  |
| NCB for works  | Beneath that stated for ICB Works |  |
| NCB for goods  | Beneath that stated for ICB Goods |  |
| Shopping for works   | Below \$100,000                   |  |
| Shopping for goods   | Below \$100,000                   |  |
| ICB = international competitive bidding, NCB = national competitive bidding. |                                   |  |

#### Table 3: Consulting Services

| Method                             | Comments                                  |
|------------------------------------|---|
| Quality- and cost-based selection  | Quality and cost ratio = 90:10 / 80:20 as |
| Consultant qualification selection | noted                                     |
| Individual consultant selection    |   |

#### b. Goods and Works Contracts Estimated to Cost \$1 Million or More

8. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

| Package<br>No. | General Description  | Estimated Value | Procurement Method                                     | Review<br>(Prior /Post) | Bidding<br>Procedure | Advertisement<br>(Quarter<br>/Year) | Comments |
|----------------|--|-----------------|--|-------------------------|----------------------|-------------------------------------|----------|
| Civil Worl     | k i  |                 |  |                         |                      |                                     |          |
| C01            | Site utilities and site development  | \$5,127,885     | NCB  | Post                    | 1S1E                 | Q1/2015                             | Note 1   |
| C02            | Student dormitory B1, B2, and B3   | \$8,672,499     | NCB (advance contracting and<br>retroactive financing) | Prior                   | 1S1E                 | Q4/2014                             |          |
| C03            | Business, political and law, art and education, administration, Chinese and foreign language | \$18,260,154    | ICB  | Prior                   | 1S1E                 | Q1/2015                             |          |
| C04            | Gym and sports facilities  | \$3,970,614     | NCB  | Post                    | 1S1E                 | Q2/2015                             |          |
| C05            | Library, chemistry and biology, physics electronic, and math                                 | \$17,388,718    | ICB  | Prior                   | 1S1E                 | Q3/2015                             |          |
| C06            | Slope protection   | \$3,577,716     | NCB  | Post                    | 1S1E                 | Q1/2015                             |          |
| Equipmer       | nt Supply and Installation   |                 |  |                         |                      |                                     |          |
| E01            | Photovoltaic power system  | \$4,770,968     | ICB  | Prior                   | 1S1E                 | Q1/2016                             |          |
| E02            | Heat pump systems at library and   | \$2,324,048     | ICB  | Prior                   | 1S1E                 | Q1/2016                             |          |

#### Table 4: Goods and Works Contracts (\$1 Million or More)

administration building 1S1E = 1 stage, 1 envelope, ICB = international competitive bid,NCB = national competitive bidding. Notes: 1. Includes site septic tanks, soil erosion protection, and environmental protection cost.

#### c. Consulting Services Contracts Estimated to Cost \$100,000 or More

9. The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

| Package<br>No. | General<br>Description                                | Estimated<br>Value | Procurement<br>Method            | Review<br>(Prior/<br>Post) | Advertise<br>-ment<br>(Quarter/<br>Year) | Type of<br>Proposal | Comments |
|----------------|---|--------------------|----------------------------------|----------------------------|--|---------------------|----------|
| CS1            | TVET capacity<br>development<br>and workshops         | \$3,420,000        | QCBS                             | Prior                      | Q1/2015                                  | Full                | 90:10    |
| CS2            | Implementation<br>management<br>support<br>(output 4) | \$550,000          | QCBS<br>(advance<br>contracting) | Prior                      | Q2/2015                                  | Simplified          | 80:20    |
| CS3            | Èmployment<br>information<br>system<br>development    | \$150,000          | CQS                              | Prior                      | Q3/2015                                  | Simplified          |          |

#### **Table 5: Consulting Services Contracts**

.

CQS = consultants' qualifications selection, QCBS = quality- and cost-based selection, TVET = technical and vocational education and training.

#### d. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

10. The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

#### Table 6: Goods and Works Contracts (Smaller Value Contracts)

| Package<br>No. | General<br>Description                         | Estimated<br>Value | Procurement<br>Method | Review<br>(Prior/Post) | Bidding<br>Procedure | Advertise-<br>ment<br>(Quarter/Year) | Comments |
|----------------|--|--------------------|-----------------------|------------------------|----------------------|--------------------------------------|----------|
| GS1            | Production<br>of TVET<br>teaching<br>materials | \$450,000          | NCB                   | Post                   | 1S1E                 | Q2/2015                              | Note 1   |

1S1E = 1 step, 1 envelope, NCB = national competitive bidding, TVET = technical and vocational education and training.

#### Table 7: Consulting Services (Smaller Value Contracts)

| Package | General                            | Estimated | Procurement   | Review       | Advertise-<br>ment | Type of  |          |
|---------|------------------------------------|-----------|---|--------------|--------------------|----------|----------|
| No.     | Description                        | Value     | Method  | (Prior/Post) | (Quarter/Year)     | Proposal | Comments |
| CS4     | Start-up<br>procurement<br>support | \$30,000  | ICS<br>(advance<br>contracting /<br>retroactive<br>financing) | Prior        | Q4/2014            | ICS      |          |
| CS5     | Research on<br>emerging<br>sectors | \$100,000 | CQS   | Prior        | Q4/2015            | CQS      |          |

CQS = consultant quality based selection, ICS = individual consultant selection.

## e. Shopping for Goods Contracts Estimated to Cost Less than \$100,000 (Small Value Contracts)

| Package<br>No. | General<br>Description   | Estimated<br>Value | Number<br>of<br>Contracts | Procurement<br>Method | Review<br>(Prior/<br>Post) | Advertise-<br>ment<br>(Quarter/<br>Year) | Comments |
|----------------|--|--------------------|---------------------------|-----------------------|----------------------------|--|----------|
| GS2            | School -<br>industry<br>partnership<br>and career<br>development | \$100,000          | 3                         | Shopping              | Prior                      | Varies                                   |          |

#### Table 8: Goods (Smaller Value Contracts)

11. The modalities for the delivery of services related to school training and education facility fund are estimated at \$2,097,000 will be finalized during implementation. It is anticipated that the services will be delivered in a number of smaller packages. The procurement arrangements for these activities will be determined according to the needs of project implementation.

#### 2. National Competitive Bidding

12. The Borrower's *Law of Tendering and Bidding of the People's Republic of China* promulgated by Order No. 21 of the President of the People's Republic of China on August 30, 1999, are subject to the following clarifications required for compliance with the Guidelines:

- (i) All invitations to prequalify or to bid shall be advertised in the national press, official gazette, or a free and open access website in the Borrower's country. Such advertisement shall be made in sufficient time for prospective bidders to obtain prequalification or bidding documents and prepare and submit their responses. In any event, a minimum preparation period of thirty (30) days shall be given. The preparation period shall count (a) from the date of advertisement or (b) when the documents are available for issue, whichever date is later. The advertisement and the prequalification and bidding documents shall specify the deadline for such submission.
- (ii) Qualification requirements of bidders and the method of evaluating the qualification of each bidder shall be specified in detail in the bidding documents, and in the prequalification documents if the bidding is preceded by a prequalification process.
- (iii) If bidding is preceded by a prequalification process, all bidders that meet the qualification criteria set out in the prequalification document shall be allowed to bid and there shall be no limit on the number of pre-qualified bidders.
- (iv) All bidders shall be required to provide a performance security in an amount sufficient to protect the Borrower/Project Executing Agency in case of breach of contract by the contractor, and the bidding documents shall specify the required form and amount of such performance security.
- (v) Bidders shall be allowed to submit bids by mail or by hand.
- (vi) All bids shall be opened in public; all bidders shall be afforded an opportunity to be present (either in person or through their representatives) at the time of bid opening, but bidders shall not be required to be present at the bid opening.
- (vii) All bid evaluation criteria shall be disclosed in the bidding documents and quantified in monetary terns or expressed in the form of pass/fail requirements.
- (viii) No bid may be rejected solely on the basis that the bid price falls outside any standard contract estimate, or margin or bracket of average bids established by the Borrower/project executing agency.

- (ix) Each contract shall be awarded to the lowest evaluated responsive bidder, that is, the bidder who meets the appropriate standards of capability and resources and whose bid has been determined (a) to be substantially responsive to the bidding documents, and (b) to offer the lowest evaluated cost. The winning bidder shall not be required, as a condition of award, to undertake responsibilities for work not stipulated in the bidding documents or otherwise to modify the bid as originally submitted.
- (x) Each contract financed with the proceeds of the loan shall provide that the suppliers and contractors shall permit ADB, at its request, to inspect their accounts and records relating to the performance of the contract and to have said accounts and records audited by auditors appointed by ADB.
- (xi) Government-owned enterprises in the Borrower's country may be permitted to bid if they can establish that they (a) are legally and financially autonomous, (b) operate under commercial law, and (c) are not a dependent agency of the Borrower/project executing agency.
- (xii) Re-bidding shall not be allowed solely because the number of bids is less than three.

#### 3. List of Awarded and Ongoing, and Completed Contracts

- 13. The following lists the awarded and on-going contracts, and completed contracts.
  - (i) Awarded and ongoing contracts. None.
  - (ii) **Completed contracts.** None

#### 4. Non-ADB Financing

14. The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

## Table 9: Goods, Works, and Consulting Services Financed by Non-Asian DevelopmentBank Sources

| General            | Estimated Value | Estimated Number of | Procurement        | Comments |
|--------------------|-----------------|---------------------|--------------------|----------|
| Description        | (Cumulative)    | Contracts           | Method             |          |
| Teaching Equipment | \$10,318,565    | 1                   | Domestic procedure |          |

#### D. Consulting Packages

15. All consultants will be recruited according to Asian Development Bank's (ADB) Guidelines on the Use of Consultants (2013, as amended from time to time).<sup>1</sup> The consultants will be engaged through quality- and cost-based selection (QCBS).<sup>2</sup> Detailed terms of references are included in Appendix 3 of the PAM.

16. There are three consulting services packages: (i) a consulting firm will be engaged using the QCBS method for the multilevel TVET (MLT) capacity building and innovation program (30 person-months international, 82 person-months national); (ii) a start-up consultant will be hired to help the executing and implementing agencies expedite the construction contract procurement and assist in project management (3 person-months national); and (iii) a consulting firm will be engaged using the QCBS method for project management and implementation support, including sustainable campus development and promotion (5 person-months international, 45 person-months national).

<sup>&</sup>lt;sup>1</sup> Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: http://www.adb.org/documents/handbooks/project-implementation.

<sup>&</sup>lt;sup>2</sup> Terms of reference guidelines available at <u>http://www.adb.org/Documents/Manuals/Consulting-Services-OperationsManual/CSOM.pdf?bcsi\_scan\_D4A612CF62FE9576=AORY9a8Nho2ezS9Xss/ligEAAAANNiAA&bc\_si\_scan\_filename=CSOM.pdf</u> (paras. 65–72).

#### 1. Package 1: Multilevel Technical and Vocational Education and Training Capacity Building and Innovation (quality- and cost-based selection, consulting firm: 30 person-months international, and 82 person-months national)

17. This package will support the development of MLT institutional, leadership, human resources, and employment information systems; improve the quality of TVET curriculum and teaching and promote staff development; and promote TVET innovation and relevance.

18. A consulting firm will be engaged by the QCBS method to provide an estimated total input of 30 person-month of international and 82 person-months of national consulting inputs. The consultants will work with Baise Municipal Government (BMG), BPMO, Baise University–the implementing agency, and other relevant agencies for the MLT capacity building and innovation program. This will include an appropriate mix of formal and informal training delivery including workshops, seminars, study tours and on-the-job training, to be provided directly by the consultants, under locally arranged training contracts, or through approved in-country or overseas study activities. Detailed activities will include, but not necessarily be limited to:

- (i) An integrated MLT system that provides curriculum integration through a sequence of learning outcomes that link the current SVS, vocational college, and undergraduate levels of TVET.
- (ii) Establishment of an employment information system to support students work placements through responsive programs and courses.
- (iii) The development of a communication and outreach strategy to promote understanding and support for the MLT system.
- (iv) A competency-based approach (CBA) to curriculum, instruction, and assessment that is applied to priority areas.
- (v) An improved quality assurance system that is based on industry standards in the design and delivery of relevant training.
- (vi) Upgrading of both pre-service teacher training and in-service professional development programs.
- (vii) Support for the development of leadership through Core Teachers and Managers training courses.
- (viii) A comprehensive workshop program for teachers and other stakeholders, focused on key TVET concepts (e.g. MLT system, CBA, and quality assurance) and their application to priority areas and instructional delivery.
- (ix) Support for domestic and/or international visits to provide exposure to and participation in TVET best practice examples.
- (x) Staff opportunities for active engagement in industry visits, assignments, and training attachments.
- (xi) Enhanced industry participation in the governance of TVET and the delivery of curriculum and assessment.
- (xii) Cooperative activities between Baise University, Education Bureau, and HRSSB to enhance and integrate migrant worker programs into TVET training.
- (xiii) An emphasis on entrepreneurship through curriculum and policy development and the design and implementation of an entrepreneurship incubation program.
- (xiv) Funding support for an entrepreneurship (enterprise) education facility (fund) to provide opportunities for teachers and students to develop small scale enterprise projects with industry links.
- (xv) Training for a small team to coordinate regional cooperation planning and development activities.
- (xvi) Research support for enhanced information and resources gathering for regional cooperation partnerships and ventures.

(xvii) Research that investigates and provides workable options for enterprise-TVET partnerships, emerging priority sectors and future course and qualifications needs.

#### 2. Package 2: Project Implementation Management Start-up Support (individual national procurement specialist, 3 person-months)

19. This package is intended to engage an individual national procurement specialist using advance contracting and retroactive financing, before the regular implementation consultants mobilized, to help the executing and implementing agency to expedite the construction contract procurement and assist in project management. The specialist will assist the executing and implementing agency on training on ADB procurement policies and procedures, assistance in bidding document preparation and review, procurement processing, bidding evaluation, coordination with ADB, tendering company, and other involved partners.

# 3. Package 3: Project Implementation Management Support (quality- and cost-based selection, consulting firm: 5 person-months for international consultants, 45 person-months for national consultants)

20. This package is intended to enable project output 2 to be delivered on time, within budget, in a sustainable manner, and in accordance with prescribed policies, standards and procedures. The package includes support for project management consulting services, capacity building and institutional strengthening, and financial management strengthening.

21. The consultancy services will involve international and national experts, with an international team leader and national deputy team leader. The consultants will assist BMG, BPMO, and implementing agency in (i) project management for implementing the project in according to ADB and People's Republic of China's (PRC) policies and procedures; (ii) construction management and construction supervision to ensure that the campus construction is completed in compliance with all contract drawings and contract documents: (iii) procurement and contract management in compliance of ADB and PRC procedures and requirements; (iv) implementation of measures defined by the project safeguard policy requirements including social development action plan (SDAP), gender action plan (GAP), etc.; (v) implementation of environment management plan (EMP) and coordinating monitoring and reporting according to ADB and PRC policy requirements; (vi) liaising and coordinating with ADB; (vii) establishing the project performance monitoring system (PPMS) and conduct data collection and reporting per ADB policy requirements; (viii) financial management and disbursement supports; (ix) campus sustainability planning and policy development; (x) technical design review, and recommendations on new technology applications that promote resource-efficiency and low-carbon development, campus safety, etc.; (x) preparing and submitting reports according to ADB project management requirements; and (xi) promoting the adoption of international standard practices for project management and monitoring systems.

22. An international consulting firm will be engaged in accordance with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). ADB will select and engage the consultants based on the quality of the proposal (80%) and the cost (20%) of the services to be provided (the QCBS method) using the full technical proposal procedure. The consultants will work with BMG, BPMO, implementing agency, and other relevant agencies to provide assistance and advice on the tasks outlined below.

23. The project management consultants will assist and support BMG, BPMO, implementing agency, and other relevant agencies at project start-up and during project implementation with:

- (i) advice and assistance to establish institutional frameworks, operating procedures, filing systems, and work plans to guide and facilitate project implementation;
- (ii) assistance to establish the PPMS in accordance with ADB requirements, including establishing baselines and mechanisms for data collection, analysis, and reporting;
- (iii) advice and training on ADB disbursement procedures and assistance to establish sound accounting, financial management, and reporting systems in accordance with ADB guidelines and procedures;
- (iv) assistance to develop reporting formats and establish mechanisms for preparing and submitting the reports specified in the loan and project agreements;
- (v) assistance to prepare and review bidding documents in cooperation with the tendering agent and in accordance with ADB's Procurement Guidelines (2013, as amended from time to time);
- (vi) assistance in contract management, including monitoring construction progress, quality assurance and control, reviewing and certifying contractors' claims for payment, and coordinating daily operations;
- (vii) technical review of engineering designs in accordance with design codes and standards;
- (viii) assistance to develop an effective construction supervision program, and to provide guidance and support for its implementation;
- (ix) construction inspection and supervision of key construction components;
- (x) advice and training on ADB's Safeguard Policy Statement (2009) and operational requirements including on resettlement, environment, poverty reduction, gender development, and ethnic minorities;
- (xi) assistance to review and finalize the EMP based on final design, and monitor the implementation of the EMP prepared for the project, assist the preparation of related reports to ADB, and prepare and submit to ADB annual environmental monitoring reports;
- (xii) training on implementing the measures specified in the EMP;
- (xiii) assisting the BPMO and implementing agency on implementation and monitoring of the SGAP activities;
- (xiv) trainings on the skills needed for construction supervision, project management, and implementation of social and environmental safeguards; and
- (xv) advice and training on ADB policy and procedural requirements to ensure full compliance.

#### E. Consultancy Inputs

24. The consulting service inputs are summarized below.

#### Table 10: Schedule of Consultancy Services (Tentative) (Person-months)

| Package and Expert  | International     | National       |
|---|-------------------|----------------|
| Package 1: Multilevel Technical and Vocational Education and Training | Capacity Building | and Innovation |
| Team leader/institutional specialist                                  | 10                | 0              |
| Deputy team leader/institutional specialist                           | 0                 | 16             |
| Curriculum development specialist (pre-education)                     | 3                 | 6              |
| Curriculum development specialist (engineering management)            | 0                 | 8              |
| Curriculum development specialist (aluminum processing)               | 4                 | 8              |
| Curriculum development specialist (design)                            | 4                 | 8              |
| Curriculum development specialist (agriculture)                       | 4                 | 8              |
| Curriculum development specialist (logistics)                         | 0                 | 4              |
| Curriculum development specialist (tourism)                           | 0                 | 4              |
| TVET enterprise education specialist                                  | 1                 | 4              |

| Package and Expert                                   | International | National |
|--|---------------|----------|
| TVET teacher training specialist                     | 4             | 8        |
| School-industry specialist                           | 0             | 6        |
| Regional cooperation specialist                      | 0             | 2        |
| Subto  | otal 30       | 82       |
| Package 2: Project Implementation Start-up Support   |               |          |
| Contract management and procurement specialist       | 0             | 3        |
| Subto  | otal 0        | 3        |
| Package 3: Project Implementation Management Support |               |          |
| Institutional and PPMS specialist/team leader        | 4             | 0        |
| Civil engineer/deputy team leader                    | 0             | 20       |
| Procurement specialist                               | 0             | 6        |
| Financial management experts                         | 1             | 4        |
| Social and gender development expert                 | 0             | 6        |
| Campus sustainability planning experts               | 0             | 4        |
| Environment experts                                  | 0             | 5        |
| Subto  | otal 5        | 45       |
| Grand To   | otal 35       | 130      |

PPMS = project performance management system, TVET = technical and vocational education and training. Note: Detailed TOR for all positions is included in Appendix 3 of the PAM.

#### F. Reporting and Deliverables

25. The consultants will assist BPMO and Baise University to prepare various reports for submission to ADB, including the following deliverables. Specific sections of the reports will be dedicated to each service provider.

26. **Inception report**. Within 2 months of the commencement of the consulting service, a brief inception report will be prepared. This inception report will confirm that the project is to be undertaken in accordance with the consultant's technical proposal. If the consultant intends to conduct the work in a different manner or to a different program not included in the technical proposal, this will be highlighted in the inception report. The inception report will include an updated overall work plan, if appropriate. Three English copies of the report will be provided. The number of Chinese language copies has yet to be determined.

27. **Progress reports**. The consultant will also prepare semiannual and annual report within 1 month of period-end, in a format acceptable to BPMO and ADB, progress reports including, semiannual and annual reports detailing both programmed and actual progress against the overall work plan, detailing issues and solutions to address them. Three English copies of the reports will be provided. The number of Chinese language copies has yet to be determined.

28. **Project completion reports**. In preparation for the midterm project review and at the conclusion of the consulting services, the consultant will submit a report, in a format acceptable to BPMO and ADB, on progress made, key outstanding issues, and future work. Three English copies of the report will be provided. The number of Chinese language copies has yet to be determined.

29. **Other reports and documents**. Assist BPMO to prepare other Chinese and English language reports and documents during project implementation, including:

- (i) implementing agency's financial management report,
  - (ii) PPMS framework report,
  - (iii) training program plan and training report,
  - (iv) bidding document review report, and
  - (v) consolidated social action monitoring and reporting schedule.
- 30. All reports will be prepared in both English and in Chinese.

| Report   | Timing  |
|--|---|
| Inception report   | Within 1 month  |
| Project performance monitoring system  | Within 6 months                                       |
| Quarterly reports, including environmental and<br>social monitoring information and appendixes on<br>progress of consultant's activities | Quarterly during the first 2 years, then semiannually |
| Completion report  | Draft 6 months before project completion              |

#### Table 11: List of Report Delivery

#### E. Facilities to be Provided as Part of the Capacity Building

31. The contract for providing the capacity building will include provisions for the Consultant to provide the following items, and this requirement is to be made clear in the request for proposals:

- (i) all staff and personnel costs, including international, national and local travel, accommodation, and subsistence;
- (ii) in province travel costs for visits to TVET institutions;
- (iii) office equipment (but not basic office furniture), computer equipment and related hardware (printers, etc.), and software necessary for the effective conduct of the consultancy, including an allowance for consumables;
- (iv) arrangements and financial provision for in country training programs to be reimbursed at cost;
- (v) the provision of secretarial support and an interpreter (where necessary); and
- (vi) the costs of all report and document preparation and printing

#### G. Other Requirements Expected of the Consulting Firm

32. The consulting firm should be experienced in implementing similar capacity building programs in the PRC. Prospective providers, in tendering for the capacity building work should be encouraged to make any comments on and suggestions for improvement to the proposed program in submitting their technical proposal. The financial implications, if any, of these suggestions should be clearly indicated in the financial proposal. These suggestions will then be dealt with at the negotiation stage of the procurement of the consultant.

33. In their technical proposals, the prospective consulting firms should be asked to demonstrate a clear understanding of the client's requirements and indicate interrelationships between the different tasks within the assignment. An indicative program of work and for the deployment of the various specialists should be provided.

34. The technical proposals should include a methodology and proposed assessment criteria under which the client can measure the performance in the conduct of the capacity building work. This should include an assessment of work quality as well as timeliness of output. In submitting such assessment criteria the providers should be required to confirm they accept their use in measuring their own performance.

#### H. Facilities to be Provided by the Client

- 35. BPMO as the client will provide, or make available to the consultant, the following:
  - (i) suitable rent–free, and heated and air conditioned office accommodation;
  - (ii) office furniture and document storage facilities;
  - (iii) free Internet access;
  - (iv) a telephone line with direct distance dialing (usage to be charge to the consultant);
  - (v) meeting rooms and training facilities necessary for the conduct of the services; and

assistance in the arrangement of work visas (where necessary).

#### VII. SAFEGUARDS

#### A. Environment

Environmental classification for the project. The project is classified as category 1. B for environment. The main anticipated environmental impacts and risks upon which the categorization was based included dust, noise, wastewater and solid waste arising from construction of 12 buildings and their auxiliary facilities in BU's new Chengbi campus.<sup>3</sup> Risks to occupational and community health and safety from construction activities were also considered potentially significant. In accordance with ADB's Safeguard Policy Statement (SPS, 2009),<sup>4</sup> an initial environmental examination (IEE) and an environmental management plan (EMP) for the project have been developed. The EMP, included as **Appendix 1**, defines (i) responsibilities and authorities for EMP implementation, (ii) summary of impacts and mitigation measures, (iii) environmental monitoring and inspection plan, (iv) institutional strengthening and training plan, (v) reporting requirements, (vi) public consultation plan, (vii) cost estimates, (viii) mechanism and, (ix) GRM for feedback and adjustment. The EMP will be reviewed and updated at the end of the detailed design in order to be consistent with the final detailed design. The EMP will also be included as separate annex in all bidding and contract documents.

2. **Anticipated impacts**. During construction, major anticipated impacts include noise, fugitive dust, solid wastes, and community and occupational health and safety risks related to the construction of 12 buildings on the new campus. Overall, construction-related impacts are localized, short term, and can be effectively mitigated through the application of good construction methods and housekeeping practices and implementation of construction phase community and occupational health and safety plans. A landslide risk assessment was conducted during feasibility study stage, which concludes that risk of landslides at the 8 identified points was relatively low as long as slope protection works are implemented as defined in the feasibility study report.

3. During operation, no major environmental impacts are anticipated. All buildings, with a total building area of 160,693 square meters, will be designed and constructed in accordance with relevant design standards and codes for the People's Republic of China (PRC) and Guangxi Zhuang Autonomous Region. Campus design incorporates slope stabilization requirements, fire truck routing, and emergency evacuation plans (including temporary shelter, emergency evacuation routes, and emergency exits), campus traffic, and parking plans promoting pedestrian and bicycle traffic. Incremental water supply, wastewater and solid waste generation resulting from the project and increased students and faculties will not overburden existing municipal services. The project's potential impacts on community and occupational health and safety during operation were analyzed and corresponding mitigation measures have been defined in the IEE and EMP. Environment due diligence confirmed that the project will have no impact on the Chengbi Lake drinking water source protection zone, located 4.1 kilometers upstream of the Chengbi Campus. Slope protection works have been included in the project design to adequately address the minor risk of landslides. A wastewater treatment plant with the capacity of 2,000 m<sup>3</sup>/a (about 40% of campus sewage) will be constructed in the campus. The effluent will meet Class I-A, and will be reused for campus landscaping after disinfection. Excess wastewater will be discharged to the municipal sewer that will connect the new campus to the central waste water treatment plant (to be completed by September 2014).

4. **Promoting campus sustainability and low-carbon development**. The outstanding environmental feature of the project is the development of a low-carbon, resource-efficient

<sup>&</sup>lt;sup>3</sup> The project will support construction of 12 buildings, including library, administration building, gymnasium, business school, politic and law school, Chinese and foreign language building, physics electronic and math building, chemistry and biology building, art and science education building, and three student dormitories.

<sup>&</sup>lt;sup>4</sup> ADB. 2009. Safeguard Policy Statement. Manila.

and environmentally sustainable campus. All buildings will be designed in compliance with green and energy-efficient building codes and specifications.<sup>5</sup> Renewable and highefficiency energy sources including solar energy (photovoltaic) and heat pumps will be applied to satisfy building energy requirements such as heating, air conditioning, and hot water supplies. A 3.47 megawatt solar photovoltaic power generation system will be installed in the campus, generating some 3.86 million kilowatt hour of electricity per year. Highefficiency heat pumps will be installed for air-conditioning (heating, cooling) of two buildings, and water heating for the student dormitories. The photovoltaic system will be able to cover 15% of the energy demand of the campus, reducing the use of conventional fossil fuels by approximately 1,500 tons of standard coal, and 3,850 tons of CO<sub>2</sub> emissions per year.<sup>6</sup> The two heat pump air conditioning systems will be installed on the library and administration building, which will bring 3.334 million kilowatt hour per annum (kWh/a) electricity saving, equivalent to 1,330 tons of standard coal and 3,320 tons of CO<sub>2</sub> emissions. The use of volatile organic compounds (VOC) emitting materials (including paints, coatings, adhesives, carpet and furniture's) will be avoided to ensure safe indoor air quality. The project will also support BU in defining a campus sustainability initiative, and establishing a sustainability center, to be coordinated by BU's Comprehensive Affair Department. The sustainability center will build on ongoing sustainability programs and initiatives of BU, and aim at ensuring sustainable environmental path for BU. The center will aim at greening campus practices, curriculum development, and community awareness, with a strong focus on low-carbon, energy- and resource-efficient campus management.

**Environmental management plan implementation responsibilities.** The project 5. management office (PMO) will have the overall responsibility for supervising the implementation of the EMP, coordinating the project level grievance redress mechanism (GRM) and reporting to ADB through the semi-annual project progress reporting and the annual environment monitoring reporting process. The PMO will assign one safeguard officer (PMO-SO) to supervise the effective implementation of the EMP. To ensure that the contractors comply with the EMP provisions, the PMO-SO will provide support to the procurement agent and the PIU (see below) to prepare and provide the following specification clauses for incorporation into the bidding documents: (i) a list of environmental management requirements to be budgeted by the bidders in their proposals; (ii) environmental clauses for contractual terms and conditions (as appended to the EMP); and (iii) major items in the EMP. Where works are being implemented using retroactive financing or advance contracting arrangements (i.e., the construction of campus dormitories B1, B2 and B3), then the BMG, via the PMO, needs to ensure the above requirements are adhered to from the outset.

6. Baise University as the implementing agency will establish a project implementing unit (PIU) that will assume day-to-day responsibility for supervising the contractors' performance and adherence to the EMP. The PIU will assign one qualified staff to (i) review and approve contractors' site-specific EMP; (ii) conduct site inspections following the site inspection checklist (as appended to the EMP); (iii) act as local entry point for environmental complaints under the project GRM; and (iv) submit inspection results to the contractors for information, and to Baise University and the PMO for verification and confirmation. The PIU will also coordinate, in collaboration with Baise University's comprehensive affair department and under the guidance of the national experts hired under the project capacity building component, the development of a campus sustainability strategy, including definition of a suitable governance structure (e.g. "Sustainability Center"), policy statement, main programs, and a clear roadmap.

<sup>&</sup>lt;sup>5</sup> Including, but not limited to: GB/T50378-2006 (Evaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50011-2010 (Building Seismic Design Code); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); and other applicable national design codes.

<sup>&</sup>lt;sup>6</sup> A kilowatt hour electricity generated by solar energy is equal to 0.4 kilogram standard coal saving and 0.997 kilogram of CO<sub>2</sub> emission reduction.

7. Civil works contractors will be responsible for implementing the mitigation measures during construction. In their bids, contractors will be required to respond to the environmental management requirements defined in the EMP. Each civil work contractor will be required to develop site-EMPs and will assign a person responsible for environment, health, and safety.

8. Public consultation and grievance redress mechanism. Two rounds of public consultation have been conducted in accordance with the PRC Guideline on Public Consultation in EIA (2006) and ADB's SPS requirements, through guestionnaire survey and public hearings with affected residents (mainly the students and faculties of Baise University and Baise Vocation School). A total of 160 people were consulted. The consultation process confirmed broad public support for the project, and absence of major concerns related to the construction and operation of project facilities. Concerns expressed, and actions requested, were reflected in project design, including (i) the need to promote renewable energy for the new campus; (ii) 30% of jobs generated by the project will be offered to the local population; (iii) contractors will be required to comply with the core labor standards to ensure the health and safety of employees; and (iv) a clause will be included in the tender documents for civil works on the inclusion of HIV/AIDS awareness training for construction workers. A GRM has been defined to deal with public complaints related to project activities, including the ethnic minority design features and actions, during project implementation and operation. The GRM will be coordinated by the PMO, whereas the PIU and contractors will act as local GRM access points.

#### B. Land Acquisition and Resettlement

9. Land acquisition and resettlement. The safeguard category for involuntary resettlement is C. As currently planned, the project activities will neither require land acquisition nor resettlement. Should this situation change then ADB must be advised immediately and theADB safeguards policy for involuntary resettlement as stipulated in the SPS must be adhered to in full as advised by ADB. All civil works under the project will take place on the existing Chengbi campus and no land acquisition or resettlement is necessary. During project preparation resettlement due diligence was performed in relation to land property, land use right and completed ground attachment compensation on the Chengbi campus. This due diligence revealed no outstanding issues.

#### C. Indigenous Peoples

10. The safeguard category for Indigenous Peoples is B. The poverty and social assessment found there will be no negative impacts on ethnic minority communities surrounding the campus or students and staff at Baise University and Baise Vocation School (BVS). Ethnic minorities make up more than half of the student and staff population of Baise University and BVS with the majority coming from the Zhuang ethnic minority particularly as the majority of students come from rural areas. The poverty and social assessment and consultations have determined that there are government policies for ethnic minority groups for admissions to TVET education including specific subsidies to ensure affordability and access. Ethnic minority students in the project institutions will benefit equally from project investments in increased quality and relevance of the multilevel TVET provision and improved school environments.

As per para. 17 SR3<sup>7</sup> of the SPS, the project has included measures in the overall project design in lieu of preparing a separate indigenous peoples plan. An analysis of the issues,<sup>8</sup>

<sup>&</sup>lt;sup>7</sup> "If Indigenous Peoples are the sole or the overwhelming majority of direct project beneficiaries, and when only positive impacts are identified, the elements of an indigenous peoples plan could be included in the overall project design in lieu of preparing a separate indigenous peoples plan. In such cases, the project document will include a summary of about how the project complies with Indigenous Peoples safeguards. In particular, it will explain how the requirements for meaningful consultation are fulfilled and how the accrual of benefits has been integrated into the project design."

consultations with staff, students, and other stakeholders, such as the Ethnic Minority Affairs Bureau from investigation during poverty and social assessment has been prepared and recommended actions integrated into project design. An assessment of the issues was conducted during the poverty and social assessment. The overview and rationale for design elements to ensure ethnic minority and social inclusion is in Linked document 13 of the RRP. Key findings include (i) in order to promote ethnic minority peoples higher education, the national government has made relevant policies to support ethnic minority students. including (a) minority students can receive extra points in college and university enrollment. The extra points are different for different ethnic minority peoples, and counties/cities they come from: (b) provision of pre-undergraduate courses to improve ethnic minority students' knowledge levels and help them to meet the requirements for undergraduates; and (c) minority students from poor or low-income households can enjoy various subsidies, which are the same to Han students who are from poor or low-income households; (ii) the composition of student and staff ethnic minority representation in the project institutions is the same as in the broader society; and (iii) there is an understanding that integration of ethnic minority culture into the curriculum is desirable. Currently Baise University has a major in ethnic minority history and culture. Design elements to ensure ethnic minority inclusion are included in the multiple TVET capacity building components and will be monitored through the social and gender action plan the project performance management system (PPMS) and regular project reporting. The ethnic minority actions will be reported on and disclosed semiannually in a separate document.

5. Specific actions incorporated include (i) collection of data disaggregated by ethnicity for employment information management system, student tracer studies and industry survey system, (ii) participation of teachers from ethnic minorities in MLT system, core teacher training programs, leadership trainings and competency based curriculum, (iii) development of new curriculum incorporating ethnic minority culture, (iv) incorporation of ethnic minority culture in regional cooperation activities, (v) social indicators, including ethnicity, included in PPMS, and (vi) a social development and gender specialist with expertise and understating of ethnic minority issues included as part of project management consultant team. An integrated GRM will be established.

<sup>&</sup>lt;sup>8</sup> Indigenous People's Measures (RRP linked document 13).
## VIII. GENDER AND SOCIAL DIMENSIONS

## A. Summary Poverty Reduction and Social Strategy

1. A social, poverty, and gender analysis was undertaken in accordance with the Asian Development Bank (ADB) guidelines. The project is expected to create positive social benefits through improvements in the quality and relevance of multilevel technical and vocational education and training (TVET). A social and gender action plan (SGAP) developed for the project includes measures to address the social and gender concerns and opportunities for inclusive development in all project components and capacity building. The SGAP is attached as **Table 1.** All SGAP activities are covered in the design of the project. A national social development and gender expert will be involved in the project for 6 months to support the executing agency, implementing agency and other consultants in implementing and monitoring the social and gender dimensions of the project.

## B. Social and Gender Dimensions

2. Baise Municipality, with an urban population of only 12.13% and ethnic minorities' population of about 86.70%, is one of the 14 national intensively poverty-stricken areas of the People's Republic of China (PRC). The per capita disposable income of urban and rural households in Baise is lower than both the provincial and national averages.<sup>1</sup> 40% of students enrolled in Baise University (including Baise Vocational College [BVS]) and 90% of students in BVS come from rural and poor areas. Government policies allow for BVS students to be exempt from tuition fees while Baise Municipality poverty alleviation programs enable Baise University students to avail of multiple financial aid programs (national fellowships, school scholarships, student loan, transportation subsidy, tuition or loan compensation, and part time jobs at Baise University).

3. The project is categorized as effective gender mainstreaming. The poverty and social analysis revealed that the female students of BVS, vocational college, and BU accounts for 90%, 75%, and 55%, respectively. The seven priority areas selected for TVET reform include preschool education, design, aluminum processing, engineering management, agriculture, tourism and logistics. The poverty and social analysis findings show high levels of female enrollment in preschool education and tourism primarily due to gender stereotyping of potential occupations linked with these sectors and lower levels in some of the key science, technology, engineering, and mathematics (STEM) majors which will be priorities under the project. Existing employment data shows graduate female employment of 55% from university level, 68% from vocational college level and 100% at secondary vocational schools (SVS) level. The project will help provide for career and employment opportunities for a substantial number of students from poor and rural areas many of whom are women. Given the potential that Baise Municipality holds in becoming an industrial hub not just within Guangxi province but also in relation to regional cooperation with neighboring countries, improvement of TVET programs can have a substantial impact on creating learning pathways for women, especially those from rural and poor areas, to enter into the new service driven economy in growing nontraditional sectors and participate in social and economic development of Baise.

4. The SGAP focuses on ensuring social inclusion and gender mainstreaming in all components of the project. Some key design elements have also been identified to address gender stereotyping in certain courses/occupations and to encourage the uptake of non-traditional and STEM majors. Key SGAP actions include the following gender design elements: (i) 100% female students paired with mentors for career guidance; (ii) 50% female

<sup>&</sup>lt;sup>1</sup> The urban per capita average was CNY19,561 in 2012, lower than the national (CNY24,565), and GZAR (CNY21,243) averages. The per capita net income of rural households was CNY4,774 in 2012, lower than both the national (CNY7,917), and the GZAR CNY 6,008) averages.

participation in outreach program for recruitment in rural areas, with an emphasis on addressing gender stereotypes; (iii) 40% female teachers participation in core teacher training, (iv) gender-sensitive competency-based curriculum development; (v) new campus include separate male/female dormitories, separate male/female latrines in campus facilities and improved night safety measures; (vi) 35% female target for civil works operations positions; (vii) gender recognition for industry partners who facilitate promotion of gender equality and promotion of women in non-traditional sectors; and (vii) introduction of specific measures for prevention, reporting and response to sexual harassment. The SGAP also features specific ethnic minority inclusion focused actions, such as (i) collection of data disaggregated by ethnicity for employment information management system, student tracer studies and industry survey system, (ii) participation of teachers from ethnic minorities in MLT system, core teacher training programs, leadership trainings and competency based curriculum, (iii) development of new curriculum incorporating ethnic minority culture, (iv) incorporation of ethnic minority culture in regional cooperation activities, (v) social indicators, including ethnicity, included in PPMS, and (vi) a social development and gender specialist with expertise and understating of ethnic minority issues included as part of project management consultant team. An integrated GRM will be established. These actions will help identify and address gender stereotypes in teaching materials and approaches and encourage a more inclusive and empowering learning environment. SGAP provisions must be applied from the outset where works are undertaken using the retroactive financing facility, even though the loan agreement may not yet have been signed. The project will comply with international recognized core labor standards and/or applicable labor laws.

5. **Implementation and monitoring**. The project management office in coordination with the implementing agencies and with the assistance of the project management consulting service (one national social development and gender expert with 6 personmonths input), are responsible for the implementation of the SGAP, and reporting on progress and achievements of the project. In addition, resource persons will be hired under the curriculum development activities to assist in the review of gender mainstreaming in the new curricula. Key indicators from SGAP will be included in the PPMS and reported every 6 months. The results based monitoring will also include an analysis of gender, ethnic minority and social issues.

|   |  |  | Responsible   |  |  |  |  |  |
|---|--|--|---|--|--|--|--|--|
| Output  | Action   | Indicator  | Budget Institutions   |  |  |  |  |  |
| Output 1: Technical   | nd Vocational Education and Training Quality Improved  | and Capacity Developed   |   |  |  |  |  |  |
| 1.1 Multilevel TVET<br>strategic<br>development                           | <ul> <li>(i) Training on and development of the MLT system<br/>ensures participation of men, women, and ethnic<br/>minorities.</li> <li>(ii) Employment information management system, studen<br/>tracer studies, and industry survey system collect and<br/>analyze disaggregated data on student enrollment<br/>graduation, and employment per course.</li> <li>(iii) Outreach and public awareness programs designed to<br/>address potential social and gender bias in enrollment<br/>and selection of majors and social inclusion.</li> </ul> | <ul> <li>(ii) 40% female participants and 50% ethnic minorities</li> <li>(baseline: female Baise University staff, 43%).</li> <li>(ii) Disaggregated data (sex, ethnicity, rural, and urban)</li> <li>collected and gender and social analysis conducted to</li> <li>identify constraints, needs, and priorities for women,<br/>ethnic minority, and vulnerable groups.</li> <li>(iii) 50% female participation in outreach programs.</li> <li>(iv) Information, education, and communication materials on<br/>choices of courses, occupations, and learning pathways<br/>promote student enrollment in non-traditional sectors.</li> <li>(v) Student enrollment database reviewed annually to<br/>measure changing profile of students<sup>1</sup></li> </ul> | Included in the<br>project. SDGE, Baise<br>Universtiy,<br>PMO, and<br>Education<br>Bureau of<br>counties and/or<br>districts.     |  |  |  |  |  |
| <ul><li>1.2 Curriculum development</li><li>1.3 Teacher training</li></ul> | <ul> <li>(i) Competency based curriculum integrates principles of gender equality and social inclusion;</li> <li>(ii) Training in CBA includes all teaching staff (male and female, ethnic minorities);</li> <li>(iii) New curriculum includes modules on ethnic minority cultures where possible.</li> <li>Core teacher training system ensures participation of all teachers.</li> </ul>   | <ul> <li>f (i) All materials reviewed by SDGE and resource persons and recommendations included in finalized materials.</li> <li>f (ii) All female and ethnic minority staff participate in CBA training (baseline: 0).</li> <li>f (iii) Ethnic minority cultures module developed and incorporated in the curriculum (e.g., tourism, preschool).</li> <li>At least 40% female, 30% ethnic minorities.</li> </ul>  | Included in the<br>project.<br>Baise<br>Universtiy, and<br>PMO.<br>Included in the<br>project<br>Baise<br>Universtiy, and<br>PMO. |  |  |  |  |  |
|   |  |  | Baise<br>Universtiy, and<br>PMO.  |  |  |  |  |  |
| 1.4 Staff<br>development  | <ul> <li>Leadership training includes a module covering gende equality and social inclusion;</li> <li>Female and ethnic minority teachers and/or stat participate in all staff development training programs.<sup>2</sup></li> </ul>   | <ul> <li>A gender equality and social inclusion focused module developed and incorporated in leadership training curriculum.</li> <li>40% female teachers and/or staff, 50% ethnic minorities participate in each of the planned trainings.</li> </ul>   | Included in the Baise<br>project. Universtiy and<br>PMO.  |  |  |  |  |  |
| Output 2: Chengbi C   | Output 2: Chengbi Campus Constructed and Environmental Sustainability Promoted   |  |   |  |  |  |  |  |
| Civil works   | <ul> <li>(i) Consultation with teachers and students on the new campus design.</li> <li>(ii) New campus features gender sensitive living and working conditions.</li> <li>(iii) Female workers participate in jobs generated by the project (6,881 person-months during construction and</li> </ul>  | <ul> <li>At least three consultation meetings: 40% female participants, 50% ethnic minorities.</li> <li>(ii) Separate dormitories for male and female students/teachers</li> <li>(iii) Separate male and female latrines in campus facilities.</li> <li>(iv) Improved safety measures during night</li> </ul>  | Included in the<br>design budget<br>and construction<br>budget.<br>PMO,<br>contractors and<br>SDGE.                               |  |  |  |  |  |

## Social and Gender Action Plan

<sup>&</sup>lt;sup>1</sup> Changing profile of students with regard to students in non-traditional sectors and increase in students from rural areas. <sup>2</sup> Staff development trainings include leadership training, oversees training, domestic study tours, and trainings in TVET institutions.

|   |   |   |                          | Responsible  |
|---|---|---|--------------------------|--|
| Output                                  | Action  | Indicator   | Budget                   | Institutions   |
|   | 685 positions during operation);<br>(iv) Specific measures for prevention, reporting and<br>response to prevention of sexual harassment in<br>campus developed and adopted.   | <ul> <li>(v) At least 20% of jobs targeted for local female during construction; and at least 35% of job positions during operation for female.</li> <li>(vi) All project institutions develop and implement specific measures for prevention, reporting and response to sexual harassment.</li> </ul>  |                          |  |
| Output 3: Technical                     | and Vocational Education and Training Innovation and F  | Relevance Promoted  |                          | I  |
| 3.1 School-<br>industry<br>partnerships | <ul> <li>(i) All three leading groups<sup>3</sup> ensure female participation.</li> <li>(ii) Implementation guidelines for gender mainstreaming<br/>in Enterprise Education Facility and Entrepreneurship<br/>Incubation Program designed.</li> <li>(iii) Special speaker series introduced to facilitate<br/>identification of potential role models, particularly<br/>female, from different professional backgrounds.</li> <li>(iv) Career guidance and mentoring sessions link female<br/>students with female faculty/professional women.</li> <li>(v) Gender recognition award established to recognize<br/>industry partners who have reduced gender<br/>inequality in workplace or promoted women in non-<br/>traditional sectors.</li> </ul> | <ul> <li>(i) 30% female members in each group (baseline: 0).</li> <li>(ii) Implementation guidelines developed with participation of male and female teachers.</li> <li>(iii) Once every 2 months speaker series introduced; 50% of speakers are professional women from different professional backgrounds.</li> <li>(iv) Monthly mentoring sessions established, 100% female students paired with a mentor.</li> <li>(v) Guidelines for gender recognition award developed; annual gender recognition award granted.</li> </ul> | Included in the project. | The<br>partnership<br>committee,<br>SDGE, Baise<br>Universtiy,<br>and PMO. |
| 3.2 Regional cooperation                | <ul> <li>(i) Ensure both male and female staff are included in the training of management team;</li> <li>(ii) Identification and expansion of ethnic minority culture regional cooperation activities.</li> </ul>   | <ul> <li>(i) At least 30% female staff.</li> <li>(ii) Ethnic minority culture regional cooperation activities included in the regional cooperation expansion plan.</li> </ul>   | Included in the project. | Cooperation<br>team,<br>SDGE, Baise<br>Universtiy,<br>and PMO.             |
| 3.3 Research                            | <ul> <li>(i) School-industry partnership regulation and policy<br/>include strategies to address gender stereotyping in<br/>majors/occupations.</li> <li>(ii) Gender analysis included in research on emerging<br/>labor market.</li> <li>(iii) Review bridging modules/courses to address<br/>rural/urban disparities for students.</li> </ul>   | <ul> <li>(i) Strategies to address gender stereotyping of majors/occupations. Reports identify gender disparities (if any) in priority sectors and recommend actions to address them.</li> <li>(ii) Recommendations to address rural/urban disparities identified and submitted to Baise University.</li> <li>(iii) Data analysis of growth area conducted with specific emphasis on gender impact in new economy.</li> </ul>   | Included in the project. | SDGE, Baise<br>Universtiy,<br>and PMO.                                     |
| Output 4: Project In                    | plementation Management   |   |                          |  |
|   | <ul> <li>(i) SDGE involved in development and implementation of activities for outputs 1, 2, and 3.</li> <li>(ii) Ensure female and the ethnic minority staff in the</li> </ul>   | <ul> <li>(i) At least one SDGE with 6 person-month input is included;</li> <li>(ii) At least 30% female staff, 50% ethnic minority staff.</li> </ul>  | Included in the project. | Baise<br>Universtiy<br>and PMO.  |

<sup>&</sup>lt;sup>3</sup> The three leading groups identified in the project are school industry committee at Baise University management level, school-industry partnership group, and professional steering group at faculty level.

| Output | Action              | Indicator  | Budget | Responsible<br>Institutions |
|--------|---------------------|--|--------|-----------------------------|
|        | project management. | (iii) Semiannual reports on (i) ethnic minority actions (to be |        |                             |
|        |                     | disclosed on the ADB website) and (ii) social inclusion        |        |                             |
|        |                     | and gender actions in the SGAP.                                |        |                             |

CBA = curriculum-based approach, MLT = multilevel TVET, PMO = project management office, SDGE = social development and gender expert, TVET = technical and vocational education and training.

# IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

| Design Summary  | Performance Targets and<br>Indicators with Baselines   | Data Sources and<br>Reporting Mechanisms                    | Assumptions and Risks  |
|---|--|---|--|
| Impact<br>Economic development<br>and industrial<br>transformation of Baise<br>Municipality | By 2023:<br>% increase in employment in<br>priority economic sectors<br>(Baseline: TBD in 2015).   | BMG Annual Statistics                                       | Assumption<br>The government sustains<br>its priority for developing<br>a multilevel labor pool.           |
| indinoipaity.   | % increase in average<br>wages (Baseline 2013:<br>CNY36,100)   | BMG Annual Statistics                                       | Risk<br>Economy falters and key<br>industries fail to expand.  |
| Outcome<br>A high quality, flexible,<br>and responsive MLT<br>system developed.             | <b>By 2019:</b><br>At least six multilevel<br>programs in priority TVET<br>majors established by 2018<br>(0 in 2014).  | Project progress reporting                                  | Assumption<br>Coordination of Baise<br>University institutions,<br>curriculum, and<br>resources continues. |
|   | % increase in graduates<br>(disaggregated by level, sex,<br>major, ethnicity, hukou<br>residence) (Baseline: TBD in<br>2015)   | Base University and Baise<br>Education Bureau<br>statistics | <b>Risk</b><br>Shift in education policy<br>away from multilevel<br>TVET development.                      |
|   | Increased employer<br>satisfaction with knowledge,<br>skills and competencies of<br>employees graduating from<br>the project TVET institutions<br>(Baseline: TBD in 2015). | Tracer studies and industry surveys                         |  |
| Outputs 1. TVET quality improved and capacity developed                                     | Competency-based gender<br>sensitive curricula<br>developed with industry and<br>at least six implemented by<br>2019.  | Project progress reporting                                  | Assumption<br>Industry experts will<br>participate fully in<br>developing effective<br>training programs.  |
|   | TVET student enrollment in<br>priority majors increases by<br>at least 25% with target of<br>30% female student<br>enrollment by 2018                                      | Project progress reporting                                  | Curricula developed do<br>not adequately identify<br>and respond to market<br>demand.                      |
|   | (disaggregated by sex and further by level and major).   |   | Poor social perception of<br>TVET limits MLT<br>students   |
|   | 30% student graduates<br>increase in Baise University<br>(disaggregated by major and<br>sex).  | Baise University statistics                                 |  |
|   | % graduates receiving<br>employment in areas where<br>they have been trained   | Baise University Statistics                                 |  |
|   | 550 teachers (40% female<br>teachers) trained in CBA<br>pedagogy and industry<br>relevant skills<br>(disaggregated by sex,<br>major, TVET level).                          | Project progress reporting                                  |  |
|   | 40% increase in dual<br>qualified teachers (2014<br>baseline: 14%  | Project progress reporting                                  |  |

## A. Table 1: Project Design and Monitoring Framework

| Design Summary   | Performance Targets and<br>Indicators with Baselines  | Data Sources a<br>Reporting Mecl  | nd<br>hanisms   | Assumptions and Risks   |
|--|---|---|---|---|
|  | disaggregated by sex,   |   |   |   |
| 2. Chengbi campus<br>constructed and<br>environmental<br>sustainability<br>promoted.   | Project progress  | ereporting  | Assumptions<br>Project financing is<br>provided on time<br>Project design and<br>construction are<br>implemented effectively<br>Risks<br>Delay in hiring the<br>procurement agent and<br>project implementation |   |
|  | Campus sustainability<br>strategy defined by 2015<br>and Green Sustainability<br>Center operational by 2017.<br>Share of renewable energy<br>consumption of Baise<br>University increased from<br>0% in 2014 to 15% by 2019.<br>Number of students<br>benefitting from new<br>facilities (Target 18,000, at | Strategy report,<br>progress reports<br>Baise University<br>management rep<br>and project prog<br>reports<br>Project progress | project<br>facilities<br>porting,<br>iress  | Relevant agencies lack<br>coordination in<br>implementation and<br>monitoring.              |
| 3. TVET innovation<br>and relevance<br>promoted  | Ieast Female target: 40%<br>Student information and<br>employment data system<br>established with capacity to<br>disaggregate social and<br>gender indicators by 2017.  | Project progress reporting  |   | Assumption<br>Regional cooperation<br>partners are ready to<br>engage on TVET.              |
|  | At least 10 regional Project progress reporting cooperation agreements signed by 2019.  |   | reporting   | <b>Risk</b><br>Industries continue to<br>seek qualified personnel<br>from outside of Baise. |
|  | At least 20 industry<br>partnerships created<br>(disaggregated by industry)<br>by 2019.   | Project progress  | s reporting   |   |
|  | Career guidance and<br>mentoring sessions link<br>students with role models<br>(100% female students)   |   |   |   |
| 4. Project<br>implementation<br>management   | Institutional arrangement of<br>project management office<br>strengthened and fully<br>staffed (30% female, 50%<br>ethnic minority) by 2015.  | Project progress  | Assumption<br>Trained staff on project<br>management and<br>coordination remains in<br>their respective positions<br>till the end of project  |   |
| operationalized by 2015.   |   |   |   | beyond.   |
| Activities with Milestor<br>1. Improving TVET Qui<br>1.1 Develop core ci<br>1.2 Develop curric<br>competency-ba<br>industries in col | nes<br>iality and Capacity Developme<br>urriculum standards and CBA by<br>ulum framework for MLT that<br>ised approach to course de<br>llaboration with industries by Q1  | nt<br>Q4 2016.<br>incorporates a<br>livery in pillar<br>2016.   | Inputs<br>Loan<br>ADB: \$50.<br>Item  | 0 million   |
| <ul> <li>1.3 Develop teacher<br/>and train teacher</li> <li>1.4 Upgrade teacher<br/>applied to their</li> </ul>                      | ers' guides, course materials, as<br>ers by Q3 2018.<br>ers' skills in competency-based<br>maiors in priority areas by Q1 20  | ssessment tools<br>approach that is<br>018.   | Total<br>Counterpa  | (\$ million)<br>50.00<br>art funding:   |

| Ac | tiviti | es with Milestones   | Inputs                             |               |
|----|--------|--|------------------------------------|---------------|
|    | 1.5    | Develop teacher training modules, standards, and assessment handbook by Q4 2016. | Baise Municipal<br>\$40.64 million | Government:   |
|    | 1.6    | Policy and guidelines developed for TVET teacher training center by Q2 2016.     | Commercial Bank: \$                | 12.90 million |
| 2. | Che    | ngbi Campus Construction and Promoting Environmental                             | Item                               | Amount        |
|    | Sust   | tainability  |                                    | (\$ million)  |
|    | 2.1    | Design facilities and procure the works by Q2 2015.                              | Total                              | 53.54         |
|    | 2.2    | Construct buildings and facilities by Q3 2016.                                   |                                    |               |
| 2  | 2.3    | Procure and install training equipment by Q3 2017.                               | Numbers may not                    | aum prociedu  |
| J. | 2 1    | Implementation of student information and employment data                        | hocause of rounding                | sum precisely |
|    | 5.1    | system by 01 2016  | because of founding                |               |
|    | 3.2    | Identify regional cooperation partners for key majors.                           |                                    |               |
|    |        | strategies, and monitoring indicators by Q3 2017.                                |                                    |               |
|    | 3.3    | Implement regional cooperation agreements by Q1 2018.                            |                                    |               |
|    | 3.4    | Create effective industry partnerships for training, research,                   |                                    |               |
|    |        | and employment by Q3 2016.   |                                    |               |
|    | 3.5    | Create leading groups at Baise University with industry                          |                                    |               |
|    | 36     | Initiate training and research partnerships by O4 2018                           |                                    |               |
| 4  | Proi   | initiate training and research partnerships by Q4 2010.                          |                                    |               |
|    | 4 1    | Complete necessary organizational arrangements for                               |                                    |               |
|    |        | implementation plan (setting up accounting systems and                           |                                    |               |
|    |        | improving financial and administrative policies and procedures)                  |                                    |               |
|    |        | by Q4 2014.  |                                    |               |
|    | 4.2.   | Recruit and mobilize implementation support consultants by Q1                    |                                    |               |
|    |        | 2015.  |                                    |               |
|    | 4.3.   | Undertake training and provide project implementation support                    |                                    |               |
|    |        | to implementing agency by Q2 2015 (including ADB                                 |                                    |               |
|    |        | procedures, procurement, disbursement, safeguards                                |                                    |               |
|    |        | monitoring, and financial management).   |                                    |               |
|    | 4.4.   | Implement EMP and SGAP until Q4 2019.  |                                    |               |

ADB = Asian Development Bank, BMG = Baise Municipal Government, CBA = competency-based curriculum, EMP = ethnic minority plan, MLT = multilevel TVET, PPMS = project performance monitoring system, SGAP = social and gender action plan, TBD = to be determined, TVET = technical and vocational education and training.

## B. Monitoring

#### 1. **Project Performance Monitoring**

The project performance monitoring system (PPMS) indicators, their relevance, and 1. monitoring practicalities will be discussed with the executing agency, PMO, implementing agency, and project beneficiaries during project implementation. Disaggregated baseline data for output and outcome indicators gathered during project processing will be updated and reported semiannually through the PMO semiannual progress reports and after each ADB review mission. These semiannual reports will provide information necessary to update ADB's project performance reporting system.<sup>1</sup> At the start of project implementation, PMO and the implementing agency, with the project implementation consultant's assistance, will develop integrated PPMS procedures to generate data systematically on the inputs and outputs of the components, as well as the indicators to be used to measure the project's impact and outcome taking into account the components' scope. The PMO will be responsible for monitoring and reporting on project performance. The basis for performance monitoring will be the DMF, which identifies performance targets for the impact. outcomes. and outputs of the project. Specific reporting requirements will be set out in the agreement between ADB and the government. The PMO will collect the data, calculate the indicators, analyze the results, and prepare a brief report describing the extent to which the project is generating the intended outputs and outcomes, as well as the overall impact on Baise Municipality. The relevance and practicability of data collection for indicators was confirmed

<sup>&</sup>lt;sup>1</sup> ADB's project performance reporting system is available at: <u>http://www.adb.org/Documents/Slideshows/PPMS/</u> default.asp?p=evaltool.

with the PMO and the implementing agency. Meanwhile, the agreed socioeconomic and environmental indicators to be used will be further enhanced to measure project impacts. The PMO and the IA agreed and confirmed that they will (i) refine and integrate the PPMS framework at the start of project implementation; (ii) confirm that targets are achievable; (iii) develop recording, monitoring, and reporting arrangements; and (iv) establish systems and procedures no later than 6 months after loan effectiveness.

## 2. Compliance Monitoring

2. Compliance with policy, legal, financial, economic, environmental, social, gender, and other covenants contained in the loan and project agreements will be monitored by PMO, and the implementing agency will be required to advise PMO of any circumstances that result or will likely result in non-compliance. PMO will report the latest situation in respect of covenant compliance in each of its semi-annual progress reports to ADB. ADB will monitor compliance through a review of the PMO progress reports and through selective follow-up discussions or more detailed reviews during supervisory missions to Baise.

## 3. Safeguards Monitoring

## a. Environment

3. The EMP defines supervision and monitoring requirements and responsibilities during project implementation, outlined below:

- (i) A construction supervision company (CSC) will be contracted by the implementing agency for daily supervision of EMP compliance monitoring. The CSC will be responsible for supervising construction progress and quality, and EMP implementation on construction sites. The CSC will include one staff in charge of (a) supervising the contractor's EMP implementation performance; and (b) preparing the contractor's environmental management performance section in monthly project progress reports submitted to the implementing agency and PMO.
- (ii) The implementing agency will appoint one member of the PIU (environment specialist, PIU-ES) in charge of construction site supervision and EMP verification. The PIU-ES will conduct regular construction site inspections in accordance with the inspection plan defined in the environment management plan (EMP, Appendix 1), using the inspection checklist attached to the EMP.
- (iii) The implementing agency will contract the Baise environment monitoring center (BEMC) under the Baise EPB to conduct periodic environment monitoring for noise, air quality and surface quality in accordance with the monitoring plan defined in the EMP.
- (iv) The loan implementation consultant will conduct field visits and verify EMP implementation progress on an annual basis, or more frequent if requested by the PMO, implementing agency, or ADB.

## b. Social and Gender Action Plans

4. Wherever appropriate, all PPMS data is to be disaggregated and reported on the basis of sex, ethnicity, residency (*hukou*), and socioeconomic status. The social development and gender specialist on the project implementation consulting team will work with the PMO and the implementing agency to design and agree specific reporting formats. The social development and gender specialist will also provide training on how such reports should be analyzed, interpreted and what follow up action is indicated as necessary. The PMO and the implementing agency will have at least one designated person to be responsible for project monitoring and evaluation, including the ethnic minority, gender and social dimensions. In addition to the PPMS monitoring and reporting, there is a requirement to ensure that all specific actions in the social and gender action plan be

reported on semi-annually as am attachment to the PPMS. The ethnic minority design features will be reported on semi-annually in a separate document and disclosed on the ADB website.. Monitoring of the construction contract requirements to use core labor standards and provide HIV/AIDS training to mitigate social risks will be done under the SGAP. Contractors will be required to establish systems for regular monitoring of local employment including disaggregating for ethnicity and sex. Each semi-annual progress report (see D below) is to include a summary of progress made in implementing the social and gender action plans

## c. Midterm Review and Evaluation

5. ADB and the BMG will review project implementation at least once a year to evaluate the progress of project implementation. In addition, ADB and the BMG will undertake a comprehensive midterm review two years after the start of project implementation to have a detailed evaluation of the scope, implementation arrangements, achievement of scheduled targets, and progress on the SGAP and agenda for multilevel TVET reform and capacity building measures. A procurement review for effective implementation (PREI) will also be conducted by ADB to assess progress and issues in procurement implementation and provide input for the midterm review. Feedback from the PPMS outputs will be analyzed. Within 6 months of physical completion of the project, the PMO will submit a project completion report to ADB.

## d. Reporting

6. The PMO will provide ADB with (i) semi-annual progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports, including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project accounts together with the associated auditor's report, should be adequately reviewed.

7. With regard to environment, the following reporting requirements have been defined in the EMP: (i) the PIU-ES will submit environmental inspection reports quarterly to the PMO; (ii) the BEMC will submit semi-annual environment monitoring reports (covering air, noise and surface water monitoring) to the Baise EPB and the PMO; (iii) the PMO, with support of the implementation consultant, will summarize EMP implementation progress in the semiannual and annual project progress reports and submit stand-alone annual environment monitoring reports in a format acceptable to ADB, to be disclosed on the ADB project website (in English), and Baise University's website (in Chinese); (iv) an appendix to the project completion report on EMP implementation and the project environment safeguards performance.

| Report   | Reference                               | Due Time   |
|--|---|--|
| PPMS<br>(i) Develop comprehensive PPMS procedures<br>(ii) Reporting of baseline and progress data<br>including environmental management plan | Project Agreement,<br>Schedule, paras.  | No later than 6 months after loan<br>effectiveness<br>Semiannual                   |
| Semiannual project reports   | Project Agreement,<br>Schedule, Article | Semiannual, within 1 month after<br>the end of each 6 months (July<br>and January) |
| Audited financial statements   | Project Agreement,<br>Schedule          | Not later than 6 months after the closure of fiscal year (June)                    |

## Table 2: Reporting to Asian Development Bank

| Report  | Reference                              | Due Time   |
|---|--|--|
| Social monitoring<br>(i) Reporting on SGAP implementation<br>(ii) Reporting on ethnic minority measures | Project Agreement,<br>Schedule, paras. | To be included in the semi-annual<br>project progress reports  |
| EMP progress reporting by PMO to ADB  | Project Agreement,<br>Schedule, paras. | To be included in the semi-annual<br>project progress reports and the<br>consolidated annual reports |
| Environment monitoring report by PMO to ADB   | Project Agreement,<br>Schedule, paras. | Annually during construction and<br>operation, until a project<br>completion report is issued        |
| Project completion report   | Project Agreement,<br>Schedule         | Not later than 6 months after the physical completion of the project                                 |

ADB = Asian Development Bank, EMP = environment management plan PMO = project management office, PPMS = project performance monitoring system, SGAP = social and gender action plan.

## 4. Stakeholder Communication Strategy

8. Project information will be communicated through public consultation, information disclosure mechanism in ADB's and government's website, meetings, interviews, focus group discussions, and community consultation meetings, in accordance with ADB's requirements of information disclosure policy.

Environment. Meaningful consultation was carried out with affected people and 9. other concerned stakeholders during project preparation. In the framework of the IEE and the domestic EIS update, public consultation was conducted with key stakeholders and potentially affected people. Information was disclosed to affected peoples through the websites of the GZAR government and BU, and through posters within the existing Baise University campus. The IEE and the EMP were disclosed on the project website. Future consultation will include involvement of affected people in monitoring EMP implementation during the construction and operation stages; and interviewing the public after the project is completed. During construction, the affected people, including students and teachers, will be consulted through formal questionnaire surveys (coordinated by the loan implementation consultant), and through regular interviews by the PIU-ES during site inspections. A project public complaint unit (PPCU) will be established in the PMO to coordinate the project GRM. Public concerns, complaints or suggestions related to environment management during operation of project facilities will be channeled to, and addressed by, the Campus Sustainability Center which will be established with project support.

10. **Social and gender action plan**. Public disclosure of all project documents will be undertaken through the implementing agency and on the ADB website, including the project information document, DMF, IEE, resettlement due diligence report and the Report and Recommendation of the President. Disclosure of social monitoring reports will be done during project implementation. Consultations with communities have taken place at different points in the preparation of the SGAP within the components, and have been designed not only to inform people about the component or specific activities related to its preparation and implementation, but also to enable people in the community to ask questions, make suggestions, state preferences, and express concerns. Further consultation will be conducted during SGAP implementation. Special attention will be paid to the participation of students, teachers, women, ethnic minority groups, migrant workers, and any other vulnerable groups, such as the poor.

11. **Technical and vocational education and training capacity building**. Extensive consultation was conducted during the PPTA period with a wide range of stakeholders including (i) teachers and management from the schools; (ii) students; (iii) industry representatives; and (iv) BMG including the Education, Human Resources, and Social Security Bureaus, and Science and Technology Bureaus as well as the All China

Woman's Federation. A GRM has been defined to deal with public complaints related to the project during project implementation. During construction and operation phases of the project, potentially affected people, TVET staff, and students will be involved through informal interviews. Implementation Agency officers will consult potentially affected people during regular construction-site inspections.

12. TVET staff, students, and industry representatives will be involved in the design of TVET activities such as the competency based curriculum, the TVET Training Center and school industry partnership activities as well as contributing to the qualitative monitoring of project outputs. A stakeholder communications strategy matrix has been prepared to highlight the most important communications challenges faced by the project and is tabulated below.

13. **Communications context**. The proposed project will improve the human resource base in Guangxi, PRC to support the transformation of the provincial economy for sustainable and inclusive growth. It will strengthen the provincial TVET system by (i) the development and implementation of a multilevel TVET (MLT) system that integrates curriculum, teacher training and staff development reforms (ii) fostering innovation through school-industry collaboration, regional cooperation activities and research opportunities; and (iii) improving the supply of well-trained graduates to assist Guangxi's priority sectors economic growth and social development.

14. The proposed project is focused on Baise University and associated institutions (SVS and vocational college) in their implementation of a MLT system in a TVET applicable university. The project is expected to play a demonstration role for other TVET applicable universities in Guangxi and as a focus for regional cooperation activities in neighboring GMS countries. The project focuses on Guangxi's five priority sectors of aluminum processing, engineering management, design, agriculture and preschool education and investigates reforms in the emerging sectors of tourism and logistics.

| Strategic Elements  |  |  |  |   | Work Plan Elements   |  | Evaluation   |  |  |
|---|--|--|--|---|--|--|--|--|--|
| Outcomes  | Risks  | Audiences /<br>Stakeholders  | Current and<br>desired<br>attitudes/behaviors  | Messages<br>/Information  | Activity<br>/Channels  | Timing   | Responsibility   | Resources<br>Needed  | Expected<br>Outcomes   |
| Develop-<br>ment of an<br>integrated<br>multilevel<br>vocational<br>education<br>system in<br>Baise<br>University,<br>BVC, and<br>BVS | Lack of<br>connectedness<br>between levels<br>and learning<br>pathways not<br>well developed | Baise<br>University,<br>BVC, and BVS<br>teaching staff +<br>project<br>stakeholders  | Active cooperation<br>e.g. to develop a<br>sequence of<br>learning outcomes<br>between levels  | <ol> <li>Improved<br/>opportunities<br/>for students</li> <li>Links<br/>between<br/>courses allow<br/>better teacher<br/>understanding<br/>and support</li> </ol> | Working<br>groups in<br>priority sectors<br>Industry<br>cooperation in<br>course<br>development  | Life of project<br>Expansion<br>potential for<br>other TVET<br>institutions in<br>latter stages<br>of project<br>(including<br>regional<br>cooperation<br>opportunities) | Baise<br>University,<br>BVC, BVS,<br>PMO and the<br>implementing<br>agency | Project budget   | More student<br>enrollments<br>and better<br>student<br>access to<br>higher level<br>TVET<br>courses and<br>programs |
| To promote<br>closer and<br>more<br>structured<br>enterprise<br>involvement<br>in the TVET<br>sector                                  | Schools and<br>enterprise<br>cooperation<br>remains<br>informal and<br>inefficient           | Baise<br>University,<br>BVC, and BVS<br>are all treated<br>as partners<br>with<br>enterprises<br>Communication<br>with industry<br>sectors | There is active<br>collaboration<br>between TVET<br>schools and<br>industry.<br>Project support<br>creates more<br>involvement and<br>forges greater<br>sharing of expertise | Mutual<br>benefits of<br>industry/TVET<br>cooperation<br>and the<br>sharing of<br>best practice<br>arrangements   | Leading group<br>discussions,<br>school/enter-<br>prise partner-<br>ships.<br>Communication<br>between<br>school-industry<br>and relevant<br>government<br>departments | Ongoing  | PMO, schools<br>and TVET<br>groups   | Project budget<br>(Leading<br>groups,<br>Enterprise<br>Education<br>facility,<br>research) | Increased<br>decision<br>making<br>opportunities<br>for industry<br>Increased<br>sponsorships<br>of TVET             |
| To promote<br>gender<br>sensitive<br>curriculum<br>development  |  | Baise<br>University,<br>BVC and BVS<br>Curriculum<br>Working<br>Groups<br>Leading<br>Groups  | Reduce gender<br>biases and<br>promotion of<br>stereotypes in<br>curriculum and<br>learning materials  | Detailed<br>guidelines for<br>gender-<br>sensitive<br>curriculum to<br>be provided to<br>the working<br>groups  | Training<br>(planned<br>training for<br>teachers and<br>working<br>groups)   | Year 1:<br>ongoing   | PMO,<br>curriculum<br>groups   | Project budget<br>(curriculum<br>development<br>budgets)                                   | Competency-<br>based<br>curriculum<br>includes<br>gender-<br>sensitive<br>material                                   |
| To<br>document<br>and share<br>lessons<br>learned<br>through  | Quality and<br>capacity<br>building<br>activities at<br>school level<br>are not shared       | Other TVET<br>institutions in<br>province:<br>including other<br>TVET<br>applicable  | Increased learning<br>from new curriculum<br>training is applied to<br>other majors and<br>courses in current<br>non-priority areas  | For each<br>activity<br>(curriculum,<br>teacher<br>training,<br>leadership  | Workshops<br>project<br>committees<br>and working<br>groups<br>Use of ICT  | Year 2<br>onwards  | PMO, project<br>committees<br>and working<br>groups                        | Project budget<br>(Communication<br>and outreach<br>strategy)                              | Project<br>evaluation<br>reviews<br>indicate<br>responsive<br>behavior has   |

## Stakeholder Communications Strategy Matrix for Technical and Vocational Education and Training Capacity Building

| Strategic Elements Work Plan Elements                          |  |                             | Evaluation                                    |  |                       |        |                |                     |                                   |
|--|--|-----------------------------|---|--|-----------------------|--------|----------------|---------------------|-----------------------------------|
| Outcomes   | Risks  | Audiences /<br>Stakeholders | Current and<br>desired<br>attitudes/behaviors | Messages<br>/Information   | Activity<br>/Channels | Timing | Responsibility | Resources<br>Needed | Expected<br>Outcomes              |
| project's<br>quality and<br>capacity<br>building<br>activities | with broader<br>group of<br>education,<br>industry and<br>government<br>stakeholders | universities                |   | development)<br>key<br>achievements<br>need to be<br>celebrated<br>and lessons<br>need to be<br>shared | platforms             |        |                |                     | occurred to<br>lessons<br>learned |

## X. ANTICORRUPTION POLICY

1. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the Project.<sup>1</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all Project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB- financed activity and may not be awarded any contracts under the Project.<sup>2</sup>

2. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the Project. These include:

- (i) The Baise Municipal Government (BMG), shall, and shall cause the implementing agencies to ensure they and all agencies involved in the project, comply with ADB's Anticorruption Policy (1998, as amended to date). BMG shall also cause the implementing agencies to undertake the following anticorruption actions: (a) involving full-time officials from the relevant Discipline Investigation Bureau in the bidding, award, and implementation of contracts; (b) introducing a dual-signing system, in which the contract winner signs an anticorruption contract with the employer when they sign and execute the contract; and (c) periodically inspecting the contractors' fund withdrawals and settlements.
- (ii) In furtherance of the principles of transparency, participation, accountability, and zero-tolerance for corruption, BMG shall maintain a relevant web-site that describes the project in order to provide the public with information on the project and project progress including setting out (a) the procurement plan and tracking of procurement contract awards, (b) relevant laws and regulations, and (c) job opportunities.

3. **Grievance and redress mechanism**. BMG will ensure that within 60 days following the effective date, comprehensive grievance redress mechanisms are established in accordance with the provisions of the Project Agreement to receive and facilitate resolution of stakeholder (including the general public) concerns, complaints, and grievances about the project. The grievance procedures should have multiple channels for both receiving and processing grievances of different types. For example, environmental grievances will be dealt with in a different manner to allegations of misprocurement.

4. During project preparations a risk assessment and risk management plan were prepared in accordance with the ADB's Second Governance and Anticorruption Action Plan. The assessment was that with the implementation of appropriate mitigation measures, as discussed and agreed with BMG and the implementing agency, the overall governance risk level was moderate. The risk management plan is a separate linked document to the Report and Recommendation to the President.

Available at: http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf

<sup>&</sup>lt;sup>2</sup> ADB's Integrity Office web site is available at: <u>http://www.adb.org/integrity/unit.asp</u>

## XI. ACCOUNTABILITY MECHANISM

1. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> For further information see: http://www.adb.org/Accountability-Mechanism/default.asp.

## XII. RECORD OF PAM CHANGES

1. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

## APPENDIX 1: ENVIRONMENTAL MANAGEMENT PLAN

## A. Introduction

1. This environmental management plan (EMP) is developed for the Guangxi Baise Vocational Education Development Project and defines all potential impacts of the project outputs and the mitigation and protection measures with the objective of avoiding or reducing these impacts to acceptable levels. The EMP also defines the institutional arrangements and mechanisms, the roles and responsibilities of different institutions, and procedures and budgets for implementation of the EMP. The EMP seeks to ensure continuously improving environmental protection activities during preconstruction, construction, and operation in order to prevent, reduce, or mitigate adverse impacts and risks. The EMP draws on the findings of the project initial environmental examination (IEE), the domestic environmental impact statement (EIS) report, project preparatory technical assistance, and Asian Development Bank (ADB) review mission discussions and agreements with the relevant government agencies.

2. The EMP will be reviewed and updated at the end of the detailed design in order to be consistent with the final detailed design. The updated EMP will be disclosed on the ADB project website. The updated EMP will also be included as a separate annex in all bidding documents. The contractors will be made aware of their obligations to implement the EMP, to budget EMP implementation costs in their bids, and to develop site-EMPs fully responsive to the EMP.



## B. Institutional Responsibilities

3. **Figure EMP-1** defines the organizational structure for the Project implementation.

Figure EMP-1: Institutional Arrangement for Environmental Management of the Project

4. As executing agency, the Baise Municipal Government (BMG) will be responsible for the overall implementation of the project, including the EMP and its environmental monitoring plan. BMG has established the Baise project leading group (PLG), led by the vice mayor of Baise Municipality and including high level officials from the Finance Bureau, the Development and Reform Commission (DRC), the Education Bureau, and Housing and Urban-Rural Construction Bureau (HURCB) to (i) provide overall project direction and any required policy guidance, (ii) oversee the preparation and implementation of the project, (iii) support cross-agency policy dialogue, and (iv) review project progress and provide strategic advice to support effective implementation.

5. Baise DRC will exercise day-to-day oversight of the project and will be responsible for (i) approval of domestic feasibility study report and submission of authorization requests for foreign capital utilization, (ii) approval of any major changes needed to project scope, (iii) liaison with DRC of Guangxi Zhuang Autonomous Region and National Development and Reform Commission, (iv) facilitating interdepartmental and intersector cooperation needed for effective project implementation, (v) economic planning and managing the alignment of individual sector plans and reforms with the approved economic plans, and (vi) involvement in policy dialogue.

6. Baise DRC, which includes representatives from Baise University, Baise Finance Bureau, and Housing and Urban-Rural Construction Bureau has established a **project management office (PMO)** to direct project preparation and implementation activities, monitor project progress and project impacts, and facilitate the communication and coordination with ADB. For environment safeguards, the PMO will have the overall responsibility delegated by Baise DRC for supervising the implementation of the EMP, coordinating the project level safeguards grievance redress mechanism (GRM), and reporting to ADB. The PMO will assign one safeguards officer (PMO-SO) in charge to supervise the effective implementation of the EMP.

7. To ensure that the contractors comply with the EMP provisions, the PMO-SO with the help and technical support of environment specialist of the loan implementation support (LIS-ES), will prepare and provide the following specification clauses for incorporation into the bidding procedures: (i) a list of environmental management requirements to be budgeted by the bidders in their proposals; (ii) environmental clauses for contractual terms and conditions; and (iii) major items in the IEE and EMP. In addition the PMO-SO will prepare annual environment monitoring and EMP implementation reports in English, and submit them to ADB for appraisal and disclosure.

8. **Implementing agency and project implementing unit.** Baise University will be the implementing agency for the project. Baise University has set up the project implementing unit (PIU) to coordinate the preparation and implementation of subproject components. The PIU will be fully staffed with technical experts and administrators in charge of procurement, financial management, disbursement, monitoring, evaluation, and coordination.

9. **Project implementing unit environment supervisor.** The implementing agency will lead the preparation and implementation of all civil works. The implementing agency will appoint one environment supervisor (PIU-ES) to do the following (i) review and approve contractors' site-EMP; (ii) conduct site inspections following the site inspection checklist **(Appendix 2)**; (iii) organize periodic environmental monitoring in compliance with the approved monitoring plan; (iv) act as local entry point for the project GRM; (v) assess the contractors' compliance with the site-EMP and People's Republic of China (PRC) environmental quality standards for ambient air, water, and noise qualities; (vi) submit

quarterly inspection and monitoring results to the contractors for information, and to the PMO for verification and confirmation.

10. **Construction contractors** will be responsible for implementing the mitigation measures during construction. In their bids, contractors will be required to respond to the environmental management requirements defined in the EMP. Each contractor will be required to develop site-EMPs and will assign a person responsible for environment, health, and safety. After project completion, environmental management responsibilities will be handed over to Baise University.

11. **Construction supervision company.** One construction supervision company (CSC) will be contracted by the implementing agency. The CSC will be responsible for supervising construction progress and quality, and EMP implementation on construction sites. The CSC will include one staff in charge of (i) supervising the contractor's EMP implementation performance; and (ii) preparing the contractor's environmental management performance section in monthly project progress reports submitted to the implementing agency and PMO.

12. **Environment specialist of the loan implementation support.** Under the loan implementation consultancy services, one national (5 person-months) environmental specialist will be recruited to provide technical and management support to the implementing agency to including IEE and EMP implementation, monitoring, and supervision coordination; and other environmental protection related tasks. The LIS-ES will support the implementation of the EMP, including:

- (i) Assess the project outputs' environmental readiness prior to implementation based on the readiness indicators defined in the EMP.
- (ii) Update the EMP including mitigation measures, monitoring plan, institutional arrangements, and training plan as necessary, to reflect the final project scope and detailed design, including submission to ADB for review and disclosure.
- (iii) If required, update the IEE report for changes in the project during detailed design (for example if there is a scope change) that would result in adverse environmental impacts not within the scope of the approved IEE.
- (iv) Support the executing agency, PMO, implementing agency, PIU, and tendering companies in preparing bidding documents; ensure that the bidding documents and civil works contracts contain provisions requiring contractors to comply with the mitigation measures in the EMP and that relevant sections of the updated project EMP are incorporated in the bidding and contract documents.
- (v) Support the implementing agency in reviewing and approving contractors' site-EMPs and organizing the conduct of periodic environmental impact monitoring.
- (vi) Provide expert advice to properly implement the EMP and ensure actual practices are in accordance with the EIA, EMP, soil erosion protection plan, and other environmental protection guidelines.
- (vii) Assist the executing and implementing agency to establish a GRM, and provide training for the implementing agency and other GRM access points.
- (viii) Conduct regular EMP compliance verification, undertake site visits as required, identify any environment-related implementation issues, and propose necessary corrective actions.
- (ix) Prepare, on behalf of the implementing agency, annual EMP monitoring and progress reports to ADB.
- (x) Provide training to PMO, implementing agency, PIU, and contractors on environmental laws, regulations and policies, ADB's SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP.
- (xi) Assist the PMO, implementing agency, and PIU in conducting site inspections and public consultation meetings with affected persons and relevant stakeholders, informing them of imminent construction works, updating them on the latest project development

activities.

- (xii) Conduct assessment of project's performance at project completion stage and approximately one year of operation to confirm compliance with EMP as well as sound management practices (environment audit), contribute to the project completion report.
- (xiii) Provide inputs of environmental protection to semiannual progress reports, midterm report, project completion report, and other project required documents.

13. **Campus sustainability planning expert.** Under the loan implementation consultancy services, one national (4 person-months) campus sustainability planning expert will be recruited to assist Baise University and its General Affairs Department in defining a campus sustainability policy, and developing a sustainability center with clear strategic objectives, sustainability programs, institutional structure, terms of reference. The specific tasks of campus sustainability planning expert (CSPE) include:

- (i) Organize a seminar for Baise University senior management and relevant departments on (a) PRC policies and guidelines pertaining to green campus development, campus sustainability planning, the promotion of energy-efficiency, low-carbon, and resourceefficient development; and (b) successful case studies in the PRC (output: seminar report, including documentation of successful case studies).
- (ii) Plan and facilitate (in collaboration with the General Affairs Department and the Teaching Affair Department) a participatory assessment of current and planned programs within the campus that aim at promoting campus sustainability, low-carbon development, energy-efficiency, resource-conservation, environmental awareness raising, sustainability in curriculum, and other sustainability initiatives (output: assessment report).
- (iii) Facilitate the definition of a Campus Sustainability Policy based on a nationally recognized methodology, including formulation and agreement on policy vision; policy goals; policy targets; and commitments (output: Campus Sustainability Policy Statement, endorsed by Baise University senior management).
- (iv) Facilitate the creation of a governance structure ("Sustainability Center") within Baise University's General Affair Department, including definition of (a) organization setup and terms of reference; (b) main sustainability pillars (e.g. green campus, green curriculum, green community; and (c) a roadmap with clearly articulated targets and measurable indicators (output: sustainability center and roadmap).
- (v) Develop outlines of sustainability policies for Baise University priority areas, e.g., energy policy, waste management policy, green procurement policy, and environment awareness policy (output: draft sustainability policies for at least two priority areas).<sup>41</sup>
- 14. Overall environmental responsibilities are outlined in **Table EMP-1**.

| Phase           | Responsible<br>Agencies                            | Environmental Responsibilities   |
|-----------------|--|--|
| Detailed design | Design institute                                   | Incorporation of environmental mitigation measures in detailed designs   |
|                 | PMO, implementing agency, LIS-ES                   | Update EMP based on detailed design, if necessary  |
|                 | ADB  | Issue no-objection for updated EMP, disclose on project website  |
| Tendering       | Implementing<br>agency, LIS-ES,<br>tendering agent | Ensure that mitigation measures and the EMP clauses are incorporated in bidding documents, civil works contracts, and contractors' site-EMPs |
|                 | LIS-ES, ADB  | Review bidding documents, confirm project's readiness  |

 Table EMP-1: Environmental Responsibilities by Project Phase

<sup>&</sup>lt;sup>41</sup> This may include the following: energy conservation, resource-efficiency, 3R in waste management, health and safety, green procurement, campus landscaping, environment awareness).

|              | Responsible   |  |
|--------------|---|--|
| Phase        | Agencies  | Environmental Responsibilities   |
| Construction | Contractors   | Develop site-EMP, appoint one environmental specialist to coordinate site-EMP implementation, and ensure health and safety.  |
|              | CSC   | Supervise the contractor's EMP implementation performance, and prepare the contractor's environmental management performance section in monthly project progress reports submitted to the implementing agency and PMO  |
|              | PMO (PMO-SO)  | Coordinate GRM, supervise EMP implementation, and prepare annual environmental progress report (with support of LIS-ES)  |
|              | Implementing<br>agency, PIU, PIU-ES                   | Assign one environmental supervisor (PIU-ES); conduct environmental inspections and regular monitoring; prepare quarterly environmental inspection and monitoring reports; act as local GRM entry point.<br>Contract BEMC for periodic environment monitoring of air, noise, and surface water quality.  |
|              | LIS-ES  | Advise on the mitigation measures; provide comprehensive technical support to PMO, implementing agency, and PIU for environmental management, conduct training, conduct annual EMP compliance review, and support PMO in preparing annual environmental progress reports.  |
|              | ADB   | Conduct review missions, and review and approve annual environmental progress reports, including disclosure.   |
|              | BEPB, BEMC  | Conduct periodic inspections of all constructions relative to compliance with PRC regulations and standards. Conduct environment monitoring of air, noise, and surface water quality in accordance with monitoring plan defined in the EMP.  |
| Operation    | Construction<br>completion<br>acceptance<br>committee | Construction completion acceptance for each civil work contract (acceptance committee consisting of Baise University, LDI, Baise Quality Inspection Station, Baise Construction Bureau, Baise EPB)   |
|              | PMO (PMO-SO)  | Conduct EMP compliance review, instruct Baise University on environmental<br>management requirements, and prepare annual environmental progress report<br>until a project completion report is issued.   |
|              | Baise University                                      | Define a campus sustainability policy; develop a sustainability center with clear strategic objectives, sustainability programs, institutional structure, and terms of reference.  |
|              | CSPE  | Provide training on green campus development, energy efficiency, and low carbon campus operation. Plan and facilitate an assessment of current and planned programs that aim at promoting campus sustainability, low-carbon, and energy-efficiency. Facilitate the definition of a campus sustainability policy and develop outlines of sustainability policies for Baise University priority areas. |

ADB = Asia Development Bank, BEMC = Baise environment monitoring center, CSPE = campus sustainable planning expert, EMP = environment management plan, EMS = environment management system, EPB = environment protection bureau, GRM = grievance redress mechanism, LIS-ES = loan implementation support environment specialist, PIU = project implementing unit (under implementing agency), PIU-ES = PIU environmental supervisor, PMO = project management office.

#### C. Summary of Potential Impacts and Mitigation Measures

15. Potential environmental issues and impacts during the pre-construction, construction, and operation phases, as identified in the IEE, as well as corresponding mitigation measures designed to minimize the impacts are summarized in Table EMP-2. The contractors will reflect these mitigation measures in their site-EMPs, to be reviewed and approved by the PIU-ES, PMO-SO, and the LIS-ES.

16. The effectiveness of these measures will be evaluated based on the results of the environmental inspections by the PIU-ES and the CSC, environment monitoring by the Baise Environmental Monitoring Center (BEMC), and through annual EMP verification conducted by the LIS-ES.

17. Most mitigation measures will be shouldered by construction contractors in the construction phase under supervision of CSC and LIS-ES. Periodic monitoring and regular supervision costs will be

shouldered by the implementing agency and PIU. The PMO will ensure that adequate funds for mitigation measures and monitoring activities have been allocated by the contractor and Baise University.

| Impact Factor /<br>Project Stage              | Potential Impacts<br>and/or Issues   | Location             | Mitigation measures   | Implementation<br>Agency                                     | Supervision<br>Agency                  | Monitoring<br>Indicators   |
|---|--|----------------------|---|--|--|--|
| A. Pre-constructio                            | n Phase  |                      |   | <b>5</b> ,   | <b>J</b>                               |  |
| <ol> <li>Detailed<br/>design stage</li> </ol> | Institutional<br>strengthening   | Not<br>applicable    | <ul> <li>Implementing agency (Baise University) to<br/>establish PIU.</li> <li>PMO to assign PMO-SO.</li> <li>PMO to engage LIS-ES and CSPE.</li> <li>Implementing agency to engage PIU-ES.</li> <li>Implementing agency to engage BEPB.</li> </ul>   | Implementing agency,<br>PIU, PMO                             | Executing<br>agency, ADB               | Project<br>readiness<br>assessment by<br>LIS-ES, first<br>EMR.             |
|   | Design complying<br>with relevant<br>national health,<br>safety and<br>environmental<br>codes and<br>standards, including<br>green and energy-<br>efficient building<br>codes and<br>specifications. | All new<br>buildings | <ul> <li>Design buildings in compliance with relevant design standards and codes for energy-efficient, safe and green public buildings, including but not limited to: Including, but not limited to: GB/T50378-2006 (Evaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007), and other applicable national design codes.</li> <li>Ensure use of no VOC-emitting materials (including paints, coatings, adhesives, carpet and furniture's) to ensure high indoor air quality.</li> </ul> | Design institute   | Implementing<br>agency, PMO,<br>LIS-ES | Approved<br>detailed<br>designs, first<br>EMR                              |
|   | Updating EMP   | Not<br>applicable    | Review mitigation measures defined in this EMP,<br>update as required to reflect detailed design.   | LIS-ES, PMO-SO   | ADB                                    | Updated EMP<br>approved by<br>ADB and<br>disclosed.                        |
| 2. Bidding and<br>contract award<br>stage     | Bidding documents<br>and contractors<br>qualifications   | Not<br>applicable    | <ul> <li>Include updated EMP of the IEE as annex to the bidding documents.</li> <li>Include an environmental section in the requirements for bidders.</li> <li>Ensure that construction and supply contracts are responsive to EMP provisions and mitigation and monitoring measures are adequately budgeted;</li> <li>Implement a Green Public Procurement policy, with references to Public Procurement List of Energy-Saving Products (NDRC and MOF, 2011, or as updated) and Public Procurement List of Environmental Labeling Products (MEP and MOF, 2011, or as updated).</li> </ul>  | Procurement agent,<br>design institute(s),<br>PIU-ES, LIS-ES | Executing<br>agency, PMO,<br>ADB       | Bidding<br>documents,<br>construction and<br>equipment<br>supply contracts |
|   | GRM  | Not<br>applicable    | <ul> <li>Establish a GRM, appoint a GRM coordinator.</li> <li>Brief and provide training to GRM access points</li> </ul>  | PMO-SO, LIS-ES   | Executing agency, ADB                  | Operational<br>GRM. first EMR  |

## Table EMP-2: Anticipated Impacts, Mitigation Measures

| Impact Factor /<br>Project Stage | Potential Impacts             | Location   | Mitigation measures  | Implementation | Supervision                | Monitoring<br>Indicators  |
|----------------------------------|-------------------------------|--|--|----------------|----------------------------|---|
| Tojeet olage                     |                               | Location   | <ul> <li>PIU-ES, contractors).</li> <li>Disclose GRM to affected people before construction begins.</li> </ul>   | Agency         | Agency                     | indicators  |
|                                  | EMP training                  | Not<br>applicable  | Provide training to PMO, PIU and contractors on<br>implementation and supervision of EMP, GRM,<br>reporting, in compliance with training plan (Table<br>EMP-5)   | LIS-ES         | PMO, ADB                   | Evidence of<br>training<br>provided,<br>satisfaction<br>survey of<br>participants,<br>First EMR |
|                                  | Site-EMPs                     | Not<br>applicable  | Develop Site-EMPs, responding to all clauses and<br>requirements of this EMP, and including sub-plans<br>such as Spill Management Plan, Waste Management<br>Plan, Temporary Traffic Management Plan,<br>Occupational Health and Safety Plan, Soil Erosion<br>Control Plan, and others.   | Contractor     | PMO-SO, PIU-<br>ES, LIS-ES | Approved Site-<br>EMPs, First<br>EMR.   |
| B. Construction P                | hase                          |  |  |                |                            |   |
| 1. Soil                          | Soil erosion,<br>revegetation | All<br>construction<br>sites, spoil<br>disposal<br>sites | <ul> <li>Develop soil erosion protection plan in compliance with provisions of the WSCP approved by Baise Municipal Water Resource Bureau, May 2010 (Doc. No. Baise Shuibao-2010/13), including:         <ul> <li>Minimize active open excavation areas;</li> <li>Construct intercepting ditches and drains to prevent runoff entering construction sites, and divert runoff from sites to existing drainage;</li> <li>minimize soil excavation works in rainy seasons (April to September)</li> <li>Dispose of surplus soil at approved spoil disposal site located 200m north of the Chengbi campus;</li> <li>Stabilize all earthwork disturbance areas within maximum 14 days after earthworks have ceased;</li> <li>Properly slope and re-vegetate disturbed surfaces</li> </ul> </li> </ul> | Contractor     | PIU-ES, CSC,<br>LIS-ES     | Quarterly<br>inspection<br>reports of PIU-<br>ES, annual<br>EMRs                                |
|                                  | Soil contamination            | All<br>construction<br>sites                             | Store chemicals/hazardous products and waste<br>on impermeable surfaces in secure, covered<br>areas.   | Contractor     | PIU-ES, LIS-ES,<br>CSC     | Quarterly<br>inspection<br>reports of PIU-  |

| Impact Factor /            | Potential Impacts   |  |   | Implementation | Supervision                              | Monitoring   |
|----------------------------|---|--|---|----------------|--|--|
| Project Stage              | and/or Issues   | Location   | Mitigation measures   | Agency         | Agency                                   | Indicators   |
|                            |   |  | <ul> <li>Remove all construction wastes from the site to<br/>approved spoil disposal sites.</li> <li>Provide spill cleanup measures and equipment at<br/>each construction site.</li> <li>Conduct training in emergency spill response<br/>procedures.</li> </ul>   |                |  | ES, annual<br>EMRs   |
|                            | Slope stabilization,<br>landslide risk                                    | Landslide<br>prone slopes<br>within<br>campus                              | <ul> <li>Construct 40,600 m<sup>2</sup> of slope protection works<br/>within campus at designated areas in compliance<br/>comply with the PRC's Standard Drawings for<br/>Retaining Walls and Slope Protection of 04J008,<br/>including (i) design I–natural vegetation slope<br/>protection; (ii) design II–gravity retaining wall +<br/>vegetation slope protection, and (iii) design III–<br/>arched concrete-framed vegetation slope<br/>protection.</li> </ul>   | Contractor     | PIU-ES, CSC,<br>LIS-ES                   | Quarterly<br>inspection<br>reports of PIU-<br>ES, annual<br>EMRs |
| 2. Surface and groundwater | Pollution of surface<br>and groundwater<br>resources                      | All<br>construction<br>sites, surface<br>water within<br>Chengbi<br>campus | <ul> <li>Install water collection basins and sediment traps<br/>in all areas where construction equipment is<br/>washed.</li> <li>Wastewater generated from the washing down of<br/>mixer trucks and drum mixers and similar<br/>equipment should wherever practicable be<br/>recycled.</li> <li>Surplus wastewater and wastewater generated<br/>from building construction activities, including<br/>concreting, plastering, cleaning of works and<br/>similar activities should be discharged in to sewer<br/>after removal of solids in a silt removal facility.</li> <li>Sewage from temporary toilets, kitchens and<br/>similar facilities should be stored in an on-site<br/>facility (such as septic tank), emptied regularly<br/>and transported to a designated wastewater<br/>treatment plant for further treatment.</li> <li>Properly manage solid waste (see below).</li> </ul> | Contractor     | PIU-ES, LIS-ES,<br>CSC                   | Quarterly<br>inspection<br>reports of PIU-<br>ES, annual<br>EMRs |
| 3. Solid waste             | Construction and<br>domestic wastes<br>generated on<br>construction sites | All<br>construction<br>sites   | <ul> <li>Maximize reuse/recycling of construction and deconstruction wastes (e.g. iron, bricks, windows, doors, steel bars, etc.).</li> <li>Provide appropriate waste storage containers for worker's construction and hazardous wastes.</li> <li>Install confined storage points of solid wastes away from sensitive receptors, regularly haul to an approved disposal facility.</li> <li>Use licensed contractors to remove wastes from the construction sites.</li> <li>Prohibit burning of waste.</li> <li>Maintain equipment and machinery in cood</li> </ul>  | Contractor     | PIU-ES, LIS-ES,<br>CSC<br>PILLES, LIS-ES | Quarterly<br>inspection<br>reports of PIU-<br>ES, annual<br>EMRs |

| Impact Factor / | Potential Impacts                     | Leastion   |  | Implementation | Supervision                  | Monitoring   |
|-----------------|---------------------------------------|--|--|----------------|------------------------------|--|
| Project Stage   | and/or issues                         | Location   | Witigation measures  | Agency         | Agency                       | indicators   |
|                 | construction<br>activities            | construction<br>sites, nearby<br>residential<br>areas                        | <ul> <li>working order; undertake regular equipment maintenance, ensure compliance with PRC standard of GB 12523-2011.</li> <li>Reach an agreement with Baise University management and nearby residents regarding the timing of heavy machinery work, to avoid any unnecessary disturbances; nighttime works should only be conducted in exceptional cases, and a permit should be obtained for that purpose; and potentially affected people including students, staff and nearby residents should be informed in advance.</li> <li>Install temporary anti-noise barriers to shield school buildings where non-compliance with Category II in Environmental Quality Standards for Noise (GB3096-2008) is anticipated and/or monitored.</li> <li>Locate sites for concrete-mixing and similar activities at least 300 m from sensitive areas if without any mitigations.</li> <li>Monitor noise within Baise University campus and at nearby sensitive areas at regular intervals (as defined in the monitoring plan).</li> <li>Seek suggestions from Baise University management and potentially affected sensitive receptors to reduce noise annoyance. Disseminate information on procedure of handling context therewise the CMM</li> </ul> |                | CSC, BEMĆ                    | inspection<br>reports of PIU-<br>ES; annual<br>EMRs;             |
| 5. Ambient air  | Dust generated<br>during construction | All<br>construction<br>sites,<br>including<br>nearby<br>residential<br>areas | <ul> <li>Install perimeter fences at each site prior to construction. The fence shall be at least 2m high.</li> <li>Spray water at least twice a day where fugitive dust is generated during deconstruction of old buildings and civil works.</li> <li>Cover trucks carrying earth, sand or stone with tarps or other suitable cover to avoid spilling and dust generation.</li> <li>Undertake regular air quality monitoring in around the campus in accordance with the monitoring plan.</li> <li>Regularly consult students and staff as well as nearby residents to identify concerns, and implement additional dust control measures as necessary.</li> </ul>   | Contractor     | PIU-ES, LIS-ES,<br>CSC, BEMC | Quarterly<br>inspection<br>reports of PIU-<br>ES; annual<br>EMRs |
|                 | Air emissions from construction       | All construction   | Store petroleum or other narmful materials in<br>appropriate places and covering to minimize   | Contractor     | CSC                          | inspection   |

| Impact Factor /                      | Potential Impacts  |  |   | Implementation     | Supervision  | Monitoring  |
|--------------------------------------|--|--|---|--------------------|--|---|
| Project Stage                        | vehicles and<br>machinery  | sites  | <ul> <li>fugitive dust and emission.</li> <li>Maintain vehicles and construction machineries to<br/>a high standard to ensure efficient running and<br/>fuel-burning and compliance with the PRC<br/>emission standards (GB18352-2005, GB17691-<br/>2005, GB11340-2005, GB2847-2005, and<br/>GB18285-2005).</li> </ul>  | Agency             | Agency   | reports of PIU-<br>ES; annual<br>EMRs   |
| 6. Physical<br>cultural<br>resources | Damage to known<br>or unknown above-<br>or below-ground<br>cultural relics                 | All<br>construction<br>sites with<br>excavation<br>works | <ul> <li>Establish chance-find procedures for physical cultural resources.</li> <li>If a new site is unearthed, construction must be stopped immediately and the implementing agency and local cultural relic bureau promptly notified, and construction will resume only after a thorough investigation and with the permission of the appropriate authority.</li> </ul>   | Contractor         | PIU-ES, LIS-ES,<br>CSC, PMO-SO<br>local cultural relics<br>bureau  | Quarterly<br>inspection<br>reports of PIU-<br>ES, annual<br>EMRs  |
| 7. Flora and fauna                   | Protection of<br>vegetation, re-<br>vegetation of<br>disturbed areas,<br>greening of sites | Chengbi<br>campus  | <ul> <li>Preserve existing vegetation where no construction activity is planned.</li> <li>Remove trees or shrubs only as a last resort if they impinge directly on permanent structures.</li> <li>Properly re-vegetate disturbed areas after completion of civil works.</li> </ul>  | Contractor         | PIU-ES, LIS-ES,<br>CSC   | Annual EMRs   |
| 8. Health and safety                 | Occupational health<br>and safety  | All<br>construction<br>sites, work<br>camps              | <ul> <li>Appoint one staff to implement and supervise the implementation of the site-EMP and the performance of subcontractors.</li> <li>Provide safe supply of clean water and an adequate number of latrines and other sanitary arrangements at the site and work areas, and ensure that they are cleaned and maintained in a hygienic state.</li> <li>Provide garbage receptacles at construction site.</li> <li>Provide PPE for workers in accordance with relevant health and safety regulations.</li> <li>Develop an emergency response plan to take actions on accidents and emergencies; document and report occupational accidents, diseases, and incidents; organize fully equipped first-aid base at each construction site.</li> <li>Establish records management system that will store and maintain easily retrievable records on occupational accidents, diseases, and incidents.</li> <li>Train all construction workers in basic sanitation and hygiene issues, general health and safety matters, and on the specific hazards of their work.</li> <li>To minimize the risk of conflicts between workers and staff/students of the schools, implement</li> </ul> | Contractor, PIU-ES | PMO-SO, Baise<br>Municipal center<br>of disease control,<br>LIS-ES | Inspection<br>report of PIU-<br>ES, report on<br>number of<br>incidents and<br>complaints in<br>annual EMRs |

| Impact Factor /<br>Project Stage | Potential Impacts              | Location  | Mitigation mossures   | Implementation     | Supervision                                     | Monitoring   |
|----------------------------------|--------------------------------|---|---|--------------------|---|--|
| Tioject Stage                    |                                | Location  | <ul> <li>HIV/AIDS, and STI awareness and prevention training for all employees, and together with the local centers of disease control and the school management, disseminate information on the risks, hazards, impacts and prevention know-how on HIV/AIDS and STIs among the staff/students, workers on the construction sites, students and staff of Baise University, and local community.</li> <li>Ensure that safety, rescue, and industrial health matters are given a high degree of publicity to all persons regularly or occasionally on the site. Posters drawing attention to site safety, rescue and industrial health regulations will be made or obtained from the appropriate sources and will be displayed prominently in relevant areas of the site.</li> </ul>  | Agency             | Ауепсу  | mulcators  |
|                                  | Community health<br>and safety | All<br>construction<br>sites, Baise<br>University<br>campus, plus<br>nearby<br>residential<br>areas | <ul> <li>Prepare traffic control plan within and around the campus during construction, to be approved by Baise University management, and local traffic management administration. The plan shall include provisions for diverting or scheduling construction traffic to avoid peak traffic hours, main teaching activities such as exams, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signage.</li> <li>Designate staff members to control traffic during on-school and off-school hours.</li> <li>Ensure that all sites are secure, discouraging access through appropriate fencing, place clear signs at construction sites in view of the people at risk (including students, staff and nearby communities), warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc., and raising awareness on safety issues.</li> <li>Return machinery to its overnight storage area/position.</li> <li>In collaboration with the Baise University management, held a meeting prior to commencing construction to discuss issues associated with ensuring the safety of students and staff, as well as nearby communities in the vicinity of the construction site.</li> </ul> | Contractor, PIU-ES | LIS-ES; CSC,<br>PMO-SO, local<br>traffic police | Inspection<br>report of<br>environment<br>specialist,<br>report on<br>number of<br>incidents and<br>complaints in<br>annual EMRs |
|                                  | Utilities provision            | All   | Assess potential disruption to services and   | Contractor         | PIU-ES, LIS-ES,                                 | Annual EMRs  |

| Impact Factor /                         | Potential Impacts  |  |  | Implementation            | Supervision                                     | Monitoring   |
|---|--|--|--|---------------------------|---|--|
| Project Stage                           | and/or Issues  | Location                                   | Mitigation measures  | Agency                    | Ágency  | Indicators   |
|   | interruption   | construction<br>sites, nearby<br>areas     | <ul> <li>identify risks before starting construction.</li> <li>If temporary disruption is unavoidable, develop a plan to minimize the disruption and communicate the dates and duration in advance to all affected people, in conjunction with the Baise University management.</li> </ul>   |                           | CSC   |  |
| 9. Labor<br>standards and<br>rights     | Social protection of workers                                   | Not<br>applicable                          | <ul> <li>Contractors shall (i) provide equal pay for equal work, regardless of gender or ethnicity; (ii) provide the timely payment of wages; (iii) use local unskilled labor, as applicable, (iv) comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment, e.g. health, safety, welfare, and the workers' rights, and anti-trafficking laws; and (v) not employ child labor.</li> <li>Contractors shall maintain records of labor employment, including the name, ethnicity, age, gender, domicile, working time, and the payment of wages.</li> </ul> | Contractor                | ADB, LIS, PMO-<br>SO                            | Project<br>progress<br>reports   |
| 10. Campus<br>sustainability<br>program |  | Baise<br>University                        | Define a campus sustainability policy; develop a sustainability center with clear strategic objectives, sustainability programs, institutional structure, and terms of reference.  | CSPE, Baise<br>University | Executing agency,<br>ADB, LIS                   | Campus<br>sustainability<br>policy defined,<br>sustainability<br>center<br>operational |
| C. Operation Pha                        | se   | •  | · · ·  |                           | •   |  |
| 1. Wastewater                           | Inadequate<br>wastewater disposal                              | Baise<br>University                        | <ul> <li>Ensure completion of the associated onsite<br/>WWTP (2x1,000m<sup>3</sup>/d) by 2017.</li> <li>Properly operate and maintain the associated<br/>onsite WWTP to ensure both treatment load and<br/>effluent quality (Class-1A) meet the designed<br/>specifications.</li> <li>Ensure connection of all new buildings to on-site<br/>WWTP and to municipal sewer system (backup<br/>system).</li> </ul>   | Baise University          | Baise EPB, Baise<br>Public Sanitation<br>Bureau | First operation<br>phase EMR   |
| 2. Solid waste                          | Inappropriate<br>management of<br>non-hazardous solid<br>waste | Baise<br>University's<br>Chengbi<br>campus | <ul> <li>Provide adequate solid waste collection facilities<br/>in all buildings and on the campus.</li> <li>Promote segregation of waste through (i)<br/>provision of separate collection bins for paper,<br/>biodegradable waste, metallic waste, and other<br/>wastes; and (ii) provision of training and<br/>awareness raising for TVET staff and students.</li> <li>Reach agreement with waste collection service<br/>provider(s) for different types of waste.</li> <li>Regularly clean and disinfect waste collection</li> </ul>  | Baise University,<br>CSPE | Baise EPB                                       | First operation<br>phase EMR   |

| Impact Factor /<br>Project Stage | Potential Impacts<br>and/or Issues   | Location   | Mitigation measures  | Implementation<br>Agency                               | Supervision<br>Agency   | Monitoring<br>Indicators     |
|----------------------------------|--|--|--|--|---|------------------------------|
|                                  |  |  | facilities.  |  |   |                              |
| 3. Operational noise             | Inappropriate control<br>of noise  | Baise<br>University's<br>Chengbi<br>campus   | <ul> <li>Proper Installation and maintenance of noise and vibration control facilities on air conditioning and ventilation systems.</li> <li>All noise-emitting machinery and equipment in the onsite WWTP will be installed in sound-proof housing within rooms.</li> <li>Installation of ventilated sound insulation windows on the buildings along the boundaries of campus if needed.</li> </ul>   | Baise University                                       | Baise EPB   | First operation<br>phase EMR |
| 4. Indoor air pollution          | Caused by improper<br>decoration of<br>campus buildings                                  | Baise<br>University's<br>Chengbi<br>campus   | <ul> <li>Ensure the decoration materials are water-based<br/>or formaldehyde-free products.</li> <li>Conduct indoor environmental monitoring after<br/>completion of decoration works; and take remedy<br/>measures if the monitoring data exceed the<br/>national standard of GB50325-2001.</li> </ul>  | Baise University<br>(through sustainability<br>center) | Baise EPB   | First operation<br>phase EMR |
| 5. Laboratories                  | Risks to<br>environment, health<br>and safety from<br>inadequate<br>laboratory practices | Baise<br>University's<br>chemistry,<br>physics, and<br>biology<br>training<br>laboratories | <ul> <li>Define, implement and maintain a laboratory health and safety management plan for each laboratory in line with on national regulations and/or international best practice.<sup>42</sup> The plan will define (i) inventory of chemicals allowed for training purposes, (ii) chemicals storage and handling protocols, (iii) waste management plan, (iv) responsibilities of teachers and students, and (v) emergency response procedures, etc.</li> <li>All laboratories must be equipped with personal protective equipment and emergency equipment in compliance with PRC health and safety regulations.</li> </ul> | Baise University<br>(through Sustainability<br>Center) | Baise EPB   | First operation<br>phase EMR |
| 6. Greening and<br>landscaping   | Low vegetation<br>survival rate, poor<br>surface water quality                           | Baise<br>University's<br>Chengbi<br>campus   | <ul> <li>Regular inspection of campus vegetation.</li> <li>Regular monitoring of surface water quality in the manmade pond system.</li> <li>Avoid use of pesticides and as far as possible.</li> </ul>   | Baise University<br>(through sustainability<br>center) | Baise EPB,<br>Baise Forestry<br>Bureau                        | First operation phase EMR    |
| 7. Health and safety             | Campus health and safety   | TVET<br>classrooms,<br>workshops,<br>outdoor<br>areas                                      | <ul> <li>Ensure compliance with relevant health and safety regulations pertaining to ventilation, indoor air quality, lighting, noise, fire escape, etc.</li> <li>Enforce campus traffic management plan, ensure protection and promote non-motorized transport modes.</li> <li>Establish preparedness plan and operation plan under emergency conditions, such as fire, flood.</li> </ul>   | Baise University<br>(through sustainability<br>center) | Executing<br>agency,<br>occupational<br>health<br>authorities | First operation<br>phase EMR |

<sup>&</sup>lt;sup>42</sup> U.S. National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Department of Health and Human Services. 2006. School Chemistry Laboratory Safety Guide. Accessible from: <u>http://www.cpsc.gov//PageFiles/122344/NIOSH2007107.pdf</u>.

| Impact Factor /<br>Project Stage | Potential Impacts<br>and/or Issues | Location | Mitigation measures   | Implementation<br>Agency | Supervision<br>Agency | Monitoring<br>Indicators |
|----------------------------------|------------------------------------|----------|---|--------------------------|-----------------------|--------------------------|
|                                  |                                    |          | earthquake, wind, storm, water contamination, epidemic, air contamination, infestation, explosion |                          |                       |                          |
|                                  |                                    |          | etc.  |                          |                       |                          |

ADB = Asia Development Bank, BEMC = Baise environment monitoring center, BEPB = Baise Environmental Protection Bureau, CSC = construction supervision company, CSPE = campus sustainable planning expert, EHS = environment, health, and safety, EMP = environmental management plan, EMR = annual environment monitoring and EMP progress report, EMS = environment management system, EPB = environment protection bureau, GRM = grievance redress mechanism, IEE = initial environmental examination, LIS = loan implementation support, LIS-ES = loan implementation environmental consultants, m = meter, m<sup>2</sup> = square meter, m<sup>3</sup> = cubic meter, MEP = Ministry of Environmental Protection, MOF = Ministry of Finance, NDRC = National Development and Reform Commission, PIU = project implementation unit, PIU-ES = PIU environmental supervisor, PMO = project management office, PMO-SO = PMO safeguards officer, PPE = personal protection equipment, PRC = People's Republic of China, STI = sexually transmitted infections, TVET = technical vocational education and training, WWTP = wastewater treatment plant.

## D. Environmental Inspection and Monitoring Plan

18. The inspection and monitoring plan in the EMP will serve as the template for assessing the potential adverse impacts caused by the project components, and identifying adequacy of protection measures implemented.

19. The plan defines the items to be inspected and parameters to be monitored, the frequency of inspection and monitoring, and the location of sampling. The PIU-ES will be in charge of conducting regular inspections and organizing periodical environmental monitoring for noise, surface water, and air quality (to be conducted by the Baise EMC).

20. The PIU-ES will compile environmental inspection reports on a quarterly basis during construction. These reports will be shared with the contractors, and submitted to implementing agency (Baise University) and its PIU for information, as well as to the PMO-SO for review and appraisal. The PMO-SO will summarize the quarterly environmental inspection and monitoring results of the PIU-ES into the semi-annually project progress report prepared for ADB. More details on environmental inspection and monitoring will be included in the annual environmental monitoring and EMP progress reports prepared for ADB by the PMO-SO (with support of the LIS-ES). These will be disclosed on the ADB's project website (in English) and Baise University's website (in Chinese).

| Environmental   |   |   |
|---|---|---|
| Media/Issue   | Location, Parameters, and Monitoring Frequency  | Responsibility and Frequency  |
| Pre-construction Phase  | }   |   |
| Project readiness<br>(internal monitoring)                      | <b>Method:</b> Review of PMO, implementing agency, PIU, and contractors' readiness to implement the project and mitigation measures based on assessment of project readiness indicators.  | LIS-ES, once before construction  |
|   | Parameters: Readiness indicators (Table EMP-4)  |   |
| Construction Phase  |   |   |
| Soil erosion and<br>contamination<br>(internal monitoring)      | <ul> <li>Method and location: Visual inspection of the construction sites.</li> <li>Parameters: (i) adequacy of soil erosion prevention measures; (ii) adequacy of soil contamination prevention techniques; (iii) evidence of excessive soil erosion or soil contamination (based on site inspection checklist, Appendix 2), and in compliance with monitoring plan defined in WSCP (May 2010, Doc. No. Baise Shuibao-2010/13).</li> </ul> | Once every 10 days during peak<br>construction period by PIU-ES,<br>then monthly, and yearly by LIS-<br>ES  |
| Solid waste and wastewater                                      | Method and location: Visual inspection of construction sites  | PIU-ES – once every 10 days<br>during peak construction period  |
| management<br>(internal monitoring)                             | <b>Parameters:</b> (i) adequacy of solid and liquid waste<br>management, storage and containment system, and (ii)<br>presence of solid waste dumps and waste fires (based on site<br>inspection checklist, <b>Appendix 2</b> ).   | then monthly, and yearly by LIS-<br>ES  |
| Construction site<br>health and safety<br>(internal monitoring) | Method and location: Visual inspection and interviews with construction workers and contractors at construction sites.<br>Parameters: Site inspection checklist (Appendix 2).   | Once every 10 days during peak<br>construction period by PIU-ES,<br>then monthly, and yearly by LIS-<br>ES. |
| Community health<br>and safety<br>(compliance<br>monitoring)    | <ul> <li>Method and location: Visual inspection of the construction sites, informal interviews with TVET staff and students, and nearby residents.</li> <li>Parameters: (i) adequacy of construction site signage and fencing, (ii) adequacy of temporary noise mitigation measures, (iii) accidents involving public and workers; (iv) emergencies</li> </ul>  | Once every 10 days during peak<br>construction period by PIU-ES,<br>then monthly, and yearly by LIS-<br>ES. |

#### Table EMP-3: Environmental Monitoring and Inspection Plan

|  | and responses, and (v) public complaints about noise, air<br>pollution, construction site safety, and localized flooding |  |
|--|--|--|
| Air quality  | Method and location: Air quality monitoring, at least four   | Semiannually by Baise EMC  |
| (compliance  | points in the campus, around construction site, and at   |  |
| monitoring)  |  |  |
|  | Parameters: TSP, PM <sub>10</sub>  |  |
| Noise  | Method and location: At four points at boundary of   | Semiannually by Baise EMC  |
| (compliance<br>monitoring)   | construction site, and at least three points around at<br>boundaries of sensitive recentors                              |  |
| monitoring)  |  |  |
| Ourfeas weter  | Parameters: Leq dB(A)  |  |
| Compliance   | stream in the campus   | Semiannually by Balse EMC  |
| monitoring)  |  |  |
| Ormating Ormalati  | Parameters: NH <sub>3</sub> -N, SS, CODcr, coliform.   |  |
| Construction Completion  | on Phase   |  |
| Construction   | <b>Method:</b> For each civil work contract, construction completion   | Acceptance committee (including                                      |
| acceptance   | the project. EIA completion acceptance to be conducted by  | Quality Inspection Station, Baise                                    |
| (acceptance  | Baise EPB.   | Construction Bureau, Baise EPB)                                      |
| monitoring)  | Barameters: In accordance with national completion   | Baise EPB for EIA completion   |
|  | acceptance regulations (compliance with relevant building  |  |
|  | regulations and codes on building safety, energy-efficiency,   |  |
| Photovoltaic   | and others) and EIA regulation.  | Accontance committee (including                                      |
| Commissioning  | experts, prior to final payment of contract, within 2 months of  | licensed PV experts, Baise   |
| (acceptance  | installation completion.   | University, LDI, Baise Quality                                       |
| monitoring)  | Parameters: In accordance with national completion   | Inspection Station, Baise  |
|  | acceptance regulations, including but not limited to: checks of  | Construction Bureau, Baise EFB)                                      |
|  | the main components (communications, meteorological  |  |
|  | station, modules, wiring, inverters, interconnection, batteries,   |  |
|  | operating performance test.  |  |
| Operation Phase  |  |  |
| Campus management  | Method and location: New Chengbi campus, environment   | ADB, local EPB-once after one  |
| (general)  | audit to be arranged by ADB OD in consultation with local EPB  | year of operation (during review                                     |
| (internal monitoring)  |  |  |
|  | Parameters: DMF indicators; campus sustainability strategy;  | Baise University sustainability                                      |
|  | sustainability center; energy consumption.   | center (to include comprehensive                                     |
| Surface water  | Method and location: at two points in the artificial lake and  | Baise University sustainability                                      |
| (internal monitoring)  | stream in the campus.  | center, with support of Baise EPB                                    |
|  | Parameters: NH2-N TP SS CODcr coliform   |  |
| Wastewater treatment   | Method and location: Sampling of WWTP influent and   | Internal monitoring: Baise   |
| plant  | effluent (2 onsite WWTPs), assessment of compliance with   | University sustainability center                                     |
| (internal and compliance monitoring)   | noise and odor monitoring  | once a week, or as defined in the                                    |
| (internet in the second s |  | Waste management policy.   |
|  | Parameters: COD, BOD, NH4-N, TN, TP, SS, E. coli, dB(A),   | Compliance monitoring: Deise   |
|  |  | EPB, periodically (as regulated)                                     |
| Solid waste  | Method and location: Visual inspection of waste collection   | Internal monitoring: Baise   |
| (internal monitoring)  | and transfer station within campus.  | University sustainability center                                     |
|  | Parameters: Waste quantity presence of disease vectors   | (with involvement of students),<br>once a week, or as defined in the |
|  | malodorous gases, littering.   | waste management policy.   |

| Indoor air quality<br>(compliance<br>monitoring) | Method and location: Air quality monitoring in classrooms, dormitories, laboratories, and training facilities.<br>Parameters: As defined in national standard of GB50325-2001   | Compliance monitoring: Baise<br>EPB, periodically (as regulated)   |
|--|---|--|
| Photovoltaic system<br>(Internal monitoring)     | Methodandlocation:Regularvisualinspectionofphotovoltaicsystemcomponents(communications,meteorologicalstation,modules,wiring,inverters,interconnection, batteries, etc.);PV system monitoring system(centralized management and information center).Parameters:Solar radiation, various weather parameters,electricitygenerationfrom each power conditioner, batterystatus, etc. | Internal monitoring: Baise<br>University sustainability center<br>(with involvement of students),<br>continuously. |

ADB = Asia Development Bank, DMF = design and monitoring framework, EIA = environmental impact assessment, EMP = environmental management plan, EPB = environment protection bureau, LIS-ES = loan implementation environmental consultants, PCR = project completion report, PIU = project implementation unit, PIU-ES = PIU environmental supervisor, PMO = project management office, TVET = technical vocational education and training.

21. **Assessment of project readiness**. Before construction, the LIS-ES will assess the project's readiness in terms of environmental management based on a set of indicators (**Table EMP-4**) and report it to ADB, PMO, and implementing agency. This assessment will demonstrate that environmental commitments are being carried out and environmental management systems are in place before construction starts, or suggest corrective actions to ensure that all requirements are met.

|   | <b>.</b>  |            |    |
|---|---|------------|----|
| Indicator   | Criteria  | Assessment |    |
| EMP update  | The EMP was updated after detailed design, and approved by ADB  | Yes        | No |
| Compliance with loan covenants  | The borrower complies with loan covenants related to project design and environmental management planning           |            | No |
| Public involvement<br>effectiveness   | Meaningful consultation completed; GRM established with entry points  | Yes        | No |
| Environmental supervision in<br>place   | LIS-ES is in place, PIU-ES appointed, PMO-SO appointed  | Yes        | No |
| Bidding documents and<br>contracts with environmental<br>safeguards                             | Bidding documents and contracts incorporating the environmental activities and safeguards listed as loan assurances | Yes        | No |
| contractor readiness Site-EMPs prepared by contractors, reviewed and approved by PIU-ES, PMO-SO |   | Yes        | No |
| EMP financial support   | The required funds have been set aside to support the EMP implementation according to the financial plan.           | Yes        | No |

#### **Table EMP-4: Project Readiness Assessment Indicators**

ADB = Asia Development Bank, EMP = environmental management plan, GRM = grievance redress mechanism, LIS-ES = loan implementation environmental consultants, PIU-ES = project implementation unit environmental supervisor, PMO = project management office, PMO-SO = PMO safeguards officer.

Source: Environmental management plan of the domestic environmental impact statement.

#### E. Institutional Strengthening and Training

22. The capacity of the PIU, implementing agency, and the PMO's staff responsible for the EMP implementation and supervision will be strengthened. All parties involved in implementing and supervising the EMP must have an understanding of the goals, methods, and practices of project environmental management. The project will address the lack of capacities and expertise in environmental management through (i) institutional strengthening, and (ii) training.

23. **Institutional strengthening.** The capacities of the PMO, implementing agency, and PIU to coordinate environmental management will be strengthened through a set of measures:

(i) The appointment of a staff member within the PMO (PMO-SO) in charge of EMP

coordination, including GRM.

- (ii) The appointment of one national environmental consultant under the loan implementation consultancy to guide PMO and implementing agency in implementing the EMP and ensure compliance with ADB's Safeguard Policy Statement (SPS 2009).
- (iii) The appointment of an environment specialist by the PIU-ES to conduct regular site inspections and coordinate periodic air, surface water and noise monitoring.

24. **Training.** The executing agency, PMO, implementing agency, and PIU will receive training in EMP implementation, supervision, and reporting, and on the GRM (**Table EMP-5**). Training will be facilitated by the LIS-ES and Baise EPB with support of other experts under the loan implementation support.

|   |  |  | Duration and          |
|---|--|--|-----------------------|
| Training Topic  | Targeted Agencies  | Timing   | Costs                 |
| <b>EMP Implementation:</b> Roles and responsibilities, monitoring, supervision and reporting procedures, and review of experience (after 12 months) | PMO, implementing agency,<br>PIU, contractors  | Once prior to, and<br>once after one year of<br>project implementation | 2 x 1 day,<br>US\$500 |
| <b>GRM:</b> Roles and responsibilities, procedures, review of experience (after 12 months)  | PMO, implementing agency,<br>PIU, contractors<br>community representatives,<br>contractors | Once prior to, and<br>once after one year of<br>project implementation | 2x 1 day,<br>US\$500  |

#### Table EMP-5: Training Program

EMP = environmental management plan, GRM = grievance redress mechanism, PIU = project implementation unit, PMO = project management office, PMO = project management office. Source: Project preparatory technical assistance consultants.

## F. Environmental Reporting

25. **Project progress reports.** The executing agency will provide ADB with (i) project semiannual progress reports in a format consistent with ADB's project performance reporting system; (ii) annual project progress reports, including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for next 12 months; and (iii) a project completion report within 6 months of physical completion of the project.

26. The semiannual progress reports will also include a summary of EMP implementation status, results of inspections conducted by the PIU-ES, problems encountered during construction and operation, if any, and the relevant corrective actions undertaken.

27. **Annual environmental progress reports.** To ensure proper and timely implementation of the EMP and adherence to the agreed environmental covenants, the PMO shall submit to ADB yearly environmental progress reports, based on the semiannual inspection and monitoring reports of the LIS-ES. The LIS-ES will support the PMO in developing the annual reports. The report should confirm the project's compliance with the EMP and the PRC's environmental standards and regulations, and identify any environment related issues and necessary corrective actions. The performance of the contractors will also be reported on with respect to environmental protection and impact mitigation. The operation and performance of the project GRM, environmental institutional strengthening and training will also be included in the report. Table EMP-6 summarizes the reporting requirements.

|--|

| Report         | Frequency    | Purpose                                     | From   | То           |
|----------------|--------------|---|--------|--------------|
| Inspection and | Semiannually | Confirmation of contractors compliance with | PIU-ES | Contractors, |
| monitoring reports                         |              | EMP, presentation of monitoring results  |                      | IA, PMO, LIS-<br>ES |
|--|--------------|--|----------------------|---------------------|
| Project Progress Reports                   | Semiannually | General project progress, including summary of<br>EMP implementation                             | PMO                  | ADB                 |
| Annual Environmental<br>Monitoring Reports | Annually     | Adherence to Environmental Covenants and EMP, presentation of monitoring results, EMP work plan. | PMO, LIS-<br>ES, LIS | ADB                 |

ADB = Asia Development Bank, EMP = environmental management plan, LIS = loan implementation support, LIS-ES = loan implementation environmental consultants, PIU = project implementation unit, PIU-ES = PIU environmental supervisor, PMO = project management office.

Source: Project preparatory technical assistance consultants.

#### G. Mechanisms for Feedback and Adjustment

28. Based on environmental monitoring and reporting systems in place, the PMO, PIU, and PIS-ES shall assess whether further mitigation measures are required as corrective action, or improvement in environmental management practices are required. The effectiveness of mitigation measures and monitoring and inspection plans will be evaluated by a feedback reporting system. If the PMO, PIU, and PIS-ES identify a substantial deviation from the EMP, or if any changes are made to the project scope that may cause significant adverse environmental impacts or increase the number of affected people, then the PMO, PIU, and PIS-ES shall immediately consult ADB to identify EMP adjustment requirements.

#### H. Cost Estimates for Environmental Management

29. The total project budget for the project is approximately CNY 471.459 million (US\$ 76.66 million). The EMP related costs for the construction period are estimated in the domestic EIS at CNY 20.0 million (US\$ 3.25 million) of the total project budget including CNY 15.0 million (US\$2.44 million) for water and soil conservation cost (proposed in the project WSECP). Cost estimates for mitigation measures, environmental monitoring, public consultations, and capacity building are summarized in **Table EMP-7.** Construction completion and environment acceptance audits are expected to cost some CNY 200,000 (US\$32,500). Campus environment, health and safety management costs (indicative) are estimated at CNY 750,000 per year (US\$ 122,000).

30. Costs for environmental monitoring and inspection include salaries and consultancy fees for the PMO-SO, the LIS-ES and the PIU-ES, as well as costs for the environmental monitoring performed by the PIU-ES. The salary costs of the PMO-SO and LIS-ES will be covered by the executing agency; the salaries of the PIU-ES will be covered by the implementing agency. Air, water and noise monitoring costs will amount to approximately \$4,000 per year over 4 years. These expenses will be covered by the implementing agency.

| Phase                 | Main activities and measures  | Budget<br>(CNY10,000) |
|-----------------------|---|-----------------------|
| Construction<br>Phase | <b>Soil and water conservation</b> , including slope stabilization, open excavation area protection, re-vegetation and intercepting ditches for water and soil runoff control (as defined in the WSECP, Doc. No. Baise Shuibao-2010/13) | 1,500                 |
|                       | <b>Construction and domestic wastewater management</b> (installation of sedimentation tanks and temporary drains, installation of oil separators, construction of three steps septic-tanks in the campus                                | 73                    |
|                       | Construction waste management   | 10                    |
|                       | <b>Construction site environment, health and safety</b> (ambient air quality and dust control, occupational health and safety, access control, noise mitigation)  | 50                    |
|                       | Greening and landscaping including the landscaping maintenance in first operation   | 200                   |
|                       | vear  |                       |

#### Table EMP-7: Cost Estimates for Environmental Management Plan Implementation

| Phase            | Main activities and measures  | Budget<br>(CNY10.000) |
|------------------|---|-----------------------|
|                  | Indoor air quality control measures (avoid use of VOC emitting materials)                           | 13                    |
|                  | Kitchen and laboratory design (Installation of kitchen hoods, and ventilation &                     | 65                    |
|                  | purification system; laboratory hoods, and lab waste gas treatment system)                          |                       |
|                  | Noise mitigation (building design, including installation of noise and vibration control            | 70                    |
|                  | facilities and sound insulation windows)  |                       |
|                  | EMP training (twice in the first 2 year of construction)  | 1                     |
|                  | <b>Construction phase environment compliance monitoring</b> (air, surface water, noise)             | 9                     |
|                  | Construction phase environment internal monitoring/inspection (soil erosion and                     | 10                    |
|                  | safety, construction site safety)   |                       |
|                  | Total   | 2,000                 |
| Acceptance       | Environmental acceptance audit (check the configuration, installation and operation                 | 6                     |
| Phase            | performance of the environmental protection facilities against the related standards                |                       |
|                  | and codes. Construction completion audit, including building safety and energy-                     |                       |
|                  | Indoor environmental monitoring and mitigation after completion of decoration                       | 8                     |
|                  | works; and take remedy measures if the monitoring data exceed the national standard of GB50325-2001 | · ·                   |
|                  | Photovoltaic commissioning by an independent group of experts, prior to final                       | 6                     |
|                  | payment of contract, within 2 months of installation completion, in accordance with                 |                       |
|                  |   | 20                    |
| Operation Phase  | General campus management (landscaping solid waste collection and removal                           | <b>20</b><br>50/a     |
| operation r hase | wastewater treatment, traffic management, etc.)   | 50/4                  |
|                  | Environment monitoring/inspection (wastewater effluent quality, surface water                       | 4/a                   |
|                  | quality, air quality, noise, solid waste amount, re-vegetation survival rate, laboratory            |                       |
|                  | safety, campus traffic management, emergency preparedness and response, etc.)                       |                       |
|                  | Photovoltaic system operation and monitoring (regular visual inspection of                          | 20/a                  |
|                  | photovoltaic system components (communications, meteorological station, modules,                    |                       |
|                  | wining, inventers, interconnection, batteries, etc.); PV system monitoring system                   |                       |
|                  | (centralized management and information center)   | 1/0                   |
|                  | Total   | 75/a                  |

EMP = environmental management plan

Source: Domestic environmental impact statement report and project preparatory technical assistance consultants.

31. During project implementation, the budget will be adjusted based on actual requirements. Contractors will bear the costs of all mitigation measures during construction, which will be included in the tender and contract documents. Baise University will bear the costs related to mitigation measures during operation. Costs related to environmental inspection during construction will be borne by construction contracts. Training costs will be borne by the project as a whole.

#### EMP-Appendix 1: ENVIRONMENTAL SITE INSPECTION CHECKLIST ADB-financed Guangxi Baise Vocational Education Development Project

Note: This form is designed for use by the PIU-ES during site inspections and may not be exhaustive. Modifications and additions may be necessary to suit individual project components and to address specific environmental issues and mitigation measures.

| Project Component/co<br>Site Location: | nstruction Name: |
|--|------------------|
| Construction stage:                    |                  |
| Inspection Date:                       |                  |
| Inspection Time:                       |                  |
| Weather:                               |                  |
| Inspected by:                          |                  |

|              |   |     |    |      | Remarks (i.e. problem observed,  |
|--------------|---|-----|----|------|----------------------------------|
|              |   |     |    |      | and/or proposed                  |
| Insp         | ection Item   | Yes | No | N.A. | corrective/preventative actions) |
| Site         | -EMP, GRM, and Information Disclosure                         |     |    |      |                                  |
| 1.           | Has contractor appointed an environment supervisor and        |     |    |      |                                  |
|              | is the supervisor on-site?                                    |     |    |      |                                  |
| 2.           | Is site-EMP established?                                      |     |    |      |                                  |
| 3.           | Is information pertaining to construction disclosed at        |     |    |      |                                  |
|              | construction site (including construction period, contractor  |     |    |      |                                  |
|              | information, etc.)?   |     |    |      |                                  |
| 4.           | Is GRM disclosed at construction site?                        |     |    |      |                                  |
| Soil         | Erosion and Contamination                                     |     |    |      |                                  |
| 5. I         | las contractor established a site-specific water and soil     |     |    |      |                                  |
|              | conservation plan that incorporates the measures defined      |     |    |      |                                  |
|              | in the WSCP approved by Baise Municipal Water                 |     |    |      |                                  |
|              | Resource Bureau (Doc. No. Baise Shuibao-2010/13)?             |     |    |      |                                  |
| 6.           | Are intercepting ditches and drains constructed to prevent    |     |    |      |                                  |
|              | runoff entering construction sites, and divert runoff from    |     |    |      |                                  |
| -            | sites to existing drainage?                                   |     |    |      |                                  |
| 1.           | Are disturbed areas stabilized after earthworks have          |     |    |      |                                  |
| 0            | Ceased, and re-vegetated?                                     |     |    |      |                                  |
| ð.           | Are chemicals/hazardous products and waste stored on          |     |    |      |                                  |
| 0            | Interneable surfaces in secure, covered areas?                |     |    |      |                                  |
| 9.           | Is there evidence of oil spillage?                            |     |    |      |                                  |
| 10.          | chemical spillage readily accessible?                         |     |    |      |                                  |
| 11           | Are chemicals stored and labeled property?                    |     |    |      |                                  |
| 11.<br>Air ( |   |     |    |      |                                  |
| 12           | Are construction sites regularly watered?                     |     |    |      |                                  |
| 12.          | Are stockniles of dusty materials covered or watered and      |     |    |      |                                  |
| 10.          | cement debagging process undertaken in sheltered              |     |    |      |                                  |
|              | areas?  |     |    |      |                                  |
| 14.          | Are trucks carrying earth, sand or stone covered with         |     |    |      |                                  |
|              | tarps or other suitable cover to avoid spilling and dust?     |     |    |      |                                  |
| 15.          | Is equipment well maintained? (any black smoke                |     |    |      |                                  |
|              | observed, please indicate the plant/equipment and             |     |    |      |                                  |
|              | location)   |     |    |      |                                  |
| 16.          | Are there enclosures around the main dust-generating          |     |    |      |                                  |
|              | activities?   |     |    |      |                                  |
| 17.          | Does contractor regularly consult with the Baise              |     |    |      |                                  |
|              | University, students, as well as nearby residents to identify |     |    |      |                                  |
|              | concerns?   |     |    |      |                                  |

|      |  |          |    |      | Remarks (i.e. problem observed,  |
|------|--|----------|----|------|----------------------------------|
|      |  |          |    |      | and/or proposed                  |
| Insp | pection Item   | Yes      | No | N.A. | corrective/preventative actions) |
| 18.  | Was air quality monitoring conducted since the last  |          |    |      |                                  |
|      | inspection? If yes, present results. If no, indicate date of   |          |    |      |                                  |
|      | next monitoring campaign.  |          |    |      |                                  |
| 40   | Noise  | r –      |    |      |                                  |
| 19.  | location and equipment.  |          |    |      |                                  |
| 20.  | Does the contractor undertake regular equipment<br>maintenance, ensure compliance with relevant PRC<br>standard?                           |          |    |      |                                  |
| 21.  | Are sites for concrete-mixing and similar activities located at least 300 m from sensitive areas?  |          |    |      |                                  |
| 22.  | Is the CNP valid for work during restricted hours?   |          |    |      |                                  |
| 23.  | Do air compressors and generators operate with doors<br>closed?  |          |    |      |                                  |
| 24.  | Is idle plant/equipment turned off or throttled down?  |          |    |      |                                  |
| 25.  | Any noise mitigation measures adopted (e.g. use noise barrier / enclosure)?  |          |    |      |                                  |
| 26.  | Was noise monitoring conducted since the last<br>inspection? If yes, present results. If no, indicate date of<br>next monitoring campaign. |          |    |      |                                  |
| 27.  | Does contractor regularly consult with PIU, Baise  |          |    |      |                                  |
|      | University, students as well as nearby residents to identify   |          |    |      |                                  |
| Sur  | concerns related to holse?   |          |    |      |                                  |
| 28   | Did the contractor develop a spill management plan?  |          |    |      |                                  |
| 20.  | Are wastewater treatment systems being used and  |          |    |      |                                  |
| 20.  | properly maintained on site? (e.g. de-silting tank)  |          |    |      |                                  |
| 30.  | Is construction wastewater and domestic wastewater   |          |    |      |                                  |
|      | discharged to sewer systems (if possible), or are on-site  |          |    |      |                                  |
|      | treatment facilities provided to ensure compliance with  |          |    |      |                                  |
|      | effluent discharge standard?   |          |    |      |                                  |
| 31.  | Are there any wastewater discharged to the storm drains?   |          |    |      |                                  |
| 501  | a waste management   | r        | 1  |      |                                  |
| 32.  | housekeeping)  |          |    |      |                                  |
| 33.  | Are separate chutes used for inert and non- inert wastes?  |          |    |      |                                  |
| 34.  | Are separated labeled containers/ areas provided for<br>facilitating recycling and waste segregation?                                      |          |    |      |                                  |
| 35.  | Are construction wastes / recyclable wastes and general<br>refuse removed off site regularly?  |          |    |      |                                  |
| 36.  | Are chemical wastes, if any, collected and disposed of   |          |    |      |                                  |
|      | Health and Safety  | 1        | 1  |      |                                  |
| 37.  | Is safe supply of clean water and an adequate number of  |          |    |      |                                  |
| 20   | latrines provided for workers?   |          |    |      |                                  |
| 30.  | Is PPE provided for workers in accordance with relevant  | <u> </u> |    |      |                                  |
| 59.  | health and safety regulations?   |          |    |      |                                  |
| 40.  | Does the contractor have emergency response plan to take actions on accidents and emergencies?   |          |    |      |                                  |
| 41.  | Are clear signs placed at construction sites in view of the  |          |    |      |                                  |
|      | TVET students and staff as well as the public, warning   |          |    |      |                                  |
|      | people of potential dangers such as moving vehicles,   |          |    |      |                                  |
|      | hazardous materials, excavations etc., and raising   |          |    |      |                                  |
| 40   | awareness on safety issues?  |          |    |      |                                  |
| 4Z.  | Are an construction sites made secure, discouraging  | 1        | 1  |      |                                  |

| Insr | ection Item  | Yes | No | ΝΔ    | Remarks (i.e. problem observed,<br>possible cause of nonconformity<br>and/or proposed<br>corrective/preventative actions) |
|------|--|-----|----|-------|---|
|      | access through appropriate fencing?  | 100 |    | 11171 |   |
| 43.  | Are traffic control measures (speed control, access control) applied?  |     |    |       |   |
| 44.  | Are fire extinguishers / fighting facilities properly<br>maintained and not expired? Escape not blocked /<br>obstructed? |     |    |       |   |
| Veg  | etation  |     |    |       |   |
| 45.  | Is there any evidence of excessive destruction of existing vegetation where no construction activity is occurring?       |     |    |       |   |
| 46.  | Are disturbed areas properly re-vegetate after completion of civil works?  |     |    |       |   |
| Phy  | sical Cultural Resources   |     |    |       |   |
| 47.  | Are they any chance found relics? If yes, ensure appropriate measures taken to preserve them.                            |     |    |       |   |
| Othe | ers  |     |    | •     |   |
| 48.  | Any other problems identified or observations made?  |     |    |       |   |

Date, Name and Signature of Site Inspector

#### EMP-Appendix 2: Environmental Safeguard Clauses for Civil Works Contracts

1. The general environment, health and safety obligations of the Contractor within this Contract, without prejudice to other official provisions in force, include the following:

- The Contractor shall ensure that the construction and decommissioning of project facilities comply with (a) all applicable laws and regulations of the People's Republic of China (PRC) relating to environment, health and safety; (b) the Environmental Safeguards stipulated in ADB's Safeguards Policy Statement (2009); and (c) all measures and requirements set forth in the EMP (PAM, Appendix EMP).
- (ii) The Contractor shall establish a telephone hotline staffed at all times during working hours. Contact details shall be prominently displayed at the sites. The Contractor shall disseminate in timely manner information on the construction progress, including anticipated activities that might cause safety risk.
- (iii) The Contractor shall secure, where necessary, appropriate permits and licenses before undertaking the works.
- (iv) The Contractor shall prepare a construction site-EMP based on the measures defined in the EMP prepared for the project (PAM, Appendix EMP), and the measures defined in the water and soil conservation plan (WSCP) approved by Baise Municipal Water Resource Bureau (Doc. No. Baise Shuibao-2010/13).
- (v) The Contractor shall assign sufficient qualified staff to manage site-EMP implementation, and ensure adequate financial resources are available to implement the site-EMP throughout the construction period.
- (vi) The Contractor shall provide equal pay for equal work, regardless of gender or ethnicity; provide those they employ with a written contract; provide the timely payment of wages; use local unskilled labor, as applicable, comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment, e.g. health, safety, welfare and the workers' rights, and anti-trafficking laws; and not employ child labor. Contractors shall maintain records of labor employment, including the name, ethnicity, age, gender, domicile, working time, and the payment of wages.
- (vii) The Contractor shall take necessary precautions to avoid interruptions to water supply, wastewater collection, heating and other utility services during the civil works.
- (viii) The Contractor shall take appropriate sanctions against personnel violating the applicable specifications and provisions on environment, health and safety.
- (ix) The Contractor shall document, and systematically report to the implementing agency and its PIU, of each incident or accident, damage or degradation caused to the environment, workers or residents or their assets, in the course of the works.
- (x) The Contractor shall provide all relevant information about the EMP, as well as the Site-EMP to subcontractor/s and be responsible for their actions.
- (xi) The Contractor shall provide the implementing agency and the PIU with a written notice of any unanticipated environmental, health and safety risks or impacts that arise during implementation of the contract that were not considered in the EMP.

#### EMP-APPENDIX 3: TWO SAMPLE QUESTIONNAIRES RETURNED FOR BU'S ENVIRONMENTAL MANAGEMENT SURVEY

| Project) 亚行项目百色学院管理工作问誊调查表   | Who collects your waste:(organization)√_ Don't know<br>您的废弃物由谁收集;(组织) 不知道   |
|--|---|
|  | Where is it disposed: (location) Don't know   |
| Information on school campus   | 在哪里进行处理 (地点) 不知道  |
| 能学校/机构的名称和位置?  | Sanshed with service: Yes No<br>县否遗意其服务 择 否   |
| Response 回答: 百色学院, 百色市中山二路 21 号  | 6. Do you where your wastewater is being transported, treated and discharged?                                     |
| 2. How many students and school personnel are currently staying on this campus?  | 您是否知道学校的废水往何处输送、处理和排放?  |
| 目間在仪的学生和教职员工有多少了<br>Students 10491   | Discharged to nearby river:   |
| 学生   | 排放到附近的河流  |
| Faculty staff:   | Treated in on-site septic tank:   |
| Admin staff: 83  | 公規制化規模加加<br>Treated in central treatment plant:   |
| 行政人员   | 中央处理厂处理   |
| O&M staff: 66  | Other (specify).  |
| 运营入员<br>Others: 302 (specify) 陈时顺速入员(司机、由金银通机、由龙工作人机、保持人用制   | Don't know.   |
| 其他 具体描述  | 不知道   |
| 3. Do you know the size of the school campus and the building area?  | 7 De un heur an energy severe aller aller? If the tiket an energies manufate                                      |
| 参知道学校校园图积和建筑图积吗?<br>Size of campus: mu √ Don't know  | minimize energy consumption?是否有能源节约政策?如有,那么减少能源消耗的具体措施有   |
| 校园面积: 亩 不知道  | 些?  |
| Number of buildings: Don't know  | Despense 同葉、 有 如安林了前鲜水手 君師由来 书解打  |
| 建筑物的数量 不知道<br>Total floor area m2 J Don't know   | Reaponad 29 27 - 19, 30 x 30 1 Whenter, Whenter, Whent  |
| 总建筑面积 平方米 不知道  | 8. Do you have a waste management policy promoting waste reduction, reuse a                                       |
| Sector of the se | recycling? If yes, what are specific measures to reduce, reuse and recycle waste?                                 |
| Water, Wastewater, Solid Waste, Energy 水、污水、固体废弃物、能源   | 定省有度初當理的政策以幾少废物量,促近废物得利用和回收?如有,那么在减少废物量,<br>排挥利用和同收方面有哪些具体措施?   |
| 4. Do you know how much water, energy, waste and wastewater you consume/produc   | Response 回答:不清楚   |
| every year: 認知理事中的小,能源,反初种皮小的清耗/生产的数量更多大吗?   |   |
| Water consumption:m3 per year _√ Don't know  | Environment, Health and Safety System   |
| 用水量 立方米每年 不知道  | please shortly describe the main component of the policy. 您们学校是否有环境,卫生和安全   |
| Energy consumption:  | 面的政策?如有,请简要描述其主要组成部分。   |
| Non-hazardous waste:kg per year√_ Don't know   | and a second  |
| 无晝废料 公斤每年 不知道  | Response 回音: 7  |
| Hazardous waste:kg per year Don't know   | 10. Do you have established procedures for communicating relevant environment, heat                               |
| Wastewater: m3 per year Don't know   | and safety requirements and provisions to school students and employees?  |
| 慶水 立方米每年 不知道   | 是否有针对学生及员工在环境、卫生和安全方面对话的要求和规定了<br>vy Yes A No 否   |
| 5. Do you know by whom and where <b>solid waste</b> is being transported and discharged?   | 11. Do you have an environment management system for the school or campus? If ye                                  |
| 你走口知道国际成并仍由他仁带主龙门也还带译成;  |   |
| to serve any server a second sec   | a Laboratory patients of Yes # No *   |
| plages shortly describe the system 学校县亦有环接鲸理优系? 加有,请简要描述。  | c. 实验室安全  |
| and a second of a state of the second state of | d. Water supply quality assurance:  |
| Response 回答:不清差  | d 供水质量保证  |
| 17 Are relea anonaphilliples and authorities includes the second statement of  | e. wastewater conection and treatment ve res 走 No 否<br>e 污水收集与处理  |
| manager in charge of environment management, health and safety, clearly defined?   | f. Safety plans for laboratories  |
| 是否明确任务,责任和部们,包括指定专人负责环境管理,卫生和安全方面的工作?  | 「実驗室安全计划<br>」 Lange data want and the and the Alla 本  |
| Response 回答;有  | g 内atalous wase management res 定 vo 日<br>g 有害废弃物管理  |
| 13. Who is responsible for the following activities on your campus (indicate number of full<br>time or part time staff) 你的教服山地会考出下的活动(道明会图成美丽人员教费)   | h. Indoor air quality assurance: Yes 是 No 否   |
| and of part and addition of the state of the | h 室内空气质量保证<br>Motors 条件   |
| a. Indoor air quality control:   | NUCES WITE.   |
| 室内空气质量控制<br>h. Westewater collection and sewer maintenance   | 15. Do you have a fire safety plan for your school? 你们学校有消防安全计划吗?   |
| 度, wastewater conection and sewer maintenance  | _VYes 是No 否   |
| c. Solid waste collection and maintenance:   | NOIGS WYL   |
| 固体废物收集和维护  | 16. Do you have established emergency identification, preparedness and response                                   |
| d. Hazardous waste management  | procedures? 你们学校是否建立起了突发事件识别,防范和应对的程序?  |
| e. Laboratory safety:  | Notes 备注:   |
| 实验室安全  | Capacity Building 能力继续  |
| f. Campus maintenance (outdoor);   | 17. Are all employees/faculty/students whose work involves significant environment and safety                     |
| な 回難 伊 ( 変外)  a. School huilding maintenance (indoor)  | aspects competent by training, experience and/or education? 通过培训,经验积累和/或制<br>充, 法及受约束大环境及安保方面工作的所有凡工 夹纸 供出基本能就批样? |
| y Sonos Bonang mananana (moso).<br>学校建筑物维护(室内)   |   |
| h. Fire safety:  | Notes 备注:   |
| 清防安全<br>1. Electroid   | 18. Would you be interested to strengthen the environment, health and safety management                           |
| 1. Filst 8/3:  | system for your school instruction (元) 于以(作时在周围环境、上土中文体的管理体系定台等并<br>趣?  |
| j. Water supply safety and quality:  | Response 回答: 不感兴趣   |
| 供水安全和质量  | 19. Which aspects of environment, health and safety in your school/institution do you think                       |
| k. Emergency response:   | should be improved / 忽认为忠的学校 / 机构往环境,卫生和安保的哪些力面需要进一步改善?   |
| (. Others (please specify):  | Response 回答:: 特政策落实到实处  |
| 其他 (请描述)   | 20.Any other suggestions, recommendations, observations?其他意见、建议?  |
|  | Response 回答: 无<br>Name of Respondent (Signature) 母话老姑友,她女子 士 (之子)   |
| 14. Have you developed, implemented and documented operating procedures for activities   | Name of Respondent (Signature) X M & M & M & M & M  |
| associated with environment management: 在涉及环境管理的活动方面是否制定,实施并形成共同化的操作提取?  | Position of Respondent 受访者职位。职称、照门 百名了这行政科科大  |
| ON THE PLATENT PARTE (   | Man land lite   |
| a. Non-hazardous solid waste collection:Yes 是No 否  |   |
| B. 无壳的圆体质在物收集;   |   |
|  |   |
| b. Hazardous solid waste collection:   |   |
| b. Hazardous solid waste collection:√Yes 是No 否<br>b. 有害的固体废弃物收集  |   |

|   | Who collects your waste: (organization) _1 Don't know   |
|---|---|
| nformation on school campus   | Where is it disposed: (location) _1 Don't know  |
| 1. What is the name and rocation of your school/institutions /<br>您学校/机构的名称和位置?   | 在哪里进行处理 (地点) 不知聞  |
| Response 回答: 百色学院, 百色市中山二路 21 号   | Lange Contraction Lange |
| 2. How many students and achoot personnel are supporting topics on this approving   | 6. Do you where your wastewater is being transported, treated and discharged?   |
| <ol> <li>How many students and school personnel are currently staying on this campus?</li> <li>目前在校的学生和教职员工有多少?</li> </ol>  | 您是否知道学校的废水往何处输送,处理和排放?  |
| Students: 10491   | が放射附近的河流  |
| 学生  | Treated in on-site septic lank:   |
| Faculty staff:  | 在现场化费油处理<br>Transaction control transmost algorit   |
| Admin. staff: 83  | 中央处理广处理   |
| 行政人员  | Other (specify):  |
| O&M staff:66  | 其他(详细说明)<br>Danie (inner and inner  |
| 还是人员<br>Others: 302 (specify) 前时即读人员(司机、改杂管理员、食業工作人员、保证人员   | Talif   |
| 其他 具体描述   | 7. Do you have an energy conservation policy? If yes, what are specific mea   |
| 3. Do you know the size of the school campus and the building area?   | minimize energy consumption?是否有能源节约政策? 如有,那么减少能源清耗的具体   |
| 思知道学校校師開新和建筑開新得望?<br>Size of campus mu 1 Don't know   | Response 回答: : 不知道  |
| 校园面积; ៣ 不知道   | 8. Do you have a waste management policy promoting waste reduction, re  |
| Number of buildings:1_Don't know  | recycling? If yes, what are specific measures to reduce, reuse and recycle waste?<br>是否有废物管理的政策以減少废物量, 促进废物重利用和回收? 加有, 那么在减少废   |
| 超現物的数量<br>Total Boor area: m2 1 Don't know  | 进再利用和回收方面有哪些具体措施?   |
| 总建筑而积 平方来 不知道   | Response 回答:不知道   |
|   | 9. Does you campus or school have an environment, health and safety policy  |
| Water, Wastewater, Solid Waste, Energy 水, 朽水, 固体废弃物, 能源   | please shortly describe the main component of the policy.您们学校是否有环境,卫生   |
| 4. Do you know now much water, energy, waste and wastewater you consume/produever/<br>every year?但知道報任的水、能源、液物和废水的清訊/生产的教量基本大吗?   | 面的政策?如有,请简要描述其主要组成部分。   |
| A CONTRACT OF A | 10. Do you have established procedures for communicating relevant environme   |
| Water consumptionm3 per year _1_ Don't know   | and safety requirements and provisions to school students and employees?  |
| 「日本遺<br>Feerry consumption: kWh ner war 1 Don't know  | 是否有针对学生及员工在环境,卫生和安全方面对话的要求和规定?  |
| 能調測框 于Kat推挥 不知道   | 11. Do you have an environment management system for the school or campul   |
| Non-hazardous waste kg per year1_Don't know   | please shortly describe the system,学校是否有环境管理体系?如有,请简要描述。  |
| 无害废料 会斤每年 不知道<br>Marantous wasto  | Response 回答:不知道   |
| 有害垃圾 公斤部年 不知道   | 12. Are roles, responsibilities and authorities, including the appointment of<br>manager in charge of environment management health and safety, clearly defined?  |
| Wastewater:m3 per year _1 Don't know  | 是否明确任务,责任和部们,包括指定专人负责环境管理,卫生和安全方面的工作?   |
| 使水 立方米母年 不知道<br>5 Do you know by uttom and them and the set   | Response 回答: 不知道  |
| b) Do you know by whom and where solid waste is being transported and discharged?<br>你是否知道固体废弃物由谁在哪里进行运送和挂放?  | 13. Who is responsible for the following activities on your campus (indicate num  |
|   |   |
|   |   |
| me or part time staff):您的校园中谁负责以下的活动(说明全职或兼职人员数量)   |   |
| a. Indoor air quality control: 不 如  | 0.实验室安全   |
|   | d. Water supply quality assurance:是_Yes 是 No 否  |
| 室内空气质量控制  | d 供水质量保证  |
| b. Wastewater collection and sewer maintenance:_ 不 知  | e. Wastewater collection and treatment: _是_Yes 是 No 否   |
| · 小小小小小小小小小小小小  | ● 污水收集与处理   |
| c Solid waste collection and maintenance: X in  | f. Safety plans for laboratories:Yes 是No 否  |
| . Sono more concern and mandifiance /r yu   | 1实验室安全计划  |
| 固体废物收集和维护   | g. Hazardous waste management:Yes 是 No 否  |
| d. Hazardous waste management: 不 知  | g 有害废弃物管理   |
|   | h. Indoor air quality assurance:Yes 是 No 否  |
| 有海废物管理  | h室内空气质量保证   |
| e. Laboratory safety 1 30   | Notes 备注  |
| 常验室在今   | 15. Do you have a fire safety plan for your school? 你们学校有消防安全计  |
| f. Campus maintenance fouldoor): The an   | _是_Yes 是 No 否   |
|   | Notes 备注:   |
| 校园维护(室外)  | 16. Do you have established emergency identification, preparedness and  |
| g. School building maintenance (indoor): 不 刻  | procedures? 你们学校是否建立起了突发事件识别,防范和应对的程序?  |
|   | _是_Yes是No 否   |
| 学校建筑物维护 (室内)  | Notes 备注:   |
| n. Fire safety: 不如  | Capacity Building 能力建设  |
| 谢放左合  | 17. Are all employees/faculty/students whose work involves significant environment  |
| i First aid: 4  | aspects competent by training, experience and/or education? 通过培训, 经验移   |
| A First dtd1  | 育,涉及学校重大环境及安保方面工作的所有员工、老师、学生是否能够胜任?   |
| j. Water supply safety and quality: 37  | Yes 是 _ 是_ No 否   |
|   | Notes 备注:   |
| 供水安全和质量   | 18. Would you be interested to strengthen the environment, health and safety ma   |
| k. Emergency response: 近 町  | system for your school/institution?您对学校/机构在加强环境、卫生和安保的管理体   |
| and a second  | 應?  |
| 应该啊应  | Response 回答:  |
| 1. Oners (please specify)XXXXXX   | 19. Which aspects of environment, health and safety in your school/institution do   |
| PART AND AND PARTY  | should be improved?您认为您的学校/机构在环境。卫生和安保的哪些方面需要进一   |
| 4. Have you developed, implemented and documented operating procedures for activit  | Response 回答:  |
| ssociated with environment management: 在涉及环境管理的活动方面是否制定,实施非   |   |
| 以书面化的操作规程?  | 20.Any other suggestions, recommendations, observations?其他意见、谢迎?  |
| a. Non-hazardous solid waste collection:是_Yes 是No 否   | Response 回答 无   |
| a.无害的固体废弃物收集;   | Name of Respondent (Signature) 受访者姓名 (答字) 本 3 化图  |
| b. Hazardous solid waste collection: _是_Yes 是 No 否  | STIN  |
| b.有害的固体废弃物收集  | Position of Respondent 爱访者职位、职称、部门 艺士名 诗生 (D 红马毛)引  |
|   | UN4. 7210 MUK21   |
| c. Laboratory safety: 是Yes 是 No 否   |   |
| c. Laboratory safety: 분 Yes 분 No 중  |   |
| c. Laboratory safety: 是Yes 是 No 否   |   |
| c. Laboratory safety: 授 Yes 是 No 否  |   |
| c. Laboratory safety: 光 Yes 是 No 否3   | and the second sec  |

#### APPENDIX 2: CONSULTANT'S TERMS OF REFERENCE

#### A. Specific Tasks and Qualifications of Key Staff

1. Package 1: Multilevel Technical and Vocational Education and Training Capacity Building and Innovation

### a. International Management and Institutional Specialist/ Team Leader (10 Person-months)

1. **Qualifications.** At least a Master's degree in education, training, management or related disciplines.

2. **Experience.** At least 15 years' experience in TVET management and institutions. Knowledge and experience of international best practice in TVET is required. Previous experience in establishing multilevel TVET (MLT) systems across institutions is a requirement for this position. Experience in the PRC is desirable. Excellent written and spoken communication skills are essential.

- 3. **Responsibilities.** Key tasks are the following:
  - (i) Management of the team of international and national consultants providing inputs to the capacity building components of the project.
  - (ii) Undertake all aspects of the management and institutional specialist role with support from the deputy.
  - (iii) Manage the development of the architecture, aims, operation and information dissemination regarding the MLT system at Baise University and associated institutions.
  - (iv) Develop a communication and outreach strategy for the MLT system to provide timely and accurate information for all current and future stakeholders involved with the project.
  - (v) Develop the policy and guidelines for the MLT system's operation at Baise University.
  - (vi) Lead the review and development of management structures at Baise University, including the establishment of leading groups; the scope and operating procedures for the proposed TVET training center; and the proposed TVET association to be developed at Baise University.
  - (vii) Provide support to the deputy and other consultants in the performance of their roles within the project.
  - (viii) As team leader, guide, coordinate, and supervise the consulting team's inputs, and be responsible for preparing and finalizing all required reports and information updates.

### b. National Deputy Team Leader and School-industry Partnership Specialist (16 Person-months)

4. **Qualifications.** At least a Master's degree in education, training, management, or related disciplines. Communication in spoken and written English is essential.

5. **Experience.** At least 10 years' experience in TVET management and institutions. Experience in the PRC is essential.

#### 6. **Responsibilities.** Key tasks are the following:

- (i) Provide support and assistance for the team leader in the performance of the role and assume the leadership of the team during the team leader's absence.
- (ii) Undertake all aspects of the school-industry partnership specialist role with support from the team leader.
- (iii) Prepare policy and guidelines for school-industry partnerships development.
- (iv) Develop industry and employment related materials, including tracer studies, industry surveys, and reporting formats in conjunction with industry, Education Bureau, and HRSSB.
- (v) Provide project support for the Baise University employment management system through an active involvement in planning, implementation and review.
- (vi) Establish the guidelines for the Enterprise Education Facility (fund) to support small scale cooperative school-industry partnerships.
- (vii) Provide leadership in designing the entrepreneurship incubation program through presenting a review of best practice, organizing expert inputs and developing policy and guidelines to support the program's implementation.
- (viii) Provide support to the team leader and other consultants in the performance of their roles within the project.

### c. International Curriculum Development Specialists (Four Specialists, 15 Person-months)

7. The four international curriculum development specialists will be expected to cover the curriculum development inputs for the seven priority areas identified by Baise University as the focuses for course development in agreed majors (e.g. aluminum processing) and levels of courses (e.g. at SVS, vocational colleges and undergraduate levels. The four international curriculum consultants will be supported by seven national curriculum development consultants, each of whom will be a specialist in one of the priority areas. It is anticipated that the preschool education priority will be covered by one of the four international consultants and that the other three international consultants will each provide leadership and guidance for the national curriculum development consultants in two of the other six priority areas e.g. aluminum processing, engineering management, design, agriculture, tourism, and logistics.

8. **Qualifications.** At least a Master's degree in education and training or social science and **related** disciplines

9. **Experience.** At least 10 years' experience in curriculum design and development in TVET systems. Experience with the development of competency-based curriculum, instruction, and assessment in modular form and at different levels of TVET is essential. Specialized knowledge in several industry sectors is highly desirable.

10. **Responsibilities.** Key tasks for each consultant are the following:

- (i) Work in cooperation with the national curriculum development consultant(s) in the establishment of curriculum and related courses in priority sectors.
- (ii) Establish and review the capacity of the curriculum working group(s) at Baise University to develop a competency-based approach (CBA) to designing and documenting curriculum in the designated priority areas.
- (iii) Provide training for the curriculum working groups in the curriculum model and the technical and employability skills required for inclusion in pilot courses.
- (iv) Develop modular courses at agreed levels in seven priority areas.

- (v) Devise teaching and learning support strategies and materials for teachers and students.
- (vi) Undertake consultation and field testing of curriculum documents and support strategies with key stakeholders.
- (vii) Develop and conduct a professional development program for pilot schools on:
  - a. Competency-based approach to learning (curriculum, instruction, and assessment).
  - b. Teaching, assessment and reporting strategies and materials to enhance student learning in specific majors and courses in priority sectors.
  - c. Learning pathways, course linkages within and across institutions.
  - d. Details of the pilot program.
- (viii) Conduct workshops for staff at Baise University (and associates) in (a) CBA, and
   (b) quality assurance as it applies to curriculum, qualifications development, certification, and assessment (i.e. verification processes).
- (ix) Provide exemplars of courses for use in adult education (migrant worker) based on the same approach used for the pilot programs (but emphasizing adult learning styles).

#### 2. Relevant Equity Issues

11. **Curriculum** development must avoid presentation of and participation in activities in gender, socioeconomic, and cultural group stereotypes. Special provision needs to be made in materials, suggested pedagogy and support strategies for students with disabilities and learning difficulties.

#### 3. Environmental Issues

12. **Curriculum** development and implementation must integrate environmental issues associated with the production of the courses. This includes using an integrated approach to addressing alternative energy and low carbon solutions (e.g. the photovoltaic power generation system, the high-efficient heat pump air conditioning and hot water system) highlighted in the campus development. Consideration should also be given to pollution prevention and abatement, resource conservation and reuse, waste reduction, recycling and reuse, occupational health and safety issues (OH&S).

#### d. National Curriculum Development Specialists (Seven Specialists— One for Each of the Designated Priority Sectors, 46 Person-months)

13. The four international curriculum development specialists will be expected to cover the curriculum development inputs for the seven priority areas identified by Baise University as the focuses for course development in agreed majors (e.g. aluminum processing) and levels of courses (e.g. at SVS, vocational college, and/or undergraduate levels. The four international curriculum consultants will be supported by seven national curriculum development consultants, each of whom will be a specialist in one of the priority areas. It is anticipated that the preschool education priority will be covered by one of the four international consultants and that the other three International consultants will each provide leadership and guidance for the national curriculum development consultants in two of the other six priority areas e.g. aluminum processing, engineering management, design, agriculture, tourism, and logistics.

14. Qualifications. At least a Master's degree in education and training or social science and related disciplines and dual qualifications that relate to at least one of the designated priority sectors for curriculum development.

15. Experience. At least 10 years' experience in curriculum design and development in TVET systems. Experience with the development of competency-based curriculum, instruction, and assessment in modular form and at different levels of TVET is highly desirable. Specialized knowledge and current experience in one industry sector is essential.

- 16. Responsibilities. Key tasks for each consultant are the following:
  - (i) Work in cooperation with the international curriculum development consultant in the establishment of curriculum and related courses in a priority sector.
  - (ii) Assist and facilitate training for the curriculum working groups in the curriculum model and the technical and employability skills required for inclusion in pilot courses.
  - (iii) Develop modular courses at agreed levels in seven priority areas.
  - (iv) Devise teaching and learning support strategies and materials for teachers and students.
  - (v) Undertake consultation and field testing of curriculum documents and support strategies with key stakeholders.
  - (vi) Develop and conduct a professional development program for pilot schools on:
    - a. competency-based approach to learning (curriculum, instruction, and assessment);
    - b. teaching, assessment, and reporting strategies and materials to enhance student learning in specific majors and courses in a priority sector;
    - c. develop learning pathways: course linkages within and across institutions; and
    - d. provide details of the pilot program to relevant stakeholders
  - (vii) Facilitate workshops for staff at Baise University (and associates) in (a) CBA, and
     (b) quality assurance as it applies to curriculum, qualifications development, certification, and assessment (i.e. verification processes).
  - (viii) Provide exemplars of courses for use in adult education (migrant worker) based on the same approach used for the pilot programs (but emphasizing adult learning styles).

#### 4. Relevant Equity Issues

17. Curriculum development must avoid presentation of and participation in activities in gender, socioeconomic, and cultural group stereotypes. Special provision needs to be made in materials, suggested pedagogy and support strategies for students with disabilities and learning difficulties.

#### e. International Teacher Training Specialist (4 Person-months)

18. **Qualifications.** At least a Master's degree in education and training or social science and related disciplines.

19. **Experience.** At least 10 years' experience in TVET teacher education that includes both pre-service and in-service training levels. Experience with the development of competency-based curriculum, instruction, and assessment in modular form and at different levels of TVET is highly desirable. Specialized knowledge and current experience in at least one industry sector is essential

- 20. Responsibilities. Key tasks are the following:
  - (i) Develop the core teacher training program through (a) establishing a train-thetrainer program for selected Baise University staff, and (b) assisting with the development of the contract for the international/domestic training program of core teachers.
  - (ii) Develop the model for the TVET training center at Baise University to incorporate both pre-service and in-service programs in TVET teacher education, provide policy and guidelines on required staffing profile for the center, initial training program (mainly project activities), the data system, equipment and materials, and funding arrangements.
  - (iii) Provide policy advice for the revised staff training and staff incentive plans (including quality assurance arrangements), upgrading and formalizing of teachers' dual qualifications, work shadowing, and teacher exchange opportunities.
  - (iv) Develop, through modelling and collaborative teaching strategies, classroom teachers' pedagogical skills, particularly with respect to student centered learning strategies.
  - (v) Provide advice on the development of the contract for the leadership program, through sharing of TVET knowledge, experience, and possible resources.
  - (vi) Co-present (with curriculum development consultants) workshops on teaching and learning to support the project initiatives in curriculum development, CBA, and enterprise education.

#### f. National Teacher Training Specialist (8 Person-months)

21. **Qualifications.** At least a Master's degree in education and training or social science and related disciplines. Communication in spoken and written English is essential.

22. **Experience.** At least 10 years' experience in TVET teacher education, preferably at both pre-service and in-service levels. Experience with training in competency-based curriculum, instruction, and assessment in modular form and at different levels of TVET is highly desirable. Specialized knowledge and current experience in one industry sector is essential.

#### 23. **Responsibilities.** Key tasks are the following:

- Assist with the development of the core teacher training program through (a) establishing a train-the-trainer program for selected Baise University staff, and (b) assisting with the development of the contract for the international and/or domestic training program of core teachers.
- (ii) Assist with the development of the model for the TVET training center at Baise University to incorporate both pre-service and in-service programs in TVET teacher education, provide policy and guidelines on required staffing profile for the center, initial training program (mainly project activities), the data system, equipment and materials, and funding arrangements.
- (iii) Provide policy advice for the revised staff training and staff incentive plans (including quality assurance arrangements), upgrading and formalizing of

teachers' dual qualifications, work shadowing, and teacher exchange opportunities.

- (iv) Develop, through modelling and collaborative teaching strategies, classroom teachers' pedagogical skills, particularly with respect to student centered learning strategies.
- (v) Provide advice on the development of the contract for the leadership program, through sharing of TVET knowledge, experience, and possible resources.
- (vi) Co-present (with curriculum development consultants) workshops on teaching and learning to support the project initiatives in curriculum development, CBA, and enterprise education.

## g. International Entrepreneurship (Enterprise) Education Specialist (1 Person-month)

24. **Qualifications.** At least a Bachelor's degree in education and training or social science, and related disciplines (e.g. microfinancing of small scale projects).

25. **Experience.** At least 10 years' experience in curriculum design and development in TVET systems. Specialized knowledge in the theory and practice related to enterprise education is essential. Experience with the development of competency-based curriculum, instruction, and assessment in modular form and at different levels of TVET is essential.

26. **Responsibilities.** The consultant is responsible for supporting TVET institutions in pilot **programs** through advice and professional development in the area of entrepreneurship (enterprise) education. This includes the provision of curriculum development, policy advice and professional development on enterprise education strategies. It also includes involvement in developing and implementing the pilot courses in selected majors in priority sectors so that teachers are able to foster enterprising behaviors and skills in their students.

- 27. With the national entrepreneurship education specialist, specific responsibilities include:
  - (i) Develop curriculum strategies and policy support for the implementation of enterprise education within the different levels of Baise University courses.
  - (ii) Assist with the development of guidelines for the enterprise education facility to be allocated to joint education-industry projects.
  - (iii) Provide advice and contribute policy suggestions and best practice examples to the development of the entrepreneurship incubation program.
  - (iv) Provide consultancy services to staff in pilot schools regarding contemporary practice related to the implementation of enterprise education.
  - (v) Liaise, collaborate, and negotiate with key government and industry stakeholders to ensure that enterprise education curriculum strategies and policy advice meets their requirements.
  - (vi) Support schools in their implementation of enterprise education initiatives through access to advice and to a range of professional development opportunities.
  - (vii) establish local agreements to facilitate enterprise education opportunities for schools and their communities and where possible, link this to formal TVET courses.

(viii) Arrange and facilitate a presentation of successful practice and projects using the enterprise education facility to provide ideas for further enterprise education projects.

#### h. National Entrepreneurship (Enterprise) Education Specialist (4 Person-months)

28. **Qualifications.** At least a Bachelor's degree in education and training or social science and related disciplines (e.g. micro-financing of small scale projects). Communication in spoken and written English is essential.

29. **Experience.** At least 10 years' experience in curriculum design and working within a TVET system. Knowledge of the theory and practice related to entrepreneurship curriculum strategies is highly desirable. Experience with the development of competency-based curriculum, instruction, and assessment in modular form and at different levels of TVET is highly desirable.

30. **Responsibilities.** The consultant is responsible for supporting TVET institutions in pilot programs through advice and professional development in the area of entrepreneurship (enterprise) education. This includes the provision of curriculum development, policy advice and professional development on enterprise education strategies. It also includes involvement in developing and implementing the pilot courses in selected majors in priority sectors so that teachers are able to foster enterprising behaviors and skills in their students.

- 31. With the international enterprise education specialist, specific responsibilities include:
  - (i) Develop curriculum strategies and policy support for the implementation of enterprise education within the different levels of Baise University courses.
  - (ii) Assist with the development of guidelines for the enterprise education facility to be allocated to joint education-industry projects.
  - (iii) Provide advice and contribute policy suggestions and best practice examples to the development of the entrepreneurship incubation program.
  - (iv) Liaise with staff in pilot schools regarding contemporary practice related to the implementation of enterprise education.
  - (v) Liaise, collaborate and negotiate with key government and industry stakeholders to ensure that enterprise education curriculum strategies and policy advice meets their requirements.
  - (vi) Support schools in their implementation of enterprise education initiatives through access to advice and to a range of professional development opportunities.
  - (vii) Assist with the development of local agreements to facilitate enterprise education opportunities for schools and their communities and where possible, link this to formal TVET courses.
  - (viii) Arrange and facilitate a presentation of successful practice and projects using the enterprise education facility to provide ideas for further enterprise education projects.

#### i. National School-industry Specialist (6 Person-months)

32. **Qualifications.** At least a Master's degree in education and training or social science and related disciplines; with dual qualifications that relate to at least one of the designated priority sectors for curriculum development. Communication in spoken and written English is essential.

33. **Experience.** At least 10 years' experience in working in establishing education-industry linkages and cooperative arrangements is essential; curriculum and staff development experience is highly desirable; and experience with industry and employment survey techniques is desirable.

- 34. Responsibilities. Specific tasks include:
  - (i) Work cooperatively with the national deputy team leader on all aspects of school-Industry partnerships.
  - (ii) Prepare policy and guidelines for school-industry partnerships development.
  - (iii) Develop industry and employment related materials including tracer studies, industry surveys, and reporting formats in conjunction with industry, education bureau, and HRSSB.
  - (iv) Provide project support for the Baise University employment management system through an active involvement in planning, implementation, and review.
  - (v) Establish the guidelines for the enterprise education facility (fund) to support small scale cooperative school-industry partnerships.
  - (vi) Provide support for the enterprise education consultants in designing the entrepreneurship incubation program through presenting a review of best practice, organizing expert inputs, and developing policy and guidelines to support the program's implementation.
  - (vii) Provide support to the team leader and other consultants in the performance of their roles within the project.
  - (viii) Assist in the development of policy and guidelines for the establishment of Baise University leading groups to promote greater school-industry involvement and partnerships;

#### j. National Regional Cooperation Specialist (2 Person-months)

35. **Qualifications.** At least a Master's degree in education and training or social science and related disciplines. Communication in spoken and written English is essential.

36. **Experience.** At least 10 years' experience designing and running training programs for adult learners are essential: highly developed research skills are also essential: experience in developing memorandums of understanding written and contractual agreements is highly desirable.

37. **Responsibilities.** With support from the team leader and deputy:

- (i) Provide advice on the staff profile for the selection of the regional coordination management team.
- (ii) Develop and deliver a training program for the regional coordination management team as preparation for developing and implementing regional cooperation activities.
- (iii) Provide advice on the extension opportunities for the Baise University language program.
- (iv) Organize a workshop and resource person (people) for the adoption of Asia-Pacific Economic Cooperation standards (initially in hospitality and tourism).
- (v) Participate in project activities (especially CBA, teacher training, entrepreneurship, and priority area pilots) to build knowledge of Baise University programs that could be adapted for wider distribution through regional cooperation partnerships and agreements.

(vi) Undertake research on emerging priorities for the region and report this through a seminar.

#### 5. Package 2: Project Implementation Start-up Support

## k. National Contract Management and Procurement Specialist (3 Person-months)

38. At least a Master's degree in project management, economics or finance. The specialist shall have a minimum of 5 years of experience in procurement, contract management, and project management. The specialist must have ADB or World Bank project procurement experience. The specific tasks may include:

- (i) Assist the executing and implementing agencies to carry out procurement work on civil work, equipment purchase and installation, consulting services, and other contracts in accordance with PRC and ADB policies and procedure requirements.
- (ii) Provide technical supports in design review, bill of quantities; and bidding document review, technical specification review, and other procurement documents review. Provide bidding and procurement process assistance, coordinate with bidding company and other involved agencies; provide assistance in bids review and bid evaluation, bid evaluation report preparation, and other bidding related tasks.
- (iii) Provide training to the executing and implementing agencies, design institute, contractors, construction supervision companies on ADB procurement, and contract management policies and procedures.
- (iv) Provide project implementation support to the executing and implementing agencies on project preparation and project implementation, assist the executing and implementing agencies to facilitate communication, coordination with ADB, government agencies, design institute, tendering company, and other relevant parties.

#### 6. Package 3: Project Management Support

#### I. International Institutional and Project Performance Management System Specialist/Team Leader (4 Person-months)

39. The team leader shall be a registered professional engineer with a post graduate degree and a minimum of 10 years of experience in civil engineering and construction projects financed by ADB or World Bank. The specialist shall take overall leadership to ensure the successful management and implementation of the project. Specific tasks include:

- (i) Develop detailed work plan including the specialist input schedule for the project implementation and update the work plan periodically based on the project implementation progress.
- (ii) Develop and establish the project management system to manage and monitor the project implementation progress. Prepare and submit project management manual for approval.
- (iii) Develop and establish contract management system to manage and monitor the procurement process and the implementation of the contracts. Prepare and submit project contract management manual.

- (iv) Coordinate with the financial specialists to develop and establish a financial management and disbursement management system. Prepare and submit project financial management manual.
- (v) Coordinate with team specialists to organize specialist inputs base on the project implementation progress and project development needs. Provide coordination among team specialists, ADB, the executing and implementing agencies, and other stakeholders to facilitate the implementation of the project.
- (vi) Take overall responsibility to coordinate preparing and submitting all deliverables including progress report, monitoring reports, semiannual and annual reports, project completion report, etc.
- (vii) Develop capacity development and training plan, coordinate, and carry out capacity development and training.
- (viii) Monitor overall project progress, contract management, safeguards related issues and plans, social and gender issues related targets and activities, and the project's development impacts through the PPMS.
- (ix) Assist the executing agency to engage qualified external monitors timely in accordance with ADB policies and procedures.

#### m. National Civil Engineer/Deputy Team Leader (20 Person-months)

40. The specialist shall be a registered civil engineer with a minimum of 10 years of experience in civil and construction projects. The specialist shall take a leading role to work with the team leader to provide overall project management and coordination for the project implementation. The specific tasks may include:

- (i) Work with the team leader to provide day to day project management and coordination for the project implementation including communication among the executing and implementing agencies, PIU, contractors, and other project entities.
- (ii) Provide overall guidance to project-wide construction supervision, contract management, financial and disbursement management, conduct regular site inspections and discussions with contractors to assist the implementing agency and PIU for construction supervision.
- (iii) Assist the team leader to coordinate among the team specialists to supervise tendering and contracting process.
- (iv) Assist the executing and implementing agencies, and PIU for contract management by keeping good records of awarded contracts as well as proposed procurement packages, analyzing needs of contract variations and issues arising from civil works construction and goods installment, and controlling overall disbursement and residual loan progress.
- (v) Assist team leader to coordinate with team specialists for their inputs base on the project implementation progress and project development needs. Provide coordination among team specialists, ADB, executing and implementing agencies and other stakeholders to facilitate the implementation of the project.
- (vi) Work with team leader and responsible to coordinate preparing and submitting all deliverables including progress report, monitoring reports, semiannual and annual reports, project completion report, etc.
- (vii) Monitor overall project progress, contract management, safeguards related issues and plans, social and gender issues related targets and activities, and the project's development impacts through the PPMS.

#### n. National Procurement Specialist ( 6 Person-months)

41. The procurement and contract management specialists shall have academic degrees in economics, finance or other relevant area and a minimum of 8 years of experience in procurement and contract management in civil and construction projects. The procurement specialist will be responsible to provide technical and management supports for bidding document review, procurement assistance, contract bid review and evaluation, and other procurement related tasks. The specific tasks may include:

- (i) Assist the executing and implementing agencies to carry out procurement on civil work, equipment purchase and installation, consulting services, and other contracts in accordance with PRC and ADB policies and procedure requirements.
- (ii) Provide technical supports in design review, bill of quantities, and bidding document review, technical specification review, and other procurement documents review. Provide bidding and procurement process assistance, coordinate with bidding company and other involved agencies, provide assistance in bids review and bid evaluation, bid evaluation report preparation, and other bidding related tasks.
- (iii) Develop contract management system and provide contract management assistance, including procurement plan updating, contract award and disbursement monitoring and management, procurement planning and projection, and other contract management tasks.
- (iv) Provide inputs for contract management and procurement to progress reports, project midterm and completion reports, and other project required reports.
- (v) Assist the team leader to coordinate among the team specialists to provide project implementation support on technical review, procurement documents review and contract variation requests review, due diligence report, contractor's claims and other project management support.
- (vi) Provide input for the training and capacity development, coordinate with the team leader and other team specialists to carry out training program, and provide support to the capacity development activities.

## o. Financial Management Specialist (International, 1 Person-month; National, 4 Person-months)

42. The international and national financial specialist shall have at least Bachelor degrees in finance, economics or other relevant area and a minimum of 10 years, and 8 years of experience in civil and construction projects. The financial specialist team will be responsible to provide financial and economic supports for the project implementation in compliance of ADB and domestic requirements on financial management, finical and economic analysis, disbursement, and other financial and economic tasks. The specific tasks may include:

- (i) Assist the executing and implementing agencies to develop financial management system, financial management plan, disbursement plan and projection; work with team leader to prepare and submit project financial management manual.
- (ii) Assist the executing and implementing agencies to establish project accounting and disbursement system to comply with ADB disbursement requirements and domestic financial management and finical annual auditing requirements; provide assistance in accounting management and disbursement processing, annual auditing and other financial related tasks.

- (iii) Provide assistance to review the executing and implementing agencies financial statements and provide comments to meet ADB requirements.
- (iv) Assist the executing and implementing agencies to improve the accounting system, especially to address the financial auditing requirements in compliance with the national policies and requirement, provide assistance to complete annual auditing process and other financial management requirements.
- (v) Provide the update economic assessment and analysis for the midterm review and project completion report and to provide the updated economic analysis results for ADB.
- (vi) Provide input of financial and economic aspect to progress report, midterm report, project completion report, and other project required documents.
- (vii) Assist the team leader to coordinate among the team specialists to provide project implementation support on technical review, procurement documents review and contract variation requests review, due diligence report, contractor's claims and other project management support.
- (viii) Provide support for carrying out capacity building training, and provide management support to the capacity development activities. Develop training program and conduct training on (a) ADB's disbursement procedure and financial management (including financial audit) and project financial management, (b) organizational financial management and financial audit system, and (c) public financial management.

#### p. National Social and Gender Development Expert (6 Person-months)

43. The national social development and gender expert will have a university degree in sociology, anthropology, or social sciences with minimum of 8 years of experience in gender and social impact assessment, preferably within the context of education and training projects. In addition, the experts much be fully familiar with the requirements of ADB's social dimensions policies (gender, poverty, labor, and indigenous peoples) and be able to demonstrate previous experience in successful practical application of these policies during previous project assignments.

44. The social development and gender expert will provide technical support to both the MLT capacity building team as well as the project management team in ensuring adherence to the principles of gender equality and social inclusion in all project related actions, particularly with regards to ADB gender mainstreaming requirements and policies. The expert will be responsible for implementing the social and gender action plan (SGAP), monitoring and regularly reporting the progress made in SGAP implementation, and assessing and documenting gender equality results of the project. More specifically, the consultants will perform the following tasks:

- (i) Review the project SGAP prepared during project design together with the PMU in the executing agency, implementing agency, and other key stakeholders to understand and explain the objectives behind each action.
- (ii) Develop a detailed SGAP implementation schedule and establish an implementation and reporting mechanism.
- (iii) Conduct training on gender awareness and the project SGAP to all PMU staff and other relevant stakeholders at the outset of the project implementation.
- (iv) Collect sex and ethnicity disaggregate data on student enrollment, graduation, employment per priority majors. Conduct gender analysis to facilitate gender inputs to employment information management system, student tracer studies, and industry survey system and research actions. Conduct relevant studies to

analyze gender related disparity in priority majors and gender impacts in new economy.

- (v) Develop gender responsive information, education and communication materials and assist the executing and implementing agencies to design and conduct public education campaigns identified under social and gender action plan (SGAP).
- (vi) Provide social and gender inputs to progress report, midterm report, project completion report, and other project required documents.
- (vii) Working with resource persons, review competency based curriculum, including that for entrepreneurship and employment skills to ensure adherence to principles of gender equality and social inclusion.
- (viii) Develop guidelines for measures to prevent, report, and respond to sexual harassment and support the executing and implementing agencies in implementing such measures.
- (ix) Review all policies and guidelines for teacher training and pedagogy reform from social and gender perspective and provide concrete recommendations.
- (x) Support the development of a module covering gender equality and social inclusion (gender responsive teaching techniques, strategies to break gender stereotypes of different majors/occupations etc.).
- (xi) Facilitate development of implementation guidelines for enterprise education facility highlighting the principles of equal access and nondiscrimination on the basis of sex and ethnicity.
- (xii) Support the establishment of a speaker series to introduce male and female role models from varied professional background.
- (xiii) Establish career guidance and mentoring session linking female students with female faculty/professional women.
- (xiv) Develop criteria and support the executing and implementing agencies to set up an annual gender recognition award for industry partners who have taken steps to reduce gender inequality in workplace or to promote women in non-traditional sectors.
- (xv) Review construction plan of new campus and make regular site visits to ensure gender sensitive living and working conditions are implemented (separate male and female dormitories, separate male and female latrines in campus facilities, improved safety measures at night such as security cameras).
- (xvi) Provide support for carrying out capacity building training, and provide management support to the capacity development activities. Provide training on proper implementation of SGAP and related ADB requirements.

#### q. National Environmental Expert (5 Person-months)

45. The national environmental specialist shall have at least a Master's degree in environmental management or other relevant discipline and minimum of 10 years' experience in environment management plan (EMP) implementation coordination for construction projects. The environmental specialist will be responsible to provide technical and management support to the implementing agency, including initial environmental examination (IEE) and EMP implementation, monitoring and supervision coordination, and other environmental protection related tasks. The environment specialist will support the implementation of the EMP, including:

(i) Assess the project outputs' environmental readiness prior to implementation based on the readiness indicators defined in the EMP.

- (ii) Update the EMP including mitigation measures, monitoring plan, institutional arrangements, and training plan as necessary, to reflect the final project scope and detailed design, including submission to ADB for review and disclosure.
- (iii) If required, update the IEE report for changes in the project during detailed design (for example if there is a scope change) that would result in adverse environmental impacts not within the scope of the approved IEE.
- (iv) Support the executing and implementing agency, BPMO, PIU, and tendering companies in preparing bidding documents; ensure that the bidding documents and civil works contracts contain provisions requiring contractors to comply with the mitigation measures in the EMP and that relevant sections of the updated project EMP are incorporated in the bidding and contract documents.
- (v) Support the implementing agency in reviewing and approving contractors' site-EMPs and organizing the conduct of periodic environmental impact monitoring.
- (vi) Provide expert advice to properly implement the EMP and ensure actual practices are in accordance with the EIA, EMP, soil erosion protection plan, and other environmental protection guidelines.
- (vii) Assist the executing and implementing agency to establish a safeguard grievance redress mechanism (GRM), and provide training for the implementing agency and other GRM access points.
- (viii) Conduct regular EMP compliance verification, undertake site visits as required, identify any environment-related implementation issues, and propose necessary corrective actions.
- (ix) Prepare, on behalf of the implementing agency, annual EMP monitoring and progress reports to ADB.
- (x) Provide training to PMO, implementing agency, PIU, and contractors on environmental laws, regulations and policies, ADB's SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP.
- (xi) Assist the PMO, implementing agency, and PIU in conducting site inspections and public consultation meetings with affected persons and relevant stakeholders, informing them of imminent construction works, updating them on the latest project development activities.
- (xii) Conduct assessment of project's performance at project completion stage and approximately one year of operation to confirm compliance with EMP as well as sound management practices (environment audit), and contribute to the project completion report.
- (xiii) Provide inputs of environmental protection to semiannual progress reports, midterm report, project completion report, and other project required documents.

#### r. National Campus Sustainability Planning Expert (4 Person-months)

46. The national campus sustainability planning expert shall have at least a Master's degree in environmental planning or other relevant disciplines and a minimum of 8 years of experience in the conceptualizing, planning and implementing of campus sustainability initiatives, green campus policies, or environment management systems (EMS) for university campuses. The specialist will provide support to Baise University and its Comprehensive Affairs Bureau in defining a campus sustainability policy, and developing a sustainability center with clear strategic objectives, sustainability programs, institutional structure, terms of reference. The specific tasks include:

(i) Organize a seminar for Baise University's senior management and relevant departments on (a) PRC policies and guidelines pertaining to green campus

development, campus sustainability planning, the promotion of energy-efficiency, low-carbon and resource-efficient development; and (b) successful case studies in the PRC. Expected output is a seminar report, including documentation of successful case studies.

- (ii) Plan and facilitate, in collaboration with the Comprehensive Affair Bureau and the Teaching Affairs Bureau, a participatory assessment of current and planned programs within the campus that aim at promoting campus greening, low-carbon development, energy-efficiency, resource-conservation, environmental awareness raising, sustainability in curriculum, and other sustainability initiatives. Expected output is an assessment report.
- (iii) Facilitate the definition of a campus sustainability policy based on a nationally recognized methodology, including formulation and agreement on policy vision, policy goals, policy targets and commitments. Expected output is a campus Sustainability policy statement endorsed by Baise University's senior management.
- (iv) Facilitate the creation of a governance structure (sustainability center) within Baise University's Comprehensive Affair Department, including definition of (a) organization setup and terms of reference; (b) main sustainability pillars (e.g. green campus, green curriculum, green community; and (c) a roadmap with clearly articulated targets and measurable indicators. Expected outputs are a sustainability center and roadmap.
- (v) Develop outlines of sustainability policies for Baise University priority areas (e.g., energy policy, waste management policy, green procurement policy, and environment awareness policy). Expected outputs are draft sustainability policies for at least 2 priority areas.

#### APPENDIX 3: TECHNICAL VOCATIONAL EDUCATION AND TRAINING CAPACITY BUILDING DESIGN AND STRATEGIES

#### A. Design Overview

1. The technical and vocational education and training (TVET) components have been carefully designed through detailed assessment and analysis. The design has focused on (i) involving industries in identifying priority occupational areas, and developing competency-based curriculum (CBC) and materials; (ii) creating a multilevel system and pathways to further education by establishing training programs that align with entry requirements for more advanced programs; (iii) building a learning culture that uses (for example) surveys, tracer studies, and reflective practices to improve future policy and program development; and (iv) establishing a robust project monitoring and evaluation framework.

2. The PRC aims to establish a world-class modern TVET system that is relevant, connective, and multi-dimensional.<sup>1</sup> There is strong consensus among PRC policy-makers that a key component of the new TVET system will be a well-structured and better-coordinated "multi-level TVET" (MLT) system, which exhibits the following characteristics:

- (i) responds to the PRC's future economic and social development needs, as well as regional and international trends;
- (ii) caters for and promotes lifelong learning;
- (iii) provides learning pathways and fosters career development opportunities;
- (iv) blends vocational training and academic education; and
- (v) articulates and "ladderises" levels of TVET.

3. **Component 1: TVET Quality Improved and Capacity Developed** includes four subcomponents: (i) multilevel TVET strategic development, (ii) curriculum development, (iii) teacher training and pedagogy reform, and (iv) staff development. The five priority sectors for the initial development of multilevel curriculum and learning pathways are: preschool education, aluminum processing, engineering management, design, and agriculture-related biological technology including food engineering, and facility-based agriculture. Curriculum for tourism and logistics will be developed under the project to support expansion of TVET into new growth sectors in Baise. Each sector includes majors that cover a range of levels. Preschool education is currently the only sector that covers all three levels i.e., Baise University, Baise Vocational School, and Baise Vocational College. It is also the only services oriented program among those prioritized. The other sectors will be developed across one or two levels.

4. The key industry sectors that form the basis for curriculum and staff development have been selected because of their importance to the economic and social development of Baise. The selected sectors represent both the short to medium term (immediate) as well as the longer term (emerging) priorities. The Baise Municipal Government (BMG) Five-Year Plan, 2012–2016 provides the main source for the selection of the priority sectors. The inclusion of Preschool Education as an immediate priority is based on the increased demand for early childhood development services. Baise University, BVC, and BVS are well positioned to deliver on this priority through enhancing existing courses and qualifications. Other immediate priorities for the project are drawn from the industry sectors in Baise that have a high demand for knowledge and skills, particularly at the technical, technological and managerial occupational levels. The development of the MLT system through the project's involvement has been matched to this demand to deliver these different levels of skills (i.e. aluminium processing, engineering management, agriculture (bio-technology and food processing) and industrial design. The emphasis in course development for both immediate

<sup>&</sup>lt;sup>1</sup> Policy statement by PRC Vice-Premier Liu Yandong to the Third International Congress on Technical and Vocational Education and Training in Shanghai on March 2012.

and emerging sectors is on the development of both technical and employability skills to address the needs expressed by industry.

5. An entrepreneurship and employability curriculum and modular curriculum addressing migrant workers' training will be developed to facilitate adult and lifelong learning and establish entry points and learning pathways to higher study. A core teacher training program and establishment of a TVET teachers' training center are highlights in the teacher training and pedagogy reform subcomponent. The subcomponent on staff development includes opportunities for industry attachments and workplace experience plus the establishment of teaching standards and the training of additional numbers of dual qualified teaching staff.

6. **Component 3: TVET Innovation and Relevance Promoted** is divided into three subcomponents: (i) school-industry partnerships, (ii) regional cooperation, and (iii) research. The school-industry partnerships subcomponent focuses on creating better linkages to industry for student work experience and/or internships and staff training; greater involvement of industry in the design of multilevel TVET (curriculum, teaching, assessment, standards, certification, etc.) and creating institutional linkages and processes which will be sustainable. The regional cooperation subcomponent seeks to build on existing regional cooperation activities, create institutional and leadership capacity for expansion and directly integrate emerging regional cooperation standards systems into existing majors. The subcomponent on research seeks to provide strategic and investigative research findings into key areas of policy, including institutional development, the critical area of linking multilevel TVET to market demand, and human resources development in emerging growth areas for the Baise local economy.

#### B. Description of Technical Vocational Education and Training Components

7. Component 1: Technical and vocational education and training quality improved and capacity developed. This component will support the institutional development of the MLT system, curriculum development for MLT in priority sectors and teacher training and professional development. The component supports (i) the development of a multilevel MLT system (MLT) that provides curriculum integration through a sequence of learning outcomes linking secondary vocational school, vocational college, and undergraduate levels of TVET; (ii) establishment of a system to support employment information gathering, analysis, and dissemination; (iii) the development of a communication and outreach strategy to support understanding of MLT opportunities and recruitment; (iv) the development of a competency-based approach (CBA) to curriculum, instruction, and assessment that is applied to the selected priority areas; (v) an improved quality assurance system that is based on both education and industry standards in the delivery of relevant training; (vi) upgrading of both pre-service teacher training and in-service professional development; (vii) support for the development of leadership and management skills through core teacher and leadership training courses; (viii) a comprehensive workshop program for teachers and other stakeholders, focused on key TVET concepts (e.g. MLT system, CBA, and quality assurance) and their application to priority areas and instructional delivery; (ix) support for domestic and/or international visits to provide opportunities to observe and participate in TVET best practice examples.

8. **Component 3: Technical and vocational education and training innovation and relevance promoted.** This component supports (i) staff opportunities for active engagement in industry visits, assignments, and training attachments; (ii) enhanced industry participation in the governance of TVET and the delivery of curriculum and assessment; (iii) cooperative activities between Baise University, environment bureau, and Human Resources and Social Security Bureau (HRSSB) to enhance and integrate migrant worker programs into TVET training; (iv) an emphasis on entrepreneurship through curriculum and policy development

and the design and implementation of an entrepreneurship incubation program; (v) funding support for an enterprise education facility (fund) to provide opportunities for teachers and students to develop small scale enterprise projects with industry links; (vi) training for a small team to coordinate regional cooperation planning and development activities; (vii) research support for enhanced information and resources gathering for regional cooperation partnerships and ventures; and (viii) research that investigates and provides workable options for enterprise-TVET partnerships, emerging priority sectors, and future course and qualifications needs.

| Output and/or Component                     | Description   |  |  |  |
|---|---|--|--|--|
| Output 1: TVET Quality Improv               | red and Capacity Developed  |  |  |  |
| 1.1 Multilevel TVET strategic development   | <ul> <li>1.1.1 MLT system leading group undertakes research and planning in collaboration with industry and other stakeholders;</li> <li>1.1.2 MLT architecture established: Level descriptions, institutional linkages, and pathways developed;</li> <li>1.1.3 Training provided (for all stakeholders) in MLT system to support the development of a TVET applicable university;</li> <li>1.1.4 Establishment of a management committee to coordinate enhancement of multilevel system data management.</li> <li>1.1.5 Develop a communications and outreach plan.</li> </ul>   |  |  |  |
| 1.2 Curriculum development                  | <ol> <li>1.2.1 Develop competency standards (in seven priority areas across different institutional and qualifications levels) initially in preschool education, design, aluminum processing, engineering management, and agriculture; and later in tourism and logistics.</li> <li>1.2.2 Develop competency based approach to curriculum, instruction, and assessment (in seven priority areas and across designated levels, majors and courses).</li> <li>1.2.3 Pilot SVS, vocational college, and undergraduate priority sectors, majors, and courses (as agreed) with linkages (pathways) established.</li> <li>1.2.4 Provide general training (workshops, seminars) in CBA for all teaching staff (curriculum, assessment and instruction).</li> <li>1.2.5 Develop curriculum in enterprise education (entrepreneurship) and employability skills.</li> <li>1.2.6 Review and enhance quality assurance system in curriculum, assessment, and qualifications design.</li> <li>1.2.7 Develop teaching and learning resources (publication, web-based) to support priority majors and courses.</li> </ol> |  |  |  |
| 1.3 Teacher training and<br>pedagogy reform | <ul> <li>1.3.1 Develop Baise University policy and guidelines for staff movement between institutional levels.</li> <li>1.3.2 Develop guidelines and standards to reform pedagogy in line with CBA (i.e. student-centered and activities-based instruction and assessment).</li> <li>1.3.3 Develop policy, plans, and procedures for the establishment of a secondary TVET teacher training center (to be expanded later as a regional cooperation activity).</li> <li>1.3.4 Creation of a core teacher training system (using a train the trainer approach) to support training for pilot lessons in selected priority areas.</li> <li>1.3.5 Assess staff incentive structures for staff engaged in the project (e.g. staff hours for attending training).</li> </ul>  |  |  |  |
| 1.4 Staff development                       | <ul> <li>1.4.1 Revise and upgrade staff training plans to include training in the Baise University MLT system.</li> <li>1.4.2 Develop strategy to upgrade staff to attain dual qualifications at all levels (SVS, vocational college, and undergraduate).</li> <li>1.4.3 Devise and develop leadership training program for Baise University senior and intermediate level leaders and other stakeholders (MLT system, management, and leadership) (overseas program).</li> <li>1.4.4 Develop overseas training for core teachers (train-the-trainer).</li> <li>1.4.5 Develop domestic study tours for observation and investigation based on</li> </ul>  |  |  |  |

Table 1: Summary of Technical Vocational Education and Training Components

| Output and/or Component             | Description   |  |  |  |  |
|-------------------------------------|---|--|--|--|--|
|                                     | <ul> <li>specific project reforms (MLT, industry partnerships, regional cooperation, curriculum, and teaching, etc.).</li> <li>1.4.6 Organize and facilitate training in PRC TVET institutions where there is good practice related to priority areas.</li> </ul>   |  |  |  |  |
| Output 3: TVET Innovation an        | d Relevance Promoted  |  |  |  |  |
| 3.1 School-industry<br>partnerships | <ul> <li>3.1.1 Organize for staff, industry visits, job assignments, and training attachments, which include specific performance requirements and outcomes.</li> <li>3.1.2 Enterprise education facility established to enhance school industry partnerships and innovation in other project areas.</li> <li>3.1.3 Establish school-industry leading groups.</li> <li>3.1.4 Design and implement further outreach training programs for migrant workers and communities.</li> <li>3.1.5 Design and implement an entrepreneurship incubation program.</li> </ul>              |  |  |  |  |
| 3.2 Regional cooperation            | <ul> <li>3.2.1 Develop and train Baise University management team to support regional cooperation planning and activities.</li> <li>3.2.2 Attend regional forums and related activities to support policy and partnership development in regional cooperation.</li> <li>3.2.3 Explore opportunities for consolidation of cross-border language education programs.</li> <li>3.2.4 Explore expanded cooperation opportunities with University of Thailand.</li> <li>3.2.5 Introduce APEC standards in related majors to enhance regional cooperation opportunities.</li> </ul> |  |  |  |  |
| 3.3 Research                        | <ul> <li>3.3.1 Develop school-industry partnerships regulation and policy development at different levels of provincial, BMG, and Baise University.</li> <li>3.3.2 Undertake research into sector plans in emerging priority sectors (logistics, tourism, etc.) to link market demand with the supply and development of human resources. Apply research findings to MLT system for course and qualifications development.</li> </ul>   |  |  |  |  |

APEC = Asia-Pacific Economic Cooperation, BMG = Baise Municipal Government, CBA = competency-based approach, MLT = multilevel TVET system, PRC = People's Republic of China, SVS = secondary vocational school, TVET = technical and vocational education and training.

### Table 2: Summary of Detailed Technical Vocational Education and Training Components Activities

| Output and/or Component                                | Activities   |  |  |  |  |
|--|--|--|--|--|--|
| Output 1: TVET Quality Improved and Capacity Developed |  |  |  |  |  |
| 1.1 Multilevel TVET strategic                          | 1.1.1 MLT system leading group undertakes research and planning in   |  |  |  |  |
| development  | collaboration with industry and other stakeholders.  |  |  |  |  |
|  | 1.1.2 ML I architecture established: Level descriptions, institutional linkages, and pathways developed.   |  |  |  |  |
|  | 1.1.3 Training provided (for all stakeholders) in MLT system to support the  |  |  |  |  |
|  | development of a river applicable university.  |  |  |  |  |
|  | of multilevel system data management:  |  |  |  |  |
|  | analysis to support Baise University admission and placement office systems on student enrollments, graduation, placement and                              |  |  |  |  |
|  | employment;  |  |  |  |  |
|  | <ul> <li>improve tracer studies (for all levels);</li> </ul>   |  |  |  |  |
|  | <ul> <li>develop links with other institutions' data gathering e.g. HRS</li> <li>Leber Market eventsmend initiate an inductor survey eventsmend</li> </ul> |  |  |  |  |
|  | Labor Market system, and initiate an industry survey system, and   |  |  |  |  |
|  | • prepare annual reports.  |  |  |  |  |
|  | 1.1.5 Develop a communications and outreach plan   |  |  |  |  |
|  | <ul> <li>Conduct public awareness programs for student recruitment.</li> </ul>   |  |  |  |  |
|  | <ul> <li>Demonstrate increased opportunities available for students under an<br/>MLT system.</li> </ul>  |  |  |  |  |
|  | Provide details on school-industry partnerships and opportunities for regional cooperation activities.   |  |  |  |  |

| Output and/or Component       | Activities   |
|-------------------------------|--|
| 1.2 Curriculum development    | 1.2.1 Develop competency standards (in five priority areas across different  |
|                               | institutional and qualifications levels) in:   |
|                               | <ul> <li>preschool education,</li> </ul>   |
|                               | • design,  |
|                               | <ul> <li>aluminum processing,</li> </ul>   |
|                               | engineering management, and  |
|                               | agriculture.   |
|                               | 1.2.2 Develop CBA to curriculum, instruction, and assessment (in five priority   |
|                               | areas and across designated levels, majors, and courses).  |
|                               | 1.2.3 Pilot SVS, vocational college, and undergraduate pilotity sectors,   |
|                               | 1.2.4 Provide general training (workshops, seminars) in CBA for all teaching   |
|                               | staff (curriculum assessment and instruction)  |
|                               | 1.2.5 Develop curriculum in enterprise education (entrepreneurship) and  |
|                               | employability skills.  |
|                               | 1.2.6 Review and enhance quality assurance system in curriculum,   |
|                               | assessment, and qualifications design.   |
|                               | 1.2.7 Develop teaching and learning resources (publication, web-based) to  |
|                               | support priority majors and courses.   |
| 1.3 Teacher training and      | 1.3.1 Develop Baise University policy and guidelines for staff movement  |
| pedagogy reform               | between institutional levels.  |
|                               | 1.3.2 Develop guidelines and standards to reform pedagogy in line with CBA   |
|                               | (i.e. student-centered and activities-based instruction and assessment).   |
|                               | secondary TVET teacher training center (to be expanded later as a  |
|                               | regional cooperation activity).  |
|                               | 1.3.4 Creation of a core teacher training system (using a train the trainer  |
|                               | approach) to support training for pilot lessons in selected priority areas.  |
|                               | 1.3.5 Assess staff incentive structures for staff engaged in the project (e.g.   |
|                               | staff hours for attending training).   |
| 1.4 Staff development         | 1.4.1 Revise and upgrade staff training plans to include training in the Baise   |
|                               | University MLI system.   |
|                               | 1.4.2 Develop strategy to upgrade stall to attain dual qualifications at all levels (SVS vocational college and updergraduate) |
|                               | 14.3 Devise and develop leadership training program for Baise University   |
|                               | senior and intermediate level leaders and other stakeholders (MIT  |
|                               | system, management, and leadership) (overseas program).  |
|                               | 1.4.4 Develop overseas training for core teachers (train-the-trainer).   |
|                               | 1.4.5 Develop domestic study tours for observation and investigation based   |
|                               | on specific project reforms (MLT, industry partnerships, regional  |
|                               | cooperation, curriculum and teaching, etc.).   |
|                               | 1.4.6 Organize and facilitate training in PRC IVET institutions where there is   |
| Output 3: TVET Innovation and | good practice related to priority areas.   |
| 3 1 School-industry           | 3.1.1 Organize for staff industry visits job assignments and training  |
| partnerships                  | attachments which include specific performance requirements and  |
|                               | outcomes.  |
|                               | 3.1.2 Enterprise education facility established to enhance school industry   |
|                               | partnerships and innovation in other project areas.  |
|                               | 3.1.3 Establish school-industry leading groups:  |
|                               | <ul> <li>professional steering group at the faculty level (including industry),</li> </ul>                                     |
|                               | <ul> <li>school-industry partnership group to support the priority majors, and</li> </ul>                                      |
|                               | <ul> <li>establish school-industry committee at Baise University management<br/>level</li> </ul>                               |
|                               | 1999.<br>1 1 4 Design and implement further outreach training programs for migrant   |
|                               |  |
|                               | 3.1.5 Design and implement an entrepreneurship incubation program (see   |
|                               | 1.2.5 in curriculum development).  |
| 3.2 Regional cooperation      | 3.2.1 Develop and train Baise University management team to support  |
|                               | regional cooperation planning and activities   |
|                               | 3.2.2 Attend regional forums and related activities to support policy and  |
|                               | partnersnip development in regional cooperation;   |
|                               | o.2.o Explore opportunities for consolidation of cross-border language   |
|                               | 324 Explore expanded cooperation opportunities with University of Thailand   |
|                               | o.z Explore expanded cooperation opportunities with oniversity of malianu,   |

| Output and/or Component | Activities  |
|-------------------------|---|
|                         | 3.2.5 Introduce APEC standards in related majors to enhance regional cooperation opportunities  |
| 3.3 Research            | <ul> <li>3.3.1 Develop school-industry partnerships regulation and policy development at different levels:</li> <li>Provincial,</li> <li>BMG, and</li> <li>Baise University.</li> </ul>   |
|                         | 3.3.2 Undertake research into sector plans in emerging priority sectors (logistics, tourism, etc.) to link market demand with the supply and development of human resources. Apply research findings to MLT system for course and gualifications development. |

APEC = Asia-Pacific Economic Cooperation, BMG = Baise Municipal Government, CBA = competency-based approach, HRSSB = Human Resources and Social Security Bureau, MLT = multilevel TVET system, PRC = People's Republic of China, SVS = secondary vocational school, TVET = technical vocational education and training.

#### C. Strategies for Technical Vocational Education and Training Capacity Building Overview

These two capacity building outputs are focused on developing a transformed MLT 9. system that links institutions, in preparation for employment and related qualifications in an integrated approach to learning across three levels of instruction in selected majors and priority areas. The use of pilots in high demand priority areas is an initial strategy which can then be expanded to other areas and majors. A feature of the MLT system is an emphasis on improved access, career planning and flexibility in how learning is organized. The development of student learning pathways provides an important mechanism for planning progression through the MLT system. Most of the reforms in the project's TVET capacity building components relate to changes in curriculum design and delivery. This is to create a curriculum that is more appropriate to a modern, demand-driven TVET applicable university that is delivering TVET courses at different levels. The most significant change will be the introduction of a competency based approach that impacts on curriculum design, instruction and assessment. This will require attention through the other major components of the capacity building, both pre-service training for teachers and ongoing staff development. The integration of curriculum, teacher training and staff development is central to the project's success and in Baise University's efforts to establish themselves as a TVET applicable university.

## D. Component 1: Technical Vocational Education and Training Quality Improved and Capacity Developed

10. The emphasis of this output is on developing and applying the essential building blocks in a TVET system and more specifically in an MLT system. The transition of Baise University from a purely academic university to one that incorporates TVET across levels of instruction requires the development of new concepts, strategies, policies and procedures. It is also considered important that a focus on the quality of TVET is included in all aspects of Baise University's operation.

11. This output includes strategies and accompanying activities grouped under four main components:

- (i) multilevel TVET system strategic development,
- (ii) curriculum development,
- (iii) teacher training and pedagogy reform, and
- (iv) staff development.

#### 1. Component 1.1: Multilevel Technical Vocational Education and Training System Strategic Development

#### a. Multilevel Technical Vocational Education and Training System Strategic Development Undertakes Research and Planning in Collaboration with Industry and Other Stakeholders

12. The creation of an MLT system at Baise University is a comparatively new development for the PRC. The current plans to create 600 applicable TVET universities in the PRC in the near future will no doubt see the development of more MLT systems that integrate TVET across institutions and courses.<sup>2</sup> There are still many policy and operational issues that need addressing in MLT systems. Given the importance of stakeholder involvement in the development of an MLT system, there are opportunities for joint research and decision making. This activity will provide funding and domestic and/or international expertise and support to help to define and progress a MLT system as a viable alternative for the delivery of TVET at Baise University (and more widely). It is anticipated that there will interest from staff, industry and government agencies in the development and evolution of the MLT system. Small scale funding support will be provided to support this initiative.

13. The MLT strategic development research and planning will incorporate gender equity and social inclusion considerations through collection of disaggregated data (sex, ethnic minority, rural, and urban), inclusion of gender analysis and identification of specific measures to ensure equitable access to MLT.

#### 2. Multilevel Technical Vocational Education and Training System Architecture Established (Level Descriptions, Institutional Linkages, and Pathways Developed)

14. The MLT system at Baise University draws on international and national best practice and examples for its architecture. The system also needs to be responsive to national policy changes and directions. It is anticipated that MLT systems will evolve and become more sophisticated once their use is widespread. The current model needs to be documented and explained to all stakeholders for its adoption and operation. The institutional strengthening consultant (team leader) will undertake this work as part of his or her role. The information relating to the MLT system needs to be included in the planned communication strategy and outreach plan for stakeholders, particularly students in Baise, the province, and eventually more broadly as part of a regional cooperation program.

#### 3. Training Provided For All Stakeholders in Multilevel Technical Vocational Education and Training System to Support the Development of a Technical Vocational Education and Training Applicable University

15. The adoption of an MLT system by Baise University introduces new concepts for current practices, particularly as this applies to student access and career planning e.g. a sequence of learning outcomes, seamless education, learning pathways, and different articulation arrangements. It will be essential that all Baise University staff members are conversant with all aspects of the operation of the MLT system. The need for this understanding also extends to all other stakeholders with involvement in the TVET system e.g. government, industry, parents, and students as users of the system. This will require training for staff, information for stakeholders, and publicity provided through outreach programs for students and their parents. The training, information preparation, and publicity

<sup>&</sup>lt;sup>2</sup> Baise University has been chosen to be one of the leaders in such a transformation as it is one of the 19 selected universities/colleges in Guangxi Zhuang Autonomous Region to shift into a technical vocational education and training applicable institution.

strategies will be included as part of the institutional strengthening consultants' responsibilities.

16. The training to develop and operate the MLT system will seek equal participation of both men and women from all stakeholders and targets have been included in the SGAP.

#### 4. Establishment of a Management Committee to Coordinate an Employment Information Management System

17. The application of an MLT system requires gathering and analysis of student and labor market data for its successful operation as a supply mechanism to meet the demand for particular skills and occupations at different levels. The development of the information system will be outsourced but will require a close working relationship between the developer and Baise University management through a management committee, the following development and coordination tasks and responsibilities need to be undertaken by a management committee:

#### a. Analysis to Support Baise University Admission and Placement Office systems on Student Enrollments, Graduation, Placement, and Employment

18. The MLT data management, analysis and decision support system will collect and analyze sex, residence and ethnicity disaggregated information on student enrollment, graduation, placement and employment per major. The analysis will also include information on how to improve student participation in non-traditional sectors (for e.g. female student participation in metal chemistry and male student participation in pre-school education)

### b. Improve Tracer Studies (Secondary Vocational School, Vocational Colleges, and Undergraduate Programs)

19. Data gathering and analysis of graduate student's feedback provides a valuable source of information for ongoing planning, e.g. determining course effectiveness, relevance of content to gaining employment, employment in majors, student and employer satisfaction, etc. While there are excellent data to support graduate students' success in obtaining employment (90%+), it is considered by some staff and other stakeholders that this is only a short term outcome, with many students not employed in their major areas and many leaving their initial employment within the first few years. Baise University will develop a consistent approach to analyzing their graduates' feedback and this activity will provide support for this to be achieved e.g. tracer studies and longitudinal data (where feasible). Consultancy support will be used (as part of the school-industry consultants' responsibilities) to provide assistance in considering good examples of survey techniques and other analyses that provide both short- and medium-term information leading to improvements.

20. Tracer studies will include disaggregated data covering sex, ethnicity, rural and/or urban per priority major. The tracer study reports will incorporate gender and social analysis demonstrating student graduation, job changes, job satisfaction, and choices of continuation of higher education in all priority majors.

#### c. Develop Links with other Institutions' Data Gathering e.g. Human Resources and Social Security Bureau Labor Market System, Initiate Industry Surveys

21. The Baise-based HRSSB has already commenced its plans to provide an upgraded Labor Market Information System that will support local industry through better information

gathering, analysis, and reporting.<sup>3</sup> It will be important for the education and training system to take advantage of this important work to assist its own data needs. The Education Bureau will work closely with HRSSB to ensure that data sets include relevant education and training data requirements.

22. While there are good individual linkages with specific industries, Baise University will need more global information (e.g. provincial, national, and regional) to support their plans for new courses, development of regional cooperation opportunities, and enhanced school-industry partnerships. Support has been provided to develop an employment management system to both support the MLT system and to provide better information and opportunities for students on employment options.

#### d. Prepare Annual Reports

23. The specific nature of this reporting should focus on school-industry partnerships. It will potentially include information on students' and teachers' work experience placements and internships: case studies and success stories: an analysis of areas of ongoing need for more partnerships and opportunities for cooperative activities (e.g. Enterprise Education Facility). The regular production of high quality reports by Baise University and/or Baise vocational school also provides an opportunity for industry sponsorship.

#### 5. Develop a Communications and Outreach Plan for Recruitment, and Awareness on Multilevel Technical Vocational Education and Training

24. The introduction of a MLT system incorporating Baise University, Baise vocational college, and Baise vocational school provides new opportunities for prospective students, as well as for other stakeholders seeking partnerships and cooperative activities with the transformed institutions. It will be important to provide publicity and more detailed information on the reforms and new directions and how these relate to different stakeholders in a TVET applicable university. In summary this includes:

- (i) conducting public awareness programs for student recruitment;
- (ii) demonstrating increased opportunities available for students under an MLT system;
- (iii) providing details on school-industry partnerships, and
- (iv) exploring opportunities for regional cooperation activities.

25. The communication and outreach plan will ensure that all materials (information, education, and communication developed are gender responsive. Outreach and public awareness programs will be designed to (i) ensure adequate space and opportunity for participation of both women and men in target communities; (ii) promote male and female participation in non-traditional sectors (e.g. females in metal chemistry, metal material, material modelling and control engineering, males in pre-school education, etc.); (iii) introduce different levels of TVET pathways; and (iv) provide information on various forms of job opportunities linked with the levels of pathways available for both male and female students.

#### E. Component 1.2: Curriculum Development

26. Baise University has commenced a process of curriculum reform in the last few years as part of its transition to becoming a TVET applicable university that also includes the

<sup>&</sup>lt;sup>3</sup> Hopefully, Human Resources and Social Security Bureau's work will also include an overarching Human Resource Development Plan, and linkages to individual Industry Sector Plans to provide a more coordinated approach to determining high-demand skills required by industry and their supply (the education and training system being one of the main suppliers).

development and adoption of a MLT system. While the process is making progress, this is an extensive and challenging undertaking that is especially the case for staff members who themselves are trying to making the transition from teaching more academic courses to TVET courses. The transition has highlighted the need for many staff to become dual qualified teachers<sup>4</sup> as they lack industry experience and knowledge, which is an essential element of TVET courses. It has also created a need for different types of curriculum development (i.e. curriculum built around competency standards), instructional methods (i.e. competency-based instruction that requires more hands-on, student-centered approaches), and assessment methods that rely more on the demonstration of skills and knowledge (i.e. students are competent) than through paper and pencil tests.

27. It has been evident through workshops and meetings with staff at all levels, as well as through staff responses to the Baise University survey,<sup>5</sup> that there is a need for extensive professional development in TVET (i.e. competency-based) curriculum, instruction, and assessment methods. The large number of teachers who entered Baise University straight from graduation means that many staff members are also unaware of the required standards in both specific and general curriculum areas. There is recognition amongst staff that they need support to (i) acquire knowledge of industry standards, and (ii) to apply these to the classroom/workshop through relevant curriculum and assessment.

#### 1. **Project's Approach to the Development of Curriculum Development**

28. The proposed curriculum development subcomponent is a package of activities (essentially key building blocks or basic concepts) that in combination and through integrated practice build a competency-based system that needs to be applied at Baise University, in SVS and vocational college courses and majors. Organizing a package of key elements for an effective TVET curriculum system also provides an opportunity for a sophisticated and mature TVET to provide all aspects of the system. This is a feature of some other successful TVET projects in the PRC e.g. the German approach in some TVET schools and colleges and the AusAID funded TVET project in Chongqing.

## 2. Development of Competency Standards (Initial Five Priority Areas and Across Different Major and Course Levels)

29. The use of competency standards, developed by specific industries, has already occurred in the PRC, particularly in TVET institutions administered by Ministry of Human Resources and Social Security. However, their use is patchy, with some institutions using them and some not. The reasons given for not using them vary, but the currency of the standards and there not being available in new or upgraded industries (e.g. logistics) are cited as main issues. There is a need for standardizing the approach to curriculum development if a competency-based system is to be adopted. The involvement of industry in developing competency standards is a feature of mature TVET systems. This provides further opportunities for strengthening school-industry partnerships through ensuring the relevance of curricula that are built on competency standards.

### 3. Develop Competency-based Approach to Curriculum, Instruction, and Assessment (Initial Five Priority Areas and Across Designated Levels)

30. Pilot SVS, vocational college, and undergraduate courses with linkages (pathways) in:

(i) preschool education,

<sup>&</sup>lt;sup>4</sup> Less than 10% of BVS staff and approximately 14% of Baise University staff are dual qualified teachers.

<sup>&</sup>lt;sup>5</sup> The sector assessment provides an analysis of staff responses, including curriculum, instruction and assessment related information.

- (ii) design,
- (iii) aluminum processing,
- (iv) engineering management,
- (v) agriculture, and
- (vi) develop curriculum for future course areas in tourism and logistics.

#### 4. Provide General Training (Workshops, Seminars) in Competency-based Approach for All Teaching Staff (Curriculum, Assessment, and Instruction)

31. This cluster of curriculum related activities is the centerpiece of the project. The curriculum packages will form the main focus for the pilot work to occur in priority sectors, majors and courses. Apart from the change management aspects of the work, there is considerable exposure to new concepts and practices that are the fundamental requirements of quality TVET programs. Building general curriculum development knowledge and skills as well as their application to specific courses is essential and will determine the success of the curriculum inputs.

32. It is anticipated that when Baise University staff have acquired the knowledge and skills of a competency based TVET system that this allows the resulting products and services to be extended into regional cooperation programs. Developing CBC in the designated priority sectors, majors, and courses is therefore central to the success of the capacity building components of the project. The competency based curriculum development will ensure gender mainstreaming and social inclusion. A gender in TVET specialist will review all materials developed and their recommendations will be included in the finalized materials. In addition, the project will support inclusion of information on ethnic minority culture in curriculum development for selected courses.

#### 5. Develop Curriculum in Entrepreneurship and Employability skills

33. While entrepreneurship and employability require different knowledge, skills and attitudes, they are both areas that were frequently mentioned by both teaching staff and industry representatives, as requiring more attention through specific curriculum activities. The Guidelines on Local Governments' Administrative Universities' Transition Development, drafted by the Ministry of Education in 2013 specifically states the need for the development of an entrepreneurship education strategy (p. 4). Entrepreneurship (or enterprise education as it is also commonly referred to), is best developed as a continuous and integrated feature of different levels of curriculum. Students are encouraged to recognize and take opportunities, develop enterprising behaviors, and motivated to acquire skills leading to meaningful paid work. Many education systems introduce enterprise education skills in primary school that are then formalized in secondary (especially TVET) programs. Another related focus in TVET is the development of self-employment skills. This has been the main request from students and staff interviewed at Baise University and so it will form the focus for an entrepreneurship program.

34. Employability skills are often referred to by employers as being important as technical skills in people seeking and retaining employment. The development of employability skills (e.g. cooperation, team work, proactive behavior, communication, basic literacy and numeracy, etc.) is often not formally taught in institutional learning. In increasingly more sophisticated workplaces, these skills have assumed more importance. It is considered important by Baise University and will be included as part of each level of the MLT system.



### 6. Review and Enhance Quality Assurance System

### Review and Enhance Quality Assurance System in Curriculum, Assessment, and Qualifications Design

35. The following diagram illustrates the key elements (ideally) of quality assurance required in a competency-based TVET system. While Baise University has attended to quality elements in their academic programs it is important to review and change the quality assurance program in light of the new reforms that are part of an MLT system - that also uses a competency-based approach. For example, it will be important to assure both the internal and external quality (validity and reliability) of student assessments that rely on demonstration, rather than written responses i.e. verification of assessment. Building curriculum around competency standards requires new quality assurance processes to ensure its relevance and best fit with industry. Creating new qualifications with more industry involvement provides an opportunity to introduce validation of qualifications.

36. While the project is not directly concerned with system level, or external, changes to quality assurance mechanisms, there is an opportunity to provide understanding of the need for changes in a transformed TVET applicable system to licensing of providers, external reviews of providers, certification issues and rules for the design of courses and qualifications. BU needs to be well-positioned for further national reforms and initiatives and it is highly likely that subsequent changes will be in the area of quality assurance, through policy and guidelines introducing both internal and external mechanisms.

#### F. Component 1.3: Teacher Training and Pedagogy Reform

#### 1. Develop Policy, Guidelines, and Standards to Reform Pedagogy in Line with Competency-based Approach (Student-centered and Activitiesbased Instruction and Assessment)

37. The introduction of a CBA requires different types of teacher pre-service and inservice training than currently exists. A CBA approach has features that need to be in place in classrooms and workshops for effective learning outcomes to be achieved e.g. teacher demonstrations, hands-on learning experiences for students, and assessment that focuses on the demonstration of knowledge, skills and opportunities for different student learning rates (more difficult to achieve in a formal institutional setting).

38. The introduction of CBA will require agreed policies and guidelines that are based on industry standards as these apply to (for example) instruction, equipment use and maintenance, occupational health and safety and behavior in the workplace. This should include desired teacher competencies based on the different experience levels of teachers, e.g. (i) new or inexperienced teacher, (ii) experienced teacher, and (iii) core or master teacher. The standards provide a means of quality assurance, but can be also used for promotional positions and giving opportunities for further learning and leadership in the institution. The project will provide the necessary policy support to define procedures and standards in a MLT system.

## 2. Develop Baise University Policy and Guidelines for Staff Movement between Institutional Levels

39. There is already considerable movement between institutions (SVS, vocational college, and Baise University) and also from industry where this can be arranged. It is primarily used to support the teaching program where essential knowledge and skills need boosting in one institution (usually the movement is from Baise University or industry to the SVS or vocational college levels). These procedures need formalizing as part of the overall planning for a MLT system to operate effectively. Project support for policy will be provided under this activity.

# 3. Develop Policy, Plans, and Procedures for the Establishment of a Secondary Technology and Vocational Education and Training Teacher Training Institute

40. Baise City currently has no secondary TVET teacher training center to prepare teachers through in-service and/or in-service professional development programs. Baise University has developed plans for this center, which will use the new infrastructure and facilities to provide a virtual training center. The center will function first as a mechanism for BU and its affiliated institutions, and then it will eventually provide training for a wider group of schools in the municipality and Guangxi Zhuang Autonomous Region. It is anticipated that the TVET teacher training center will be expanded later as a regional cooperation activity. As with all project activities, the plan is to develop Baise University and stakeholders' capacity *first*, as a preliminary to considering what project developed products and services can be offered as a second step. It is anticipated that some activities will be done in the 5-year life of the project, with others developed as a follow-up phase to the project.

# 4. Creation of a Core Teacher Training System (Using a Train-the-Trainer approach) to Support Training for Pilot Lessons in Selected Priority Areas

41. The core teachers system plays an important role in education and training institutes in the PRC. Core teachers have shared leadership roles: provide guidance and mentoring for other (inexperienced) teachers, and are called upon to use their expertise in a range of other teaching and learning tasks. The core teachers, who are typically dual qualification teachers, will play a leading role in the pilot programs, especially in trial courses in priority sectors. To undertake this role they need to be given extra training and support to acquire the necessary knowledge and skills for effective practice. The use of a train-the-trainer model provides a good basis for both capacity development and sustainability. The project will provide a training system and its application during the early-mid-phases of the project.
42. The training of teachers will feature equal number of male and female teachers and adequate representation of teachers from ethnic minority groups. Targets are included in the SGAP.

# 5. Assess Staff Incentive Structures for Staff Engaged in the Project (e.g. Staff Hours for Attending Training)

43. This is a small but essential feature for the project. In Chongqing, for example, it was important to have a local agreement that hours spent in project activities counted as teaching hours for payment and promotional purposes for teachers. There is also an opportunity to develop incentives for staff involvement in the project i.e. incentives that provide mutual benefits for both the institution and the individual staff member. This will add to the effectiveness of the project in achieving project outcomes.

# G. Component 1.4: Staff Development

44. The plans, policies, processes, and skills developed through the MLT system, curriculum development and teacher training components will need to be presented to staff and other stakeholders through the staff development component of the project. This will involve workshops and seminars, the use of focus groups, meetings of committees, and other groups: as well as domestic and international visits.

- 45. Three main phases of staff development are suggested:
  - (i) Development of essential TVET building blocks for successful practice.
  - (ii) Building of understanding of the MLT system as it applies to Baise University and contributory schools.
  - (iii) Application of TVET best practices and MLT system to pilot programs in priority sectors.

46. This will be a major undertaking given the large number of activities and new skills to be developed by the project. The extra support developed through the train-the-trainer (core teachers) and leadership programs will also be used to provide maximum coverage and support for the delivery of professional development activities for all participants. Scoping and sequencing of activities to be offered through staff development will need to be well organized for greater efficiency and effectiveness. Some key activities are outlined below as part of the staff development program.

## 1. Revise and Upgrade Staff Training Plans to Include Training in the Baise University Multilevel Technology and Vocational Education and Training System

47. The MLT system requires policy and guidelines that describe not only the architecture and key features of the system, but also how it is integrated with curriculum, teaching and industry involvement with Baise University et. al. This policy work needs to be incorporated with existing and new staff training plans. Project assistance will be provided (by the team leader) for this work.

## 2. Develop Strategy to Upgrade Staff to Attain Dual Qualifications at All Levels (Secondary Vocational School, Vocational College, Undergraduate)

48. Baise University has recently developed a staff training plan that is focused primarily on building the number of dual qualification teachers. The plan can be expanded to include further professional development and research opportunities. This will include defining, with industry involvement, the experiences required for gaining the work/industry knowledge and skills leading to dual qualification status.<sup>6</sup> There are also other professional development inputs that can become part of the Baise University staff training plan. There is a need to provide training for all staff in the MLT system, the competency-based curriculum, instruction and assessment model, new quality assurance arrangements and employability (for example). The staff training plan needs to be linked to performance monitoring of staff and to decisions on leadership and staff representative roles (e.g. participation in domestic/international visits) at Baise University.

#### 3. Devise and Develop Leadership Training Program for Baise University Senior and Intermediate Level Leaders and Other Stakeholders (Multilevel Technology and Vocational Education and Training System, Management and Leadership) Overseas Program)

49. The pace of change and reform of the TVET system in the PRC has accelerated in the past 5–10 years. The need for effective leadership in this climate of change is evident at all levels of the TVET system. The project provides an excellent opportunity to work with current and potential leaders from Baise University and the stakeholder group to develop skills to manage change through shared leadership, participative decision making and other strategies. The Baise University deans (in priority areas) spoke of professional isolation which also underlines the need for sharing and capacity building for the leadership group.

50. It is anticipated that a formal leadership course will be provided as part of a domestic and/or overseas visit to observe and experience TVET reforms relevant to the development of an MLT system at Baise University. The leadership course will provide materials and experiences that can be replicated by participants with other staff. Leadership and professional development training programs will include a module on gender issues, including gender sensitive training and breaking the gender stereotypes of different majors/occupations.

# 4. Develop Overseas Training for Core Teachers

51. The number of reforms included in the project is extensive. The aim is to provide an integrated package of strategies that links the MLT system with curriculum, teacher training, staff development, and school-industry partnerships. It is considered that core teachers, in their superordinate and advisory roles, are catalysts for change at the institutional levels of Baise University. They need special consideration in their training and project experiences to prepare them for the role of change management. A training program that includes experiences in all aspects of the integrated package of reforms will be designed for core teachers as either an overseas program, or a combined overseas and/or domestic program. The program includes both a formal learning component and incursions/excursions to provide actual experiences of TVET reforms in another system. Specific objectives and outcomes will be designated with clear accountability for follow-up provided for participants.

52. The SGAP includes targets for male and female teachers in overseas training, domestic study tours and training in TVET institutions.

<sup>&</sup>lt;sup>6</sup> A trial set of professional standards for secondary vocational school teachers was established in 2013 to promote professional development of secondary vocational school teachers and to develop a teaching force of dual qualified teachers.

5. Develop Domestic Study Tours for Observation and Investigation based on Specific Project Reforms (MLT, industry partnerships, regional cooperation, curriculum and teaching, etc.)

## 6. Organize and Facilitate Training in PRC TVET institutions where there is Good Practice Related to Priority Areas

53. One striking feature of the TVET system in the PRC is the comparative isolation of individual institutions from other similar institutions which are addressing very similar priorities and issues. While the creation of demonstration schools is aiming to build quality in education and training (primarily through competition between schools), it has not always encouraged collaboration and cooperation between schools. This needs addressing through strategies where successful practice is observed and shared and partnerships can develop. Other institutions are tackling many of the same issues i.e. becoming a TVET applicable university, the development of an MLT system, significant curriculum reforms, and enhancing school-industry partnerships. There are also similar priority areas and majors in other schools. Project funds will be used as a catalyst for learning from and sharing with others by funding small scale study tours to academic and industry institutions and organizing staff exchanges where there are stated benefits for staff—and subsequently, their students.

# H. Component 2: Technical and Vocational Education and Training Innovation and Relevance Promoted

54. The national government's recent announcements on the expansion of TVET (e.g. the creation of 600 TVET applicable universities, the development of MLT systems, and the increased involvement of industry in school decision making) have created an environment where experimentation and innovation is encouraged. At the same time, the TVET system in the PRC is seeking to position itself through changes to become a more demand-driven system. The increasing relevance of TVET to providing solutions to the social and economic challenges facing the nation has seen increased government attention through extra funding and policy development. This funding needs to be translated into more innovative solutions that demonstrate the relevance of TVET as an important tool in government reforms.

55. This output includes strategies and accompanying activities grouped under three main components:

- (i) school-industry partnerships;
- (ii) regional cooperation; and
- (iii) research.

# I. Component 2.1: School-industry Partnerships

56. The emphasis on innovation and the increased relevance of TVET is particularly evident in the renewed national focus on strengthening school-industry partnerships. It is realized by government that more can be done to strategically develop linkages that benefit both partners i.e. seeking win-win strategies and solutions. Baise University is a good example of an institution seeking to cement current partnership arrangements and to extend this to other areas of its operation. Baise University has some good industry partnerships, primarily at the local Baise level. The focus is on students and staff work experiences and internships: industry staff contributions to classroom and workshop sessions: and, some resource sharing. This can be further extended to include more opportunities for industry participation in decision making roles, course, and qualifications design and some key quality assurance roles.

57. The project aims to enhance existing school-industry linkages, develop new and extended arrangements for participation and to explore other possibilities through opportunities for innovation and research involving both parties.

#### 1. Organize, for Staff, Industry Visits, Job Assignments, and Training Attachments which Include Specific Performance Requirements and Outcomes

58. The plans for reforms in curriculum and staff development at Baise University need to be reflected in their work with industry. The introduction of a CBC allows staff the opportunity to experience this in practice in industry attachments, providing ideas for instruction and students' assessment. This will require formal arrangements to be established by the partners to maximize the industry attachments. The plans to develop policy, guidelines and standards to reform pedagogy in line with CBA (Section 1.3.1) to reform staff training plans (Section 1.4.1) and to create more dual qualification teachers (Section 1.4.2) should be included (as appropriate) as performance requirements and outcomes in job assignments and training packages.

59. Equal number of male and female staff will participate in industry visits, job assignments, and training attachments (% target to be established once specific baseline is collected). The project will make special effort to ensure that staff member get exposure to a wide range of industry specific job opportunities.

# 2. Enterprise Education Facility Established to Enhance School-industry Partnerships and Innovation in Other Project Areas

60. A small amount of project funds have been allocated to foster school-industry partnerships that enhance student acquisition of knowledge and skills, particularly in the project's priority areas. This can include individual submissions (based on a school-industry partnership) as well as small group and faculty level submissions. The broad coverage of the project's reforms areas also provides an opportunity for developing innovative practice in one of these areas e.g. MLT system operations, assessment in CBA, student leadership program.

61. Baise University will ensure that before small grant under the enterprise education facility is disbursed to eligible recipients, Baise University submits guidelines for use and management of such grant to ADB for approval. The guidelines will include, among other things, (i) eligibility criteria for the recipients, (ii) eligible expenditures that may be financed by the grant, (iii) administration mechanism of grant including accounting and funds flow, and (iv) reporting mechanism. Once approved, Baise University shall ensure that activities financed by the grant are implemented in accordance with the agreed guidelines. Implementation guidelines will ensure principles of gender equity and social inclusions are included with regards to access to the facility. In order to operationalize these guidelines, a selection committee will be established with equal representation of male and female staff as well as those representing ethnic minority groups.

# 3. Establish School Industry Leading Groups

62. The national government's recent announcements on increased industry involvement in education and training extend to governance and management opportunities. While TVET institutions do not currently have formal Boards (with industry representation), the intent of government plans would suggest that industry can provide more advice and support through enhanced roles in at different levels of operation. To facilitate this extra support from industry, Baise University intends to establish three levels of joint decision making bodies, designated as leading groups.

- (i) School-industry committee at Baise University management level.
- (ii) School-industry partnership group to support the priority majors.
- (iii) Professional steering group at the faculty level (including industry representation).

63. The functions and roles of each of these groups need further definition to provide a framework for support and decision making regarding industry involvement. Project support to establish, monitor and review progress of the leading groups will include providing examples from other TVET systems that have well-established industry involvement in decision making.

64. Female staff will be represented on all three school industry leading groups.

# 4. Design and Implement Further Outreach Training Programs for Migrant Workers and Communities

65. Baise University, through BVS, is already engaged in running government funded short courses for migrant workers.

66. Given the large numbers of migrant workers and community members seeking further skills, this is a growth area for the TVET sector in particular.<sup>7</sup> However, access is currently limited for progression beyond SVS level and to any training provided outside of adult education classes. The application of CBA and the development of modular courses will provide more opportunities to link current training to broader qualifications. There are still issues of access and also certification that apply to short courses. The project will develop pilot courses, linked to project priority area(s) to provide models for other (later) priorities. The current issues of poor coordination and limited emphasis on high demand skill development with short courses will require ongoing discussion with the relevant government department as well as the appropriate industry sector. This needs to be a cooperative venture between all stakeholders.

# 5. Design and Implement an Entrepreneurship Incubation Program (see 1.2.5 in Curriculum Development)

67. As Section 1.2.5 indicates, the main emphasis of an entrepreneurship program will be on the development and practice of self-employment skills. It is intended to provide small scale funding support to allow students the opportunity to develop and trial an enterprise related to some aspect of the priority areas under consideration. This will require the support of (at least) the Baise University business faculty (as the sponsor of the activity), the Baise University enrollment and employment department and the relevant government agency (if/as required).

68. The Entrepreneurship Incubation Program will facilitate equal access to both male and female students.

69. Baise University enrollment and employment department will introduce career guidance and mentoring sessions separately for male and female students covering employability skills, professional behavior, different forms of occupations in selected majors and linkage to learning pathways. One of the key features of such sessions will be a special speaker series that will introduce students to potential role models, particularly female, (such as female principles of schools, female CEOs) who could present success stories of breaking the gender stereotypes and pushing the glass ceiling. This is designed to benefit

<sup>&</sup>lt;sup>7</sup> Adult education classes are also provided to cater for the large number of migrant workers who lack literacy and numeracy skills.

both male and female students who may not be aware of the wide range of job opportunities available due to existing stereotypes. Finally, a mentoring program will link female students with female faculty or women in related field. Regular meetings will be organized between the mentors and mentees so students can learn about job possibilities, workplace awareness, and other issues of concern.

70. Baise University will establish a gender recognition award for those top performing industry partners who have successfully taken steps to reduce gender inequalities in their business or to promote women in non-traditional sectors.

# J. Component 2.2: Regional Cooperation

71. The development of an MLT system at Baise University provides a unique opportunity for the institution, working with other stakeholders, to provide a range of regional services in education and training. Baise's location, as a corridor to GMS, and more broadly to countries belonging to the Association of Southeast Asian Nations, provides opportunities for Baise University that is unique in the PRC. Baise University has made a small, but promising start to regional cooperation activities through its language program in Thailand and some small scale enrollment of international students from GMS countries. There is much more potential for further activity.

72. Over the next 5 years, the project will develop many TVET services and processes that can potentially be offered to regional partners through cooperative ventures. However, Baise University and associates need time to develop the understanding and quality required before many of these activities can be developed to raise the quality and regional competitiveness of Guanxi Baise's TVET system. This should be a longer term plan and Baise University needs to take the necessary actions to prepare for this work. In the meantime there are a number of activities where the project can provide support to position Baise University and other stakeholders for further regional cooperation.

# 1. Develop and Train Baise University Management Team to Support Regional Cooperation Planning and Activities

73. Baise University will commence the planning for further regional engagement through building a team of people who will have the skills and expertise to recognize, negotiate and provide leadership and support for new initiatives. The project will work with Baise University and relevant stakeholders to identify and train a management team with the knowledge and skills required for regional cooperation work. The specific focus of the training program will be on the TVET initiatives that form the main pillars of the project i.e. developing an MLT system, TVET curriculum development, teacher training and staff development activities, school-industry partnerships—with an emphasis on priority areas that will provide the supply of high demand skills for industry. The immediate actions to support and extend regional cooperation activities include:

# a. Attend Regional Forums and Related Activities to Support Policy and Partnership Development in Regional Cooperation

74. This is an important intelligence gathering and preparatory step in determining priorities for involvement in regional work. The human resource development planning being undertaken by HRSSB can be expanded to a regional level in time. Information technology will be important to link Guangxi-Baise data to regional systems wherever possible.

# b. Develop Opportunities for Consolidation of Cross-border Language Education Programs

75. Using the current experience in the development of language programs Baise University will extend this service to other areas. This will require funding support for course development, staff training, marketing and publicity. A small amount of project funds are provided for these purposes.

# c. Develop Expanded Cooperation Opportunities with University of Thailand

76. Using existing links will allow some leverage and natural expansion into other areas.

# d. Introduce APEC Standards in Related Majors to Enhance Regional Cooperation Opportunities

77. This is an important positioning and preparatory step in aligning services and products to regional standards in priority areas (majors and courses). The project will provide policy and procedural support for these activities, which will also be included as part of the training for a small management team (2.2.1). The project will explore expansion of ethnic minority culture programs as one of the focal areas for regional collaboration.

# K. Component 2.3: Research

## 1. Develop School-industry Partnerships Regulation and Policy Development at Different Levels

78. The planned expansion of school-industry partnerships into different areas and levels of operation (e.g. governance and quality assurance) will require regulation and policy development to ensure agreed practices and arrangements are in place. It is anticipated that policy will be required at the following levels:

- (i) Provincial,
- (ii) BMG, and
- (iii) Baise University.

# 2. Research Based on Industry Sector Plans in Emerging Priority Sectors (agriculture, logistics, tourism, etc.) Linking Market Demand with the Supply and Development of Human Resources

#### 3. Apply Research Findings to Multilevel Technical and Vocational Education and Training System for Course and Qualifications Development

79. The curriculum and staff development work will produce models of courses and training programs that can be used as models in other priority sectors. Research is also required to determine future priorities and to align future curriculum and course development to industry requirements for levels of qualifications and occupations e.g. technicians and technologists. The project will support research and studies to determine future priorities. This activity has potential to further facilitate development of partnerships between industry, TVET institutions and government and develop a better understanding of the impacts of regional cooperation and economic growth on human resources needs.

80. Studies will integrate analysis of gender related disparities in priority sectors, including gender stereotype of specific majors, linked job opportunities, and salary discrepancy for males and female staff (if any). The study will also review the need for

bridging modules/courses to address rural/urban disparities for students. Such studies will also incorporate data analysis of sectors that are supposed to be growth areas (including expected salary levels) and determination of gender impacts of new economy.

## **APPENDIX 4: DRAFT TRAINING PLAN**

1. Training activities on various aspects of technical and vocational education and training (TVET) capacity building and project management will be delivered by the project consultants during the course of the project's implementation. Involvement of all stakeholders will also be encouraged (e.g. industry, government and community representatives). Wherever possible, training will be extended to include representatives from other TVET, secondary vocational schools, vocational colleges, and TVET applicable universities in Guangxi Province.

| Training Program   | Scope of Training  | Trainer  | Trainee  |
|--|--|--|--|
| Project Managemen  | nt   |  |  |
| ADB's<br>disbursement<br>procedures and<br>financial<br>management                 | <ul> <li>ADB loan disbursement<br/>procedure</li> <li>Role and responsibility of each<br/>stakeholders</li> <li>Monitoring of fund flow and<br/>utilization of loan proceeds</li> <li>Risk of delay in disbursement</li> </ul>   | Project management<br>consultants                          | BPMO, implementing<br>agency, contractors,<br>design institute,<br>environmental<br>institutions, supervision<br>company |
| Organizational<br>financial<br>management and<br>financial audit<br>system         | <ul> <li>Basic financial management of<br/>the project</li> <li>Project accounting and financial<br/>record keeping</li> <li>Internal controls and audit</li> </ul>  | Project management<br>consultants                          | BPMO, implementing<br>agency, contractors,<br>design institute,<br>environmental<br>institutions, supervision<br>company |
| Procurement and<br>contract<br>management  | <ul> <li>ADB's procurement process</li> <li>Bidding document preparation</li> <li>ADB's guideline for bid<br/>evaluation</li> <li>Risk of misprocurement and<br/>mitigation measures</li> <li>Handling variation orders and<br/>contract management</li> </ul>   | Project management<br>consultants                          | BPMO, implementing<br>agency, contractors,<br>design institute,<br>environmental<br>institutions, supervision<br>company |
| Corruption risks in<br>project<br>implementation and<br>anticorruption<br>measures | <ul> <li>Definition and type of corruption</li> <li>Risk of corruption under the project implementation</li> <li>Mitigation measures</li> <li>Institutional framework and anticorruption mechanisms</li> <li>Case studies and international best practices</li> </ul>  | Project management<br>consultants                          | BPMO, implementing<br>agency, contractors,<br>design institute,<br>environmental<br>institutions, supervision<br>company |
| Safeguard and<br>social monitoring   | <ul> <li>ADB's SPS policy</li> <li>Safeguards issues relevant to<br/>the project</li> <li>Social inclusion</li> <li>Gender awareness and<br/>eliminating gender bias in<br/>learning materials</li> <li>Legal requirements</li> <li>Specific social and gender<br/>issues relevant to the project</li> <li>Implementation of EMP and<br/>SGAP</li> <li>Role and responsibility of<br/>different stakeholders</li> <li>Monitoring and reporting<br/>mechanisms and information<br/>handling</li> <li>Grievance redress mechanism</li> </ul> | Project management<br>consultants and external<br>monitors | BPMO, implementing<br>agency, contractors,<br>design institute,<br>environmental<br>institutions                         |

| Training Program   | Scope of Training                               | Trainer                   | Trainee                                    |
|--------------------|---|---------------------------|--|
|                    | Green campus                                    |                           |  |
| Project monitoring | performance management                          | Project management        | BPMO, implementing                         |
| and                | Results based techniques                        | consultants and external  | agency, contractors,                       |
| evaluation         | PPMS reporting                                  | monitors                  | design institute,                          |
|                    | requirements                                    |                           | environmental                              |
|                    | Tracer and industry surveys                     |                           | institutions, and                          |
|                    | Refresher modules                               |                           | supervision company                        |
| Technical Vocation | al Education and Training, and Capac            | city Building             | L  |
| MLT system: the    | Presentation of policy and                      | Team leader/ deputy       | All Baise                                  |
| purpose, benefits, | guidelines for MLT system                       | supported by implementing | University staff                           |
| architecture and   | Overview of key features e.g.                   | agency and executing      | All project                                |
| operation of the   | integrated system, importance of                | agency                    | stakeholders                               |
| system             | linking levels, learning pathways,              |                           | (government,                               |
|                    | improved access, industry                       |                           | industry, and                              |
|                    | responsiveness                                  |                           | community                                  |
|                    | Updates on:                                     |                           | representative)                            |
|                    | - Employment information                        |                           |  |
|                    | data system                                     |                           |  |
|                    | <ul> <li>Industry survey information</li> </ul> |                           |  |
|                    | <ul> <li>Communication and</li> </ul>           |                           |  |
|                    | outreach strategy                               |                           |  |
|                    | <ul> <li>Updates on MLT through</li> </ul>      |                           |  |
|                    | workshops during the course of                  |                           |  |
| -                  | the project                                     |                           |  |
| Employment         | Training in use of the                          | National company          | <ul> <li>Teaching affairs,</li> </ul>      |
| information        | employment information                          | employed to develop the   | human resources,                           |
| management         | management system                               | system                    | and senior                                 |
| System             |   |                           | Raiso University                           |
| Industry survey    | Training in tracer study and                    | Team leader deputy and    | Teaching affairs                           |
| information        | industry survey data gathering                  | national school industry  | human resources                            |
|                    | and analysis (benefits)                         | consultant                | and senior                                 |
|                    |   |                           | management of                              |
|                    |   |                           | Baise University                           |
| CBA to curriculum  | Basic concepts and benefits of                  | Curriculum development    | <ul> <li>It is anticipated that</li> </ul> |
| design and         | CBA   | consultants               | all teachers at                            |
| development:       | Development and upgrading of                    |                           | Baise University,                          |
| instructional      | competency standards                            | Teacher Training          | Baise vocation                             |
| practices and      | Curriculum built around                         | consultants               | college, and Baise                         |
| assessment         | competency standards:                           |                           | vocational school                          |
|                    | application of CBA to majors and                |                           | will receive general                       |
|                    | courses in priority sectors (five               |                           | training in CBA                            |
|                    | initial plus two emerging sectors)              |                           | <ul> <li>Priority maior</li> </ul>         |
|                    | Competency-based assessment:                    |                           | teachers and core                          |
|                    |   |                           | teachers will                              |
|                    | Quality assurance arrangements                  |                           | receive extra                              |
|                    | Application of CBA to a MLI                     |                           | workshops to                               |
|                    | System  |                           | develop and apply                          |
|                    | for CBA   |                           | CBA in priority                            |
|                    |   |                           | areas                                      |
|                    |   |                           | Stakeholder group                          |
|                    |   |                           | representatives                            |
|                    |   |                           | should be involved                         |
|                    |   |                           | in general training                        |
| Migrant worker     | Training in CBA. learning                       |                           | MHRSS and                                  |
| (adult education)  | pathways, and adult learning                    |                           | relevant                                   |
| courses            | styles  |                           | government                                 |
|                    | Application of training to priority             |                           | departments and                            |

| Training Program  | Scope of Training  | Trainer   | Trainee   |
|---|--|---|---|
|   | sector programs through training workshops   |   | <ul> <li>industries</li> <li>Priority sector<br/>teachers (involved<br/>in course delivery)</li> </ul>  |
| Entrepreneurship<br>(enterprise)<br>education                                 | <ul> <li>Workshops to develop<br/>entrepreneurship education<br/>curriculum and support materials</li> <li>Presentation of entrepreneurship<br/>education Curriculum to<br/>teachers and stakeholders in<br/>priority sectors</li> <li>Information seminars on<br/>Entrepreneurship incubator<br/>project</li> </ul>   | Enterprise education<br>consultants   | <ul> <li>Baise University<br/>working groups<br/>with industry<br/>representatives</li> <li>Core teachers,<br/>deans, stakeholder<br/>reps</li> </ul> |
| Core teacher<br>training  | <ul> <li>Workshops for definition and for<br/>preparation of role</li> <li>Domestic and International<br/>training course for Core<br/>Teachers in key TVET reforms<br/>(MLT system, CBA,<br/>entrepreneurship education,<br/>school-industry partnerships)</li> </ul>   | Teacher training<br>consultants<br>Outsourced to TVET<br>training organization  | <ul> <li>60 core teacher<br/>trained with<br/>representation from<br/>all majors</li> <li>30 core teachers<br/>from priority<br/>sectors</li> </ul>   |
| Human resources<br>performance<br>standards and<br>incentives for<br>teachers | <ul> <li>Revision of staff assessment<br/>scheme to incorporate MLT<br/>system elements into the<br/>scheme</li> <li>Development of staff incentives'<br/>scheme for teachers engaged in<br/>project and more broadly</li> </ul>   | Teacher training<br>consultants   | Working group of<br>senior staff and<br>teachers  |
| Leadership<br>development<br>program  | <ul> <li>Overseas visit to undertake<br/>leadership course in managing<br/>TVET reforms (as per project)<br/>and visiting TVET agencies and<br/>institutions as working best<br/>practice examples of leadership<br/>and management</li> <li>Individual tasks that contribute to<br/>the reform program at Baise<br/>University and associated<br/>institutions</li> </ul> | Outsourced to TVET<br>training organization:<br>group of national<br>consultants (coordinated by<br>teacher training consultant | Senior leadership<br>group from Baise<br>University, BVC, and<br>BVS with some<br>stakeholder<br>representation in group                              |
| Domestic study<br>tours and work<br>shadowing<br>programs                     | <ul> <li>Tours related to specific project<br/>initiatives: observation of best<br/>practice in CBA, priority areas,<br/>other aspects of TVET reforms</li> </ul>  | Implementing agency/Biase<br>University to organize   | All staff: study/work<br>shadowing programs<br>to support the project's<br>implementation   |
| Establishment of<br>TVET association  | <ul> <li>Initial meeting(s) to form<br/>association</li> <li>Initial conference to launch<br/>association</li> </ul>   | Team leader/deputy to<br>assist Baise University to<br>organize conference  | Baise TVET institutes:<br>invitations to all<br>stakeholders and other<br>Guangxi TVET<br>institutes  |
| Leading groups<br>establishment   | <ul> <li>Training in school-industry<br/>partnership development</li> <li>Training in writing industry<br/>agreements</li> </ul>   | Deputy  | Baise University senior<br>management plus<br>industry and<br>government<br>representatives   |
| Entrepreneurship<br>(enterprise)<br>education facility                        | Training in the development of<br>small scale projects for fostering<br>industry education links or<br>developing self-employment<br>ideas   | Deputy and<br>entrepreneurship education<br>consultant  | Interested teachers<br>and students in<br>partnerships with<br>industry   |

| Training Program                           | Scope of Training   | Trainer                            | Trainee   |
|--|---|------------------------------------|---|
| Regional<br>cooperation<br>management team | <ul> <li>Training of small management<br/>team (10 people) in regional<br/>cooperation strategies: realizing<br/>opportunities e.g. APEC<br/>standards, leveraging on<br/>existing activities, promotional<br/>activities, etc.</li> <li>Conference to present Baise<br/>University strategy for regional<br/>cooperation in partnership with<br/>other stakeholders</li> </ul> | Regional Cooperation<br>Consultant | Baise University<br>representative team<br>development reform<br>commission, industry<br>associations, HRSSB,<br>environment bureau<br>All stakeholders |
| Outcomes of<br>research projects           | <ul> <li>Seminar to present key findings<br/>and benefits from research grant<br/>supported projects and activities</li> </ul>  | Deputy (school -Industry role)     | All stakeholders  |

ADB = Asian Development Bank, APEC = Asia-Pacific Economic Cooperation, BPMO = Baise project management office, BVC = Baise vocational college, CBA = curriculum-based approach, EMP = environmental management plan, EPB = environment protection bureau, GAP = gender action plan, HRSSB = Human Resources and Social Security Bureau, MLT = multilevel TVET, PPMS = project performance management system, SGAP = social and gender action plan, SPS = safeguard policy statement, SVS = secondary vocational school, TVET = technical and vocational education and training.

#### **APPENDIX 5: CAMPUS CONSTRUCTION**

1. The transition of Baise University from an academic to a TVET applicable university requires a significant upgrade in infrastructure and equipment. The emphasis on science and technology courses, which are central to this transition, requires specialized facilities that address this change of focus. The BU campus needs to accommodate a multilevel system that gives more attention to three integrated stages of TVET that each requires purpose-built teaching and learning spaces beyond what the current buildings and equipment provide. For example, the plans for development of the Green Sustainability Center and a TVET teacher training facility are two of the specialist needs for the campus.

2. The planned change to a competency-based approach as the medium for instruction and assessment is another dimension that needs addressing through appropriate infrastructure and equipment. This approach will provide more opportunities for students to participate in hands-on instruction and assessment in both simulated and actual learning experiences. It requires more workshops and practical learning spaces than the current facilities provide. The new campus facilities and equipment will allow a MLT system to function and be responsive to industry driven demands for knowledge and skills. The new and improved infrastructure and equipment will support this transition to a TVET applicable institution.

3. The project will assist Baise University to construct Phase II of a new campus at Chengbi in the north of Baise City. Baise University has two campuses, a main campus of Donghe in Baise downtown area, including Donghe east campus  $(145 mu)^1$  and Donghe west campus (43 mu); and the second campus of Chengbi at about 5 kilometers north of Baise. The Chengbi Campus also has the east (1,498 mu) and west (187 mu) campuses. The new campus will be built at Chengbi east campus and will allow for a doubling of the current students enrollment. Based on the current Baise University planning, after the completion of Chengbi new campus, all school departments and facilities will move to the new campus. The existing Donghe east and west campuses will be converted into facilities for the secondary vocational school, living areas for staff and students, facilities for offering graduate level courses, and a kindergarten. The existing Chengbi west campus will be converted into staff housing. The construction of Chengbi campus construction will be divided into three phases. Phase I construction, which is financed by the domestic funding, is in progress; Phase II construction is the proposed project and will be financed partially by ADB; and Phase III construction is in the planning stage and will be implemented in the future.

4. The new campus has a total area of 99.9 hectares (ha) (1,498 *mu*), and the dimensions are about 1,210 meter (m) in north-south direction and 1,470 m in east-west direction. According to the campus master planning, there will be a total of 24 buildings and facilities at the new campus for teaching, experiment and training, living, and supporting structures. The summary of the overall campus buildings and facilities are shown in **Table 1**.

|     |  | Foot Area | Building               |       |        |
|-----|--|-----------|------------------------|-------|--------|
| No. | Name   | (m²)      | Area (m <sup>2</sup> ) | Story | Remark |
| 1   | Engineering experimental and training center | 3,225     | 19,600                 | 6     |        |
| 2   | GMS TVET teaching building                   | 2,844     | 11,800                 | 6     |        |
| 3   | Library                                      | 6,112     | 28,000                 | 8     | П      |

## Table 1: Summary of Overall Planned Campus Facilities

<sup>1</sup> Chinese unit of measurement.

| No. | Name   | Foot Area<br>(m <sup>2</sup> ) | Building<br>Area (m <sup>2</sup> ) | Story | Remark |
|-----|--|--------------------------------|------------------------------------|-------|--------|
| 4   | Public experimental center                       | 4,700                          | 22,190                             | 6     |        |
| 5   | Public teaching center                           | 3,113                          | 20,480                             | 6     | П      |
| 6   | Administration building                          | 3,658                          | 10,000                             | 9     |        |
| 7   | Business school building                         | 1,575                          | 8,000                              | 6     | П      |
| 8   | Politics and law department building             | 1,820                          | 8,000                              | 6     | II     |
| 9   | Physics, electronics, and math building          | 2,970                          | 17,800                             | 6     | П      |
| 10  | Chemistry and biology department building        | 2,970                          | 17,800                             | 6     | П      |
| 11  | Art and science education building               | 3,500                          | 16,200                             | 6     | П      |
| 12  | Chinese and foreign language department building | 3,200                          | 16,150                             | 6     | П      |
| 13  | Student career center                            | 2,320                          | 12,500                             | 6     |        |
| 14  | School clinic                                    | 727                            | 1,100                              | 2     |        |
| 15  | Student dormitory I                              | 6,400                          | 38,250                             | 6     |        |
| 16  | Student dormitory II                             |                                | 50,000                             | 6     | П      |
| 17  | Student cafeteria                                | 3,138                          | 5,266                              | 2     |        |
| 18  | Student and teacher cafeteria                    | 2,545                          | 7,600                              | 2     |        |
| 19  | Academic center                                  | 1,500                          | 10,000                             | 8     |        |
| 20  | Business mall                                    | 15,000                         | 30,000                             | 2     |        |
| 21  | Gymnasium and physical education building        | 4,187                          | 8,200                              | 2     | П      |
| 22  | Track and field platform                         | 2,321                          | 2,321                              | 1     |        |
| 23  | Solid waste transfer station                     | 300                            | 300                                | 1     |        |
| 24  | Wastewater treatment plant                       | 300                            | 300                                | 1     |        |
|     | Total =  | 78,425                         | 361,857                            |       |        |

GMS = Greater Mekong Subregion,  $m^2$  = square meter, TVET = technical and vocational education and training. Source: Consultants.

5. The civil works involve the construction of site work and site utilities, teaching, and living buildings and facilities, and equipment procurement and installation. Phase I construction is mainly for the buildings and facilities in the west side of the campus, including campus roads, center scenery area, engineering experimental and training center, teaching building for GSM technical and vocational training and education, public teaching center, public experimental center, student cafeterias, dormitories, and sports facilities. Phase II construction is mainly at the east and central parts of the campus. The summary of Phase II component is shown in **Table 2.** The summary of the teaching and lab equipment to be procured by domestic funding is shown in **Table 3.** The equipment mainly includes the training and teaching equipment for various labs and classrooms such as aluminum lab, chemistry lab, language lab, etc. The total civil works construction and equipment purchase and installation cost is about \$82.4 million, and the estimated total investment is \$103.9 million.

| N                 | N   |   | Building                         | 0      | <b>D</b> |
|-------------------|---|---|----------------------------------|--------|----------|
| <u>No.</u>        | Name  | Foot Area (m <sup>-</sup> )   | Area (m <sup>-</sup> )           | Story  | Remark   |
| 1                 | Library   | 5,019   | 27,545                           | 8      |          |
| 2                 | Administration building   | 3,169   | 12,338                           | 8      |          |
| 3                 | Gymnasium and physical education building   | 3,625   | 8,751                            | 4      |          |
| 4                 | Business school building  | 2,090   | 8,788                            | 6      |          |
| 5                 | Politics and law department building  | 1,491   | 8,295                            | 6      |          |
| 6                 | Chinese and foreign language department building  | 3,286   | 16,448                           | 9      |          |
| 7                 | Physics, electronics, and math building   | 3,412   | 19,538                           | 6      |          |
| 8                 | Chemistry and biology department building   | 1,907   | 10,167                           | 6      |          |
| 9                 | Art and science education building  | 3,854   | 17,006                           | 6      |          |
| 10                | Dormitory B1  | 2,380   | 13,600                           | 5      |          |
| 11                | Dormitory B2  | 1,080   | 9,060                            | 6      |          |
| 12                | Dormitory B3  | 1,564   | 9,157                            | 6      |          |
|                   | Photovoltaic power system   | Capacity =<br>3,860,000 kwh   |                                  |        |          |
|                   | Outdoor sports facilities   | basketball,<br>badminton, tennis  |                                  |        |          |
|                   | Slope protection and retaining walls  | Area = $40,606 \text{ m}^2$   |                                  |        |          |
|                   | Teaching and training equipment   |   |                                  |        |          |
|                   | Total =   | 32,877  | 160,693                          |        |          |
| 11<br>12<br>Kwh = | Dormitory B2<br>Dormitory B3<br>Photovoltaic power system<br>Outdoor sports facilities<br>Slope protection and retaining walls<br>Teaching and training equipment<br><b>Total =</b> | 1,080<br>1,564<br>Capacity =<br>3,860,000 kwh<br>basketball,<br>badminton, tennis<br>courts<br>Area = 40,606 m <sup>2</sup><br>32,877 | 9,060<br>9,157<br><b>160,693</b> | 6<br>6 |          |

# Table 2: Phase II Buildings and Facilities

Kwh = kilowatt hour,  $m^2$  = square meter. Source: Consultants.

# Table 3: Summary for Teaching and Lab Equipment

|     |                                       |      |          | Unit Price | Cost      |        |
|-----|---------------------------------------|------|----------|------------|-----------|--------|
| No. | Description                           | Unit | Quantity | (10k CNY)  | (10k CNY) | Remark |
| 1   | Casting mold lab                      | set  | 1        | 261.47     | 261.47    |        |
| 2   | Electronic simulation lab             | set  | 1        | 82.42      | 82.42     |        |
| 3   | Aluminum lab                          | set  | 1        | 298.30     | 298.30    |        |
| 4   | Physics, chemistry, and material lab  | set  | 1        | 251.50     | 251.50    |        |
| 5   | Chemical engineering lab              | set  | 1        | 135.00     | 135.00    |        |
| 6   | Corrosion protection lab              | set  | 1        | 90.00      | 90.00     |        |
| 7   | Chemical engineering simulation lab   | set  | 1        | 80.00      | 80.00     |        |
| 8   | Tropical biology lab                  | set  | 1        | 284.50     | 284.50    |        |
| 9   | Natural organic lab                   | set  | 1        | 290.00     | 290.00    |        |
| 10  | Agricultural product lab              | set  | 1        | 444.26     | 444.26    |        |
| 11  | ERP lab                               | set  | 1        | 50.00      | 50.00     |        |
| 12  | E-commerce lab                        | set  | 1        | 60.00      | 60.00     |        |
| 13  | Language lab                          | set  | 1        | 50.00      | 50.00     |        |
| 14  | Digital language lab                  | set  | 1        | 88.40      | 88.40     |        |
| 15  | Multipurpose language learning center | set  | 1        | 253.00     | 253.00    |        |
| 16  | Internet and information lab          | set  | 1        | 161.20     | 161.20    |        |
| 17  | Internet engineering lab              | set  | 1        | 358.00     | 358.00    |        |
| 18  | Intelligence control engineering lab  | set  | 1        | 202.70     | 202.70    |        |
| 19  | Communication engineering lab         | set  | 1        | 597.76     | 597.76    |        |

|     |  |      |          | Unit Price | Cost      |        |
|-----|--|------|----------|------------|-----------|--------|
| No. | Description                              | Unit | Quantity | (10k CNY)  | (10k CNY) | Remark |
| 20  | Ethnic minority culture teaching lab     | set  | 1        | 157.00     | 157.00    |        |
| 21  | Digital media art lab                    | set  | 1        | 122.22     | 122.22    |        |
| 22  | Fashion design lab                       | set  | 1        | 46.45      | 46.45     |        |
| 23  | Art lab                                  | set  | 1        | 50.68      | 50.68     |        |
| 24  | Clay art lab                             | set  | 1        | 63.12      | 63.12     |        |
| 25  | Textile coloring lab                     | set  | 1        | 112.35     | 112.35    |        |
| 26  | Tourism planning lab                     | set  | 1        | 200.08     | 200.08    |        |
| 27  | You river basin cultural research center | set  | 1        | 110.20     | 110.20    |        |
| 28  | Piano room                               | set  | 1        | 135.00     | 135.00    |        |
| 29  | Acoustic lab                             | set  | 1        | 48.18      | 48.18     |        |
| 30  | Music room                               | set  | 1        | 32.19      | 32.19     |        |
| 31  | Minority performance hall                | set  | 1        | 220.78     | 220.78    |        |
| 32  | Library information system               | set  | 1        | 547.84     | 547.84    |        |
| 33  | Campus network system                    | set  | 1        | 512.90     | 512.90    |        |
|     | Total =                                  |      |          |            | 6,397.50  |        |

ERP = enterprise resource planning. Source: Consultants.

6. The campus design was carried out in accordance with national governing regulations and design codes. The design adopted the approach of green development and energy conservation by introducing solar photovoltaic power system, onsite wastewater treatment, and reuse system (financed and constructed in Phase I), energy efficient construction materials, etc. The major governing design codes and specifications include:

- (i) Universal Design Code GB50763-2012,
- (ii) Building Design Code GB50352-2005,
- (iii) Fire Prevention Design Code for High Rise Buildings GB50045-95,
- (iv) Energy Conservation Design Standards for Public Buildings GB50189-2005,
- (v) Library Building Design Code JGJ38-89,
- (vi) Building Seismic Design Code GB50011-2001, and
- (vii) Building Foundation Design Code GB50007-2011.

7. The engineering design includes the campus master planning development for campus traffic planning, road network design, fire truck route design, emergency evacuation planning, site utility design, slope protection, etc. The school will also install the campus security system, which will be designed and installed later by domestic fund.

## D. Project Special Features

# 1. Green Sustainability Center

8. The project will support Baise University in defining a campus sustainability strategy (by 2015), and establishing a Green Sustainability Center (by 2017), to be coordinated by Baise University's Comprehensive Affair Department. The sustainability center will build on ongoing sustainability programs and initiatives of Baise University, and aim at ensuring sustainable environmental path for Baise University. The sustainability center will aim at greening campus practices, curriculum development, and community awareness, with a strong focus on low-carbon, energy- and resource-efficient campus management. The center will identify options to reduce, reuse, and recycle waste management in the campus; develop and implement a MSW

management; and minimization strategy. As part of the sustainability center, Baise University will establish a designated safety and security unit in charge of the campus security and safety, develop an emergency evacuation plan, and conduct emergency evacuation drills and education program. Under the loan implementation consultancy services a national campus sustainability planning specialist will support Baise Universityand its Comprehensive Affairs Bureau in defining a campus sustainability policy, and developing the sustainability center with clear strategic objectives, sustainability programs, institutional structure, terms of reference. The Sustainability Strategy and the sustainability center will cover the entire campus, including Phase 1 and Phase 2, as well as Phase 3 should this be implemented in future. Curriculum development incorporating green technologies, environmental sustainability, etc. will be fostered and promoted through the sustainability center. Community outreach programs for the campus and Baise will be conducted under the center and with relevant campus departments.

# 2. Photovoltaic Power Generation System

9. In order to promote the application of renewable energy and to demonstrate the use of solar power, a photovoltaic power generation system will be installed on top of the school buildings. The total design capacity will be 3.86 million kilowatt hour, and the power generated will be used for lighting, air conditioning, hot water, and other school operation uses. The power generated will be used within the campus and it will not be integrated into the state grid system. The estimated power generation will account for about 15% of the total campus consumption, which will save significantly on electrical bills for future school operation.

10. The proposed photovoltaic system consists of photovoltaic panels, which will be installed on top of the school buildings that have flat roof top, transformers, electrical conversion and control system, wiring cable, and monitoring system. The estimated construction cost is about CNY29.58 million.

# 3. Wastewater Treatment and Reuse System

11. The campus site water system, including the lake and center water pond system relies on the flood water discharged from a river in south of the campus. In order to promote wastewater reuse and environmental protection, a wastewater treatment and reuse system will be built and installed to collect and treat the campus sewage water to meet class I-A and reuse the treated water for the campus lake and water body system. The design capacity of the system is 2,000 cubic meter per day; the system will reduce chemical oxygen demand discharge of about 75 ton per year and saving water for about 6 million cubic meter.

# 4. Energy Conservation Construction Materials

12. New energy conservation construction materials have been proposed for the new campus buildings. The energy conservation concrete hollow blocks, which have better insulation properties than conventional concrete masonry blocks and are of lighter weight, will be used for all exterior walls. The sintered porous brick (shale) will be used for exterior walls. High efficiency energy saving lighting will be used for the new school building. The high strength reinforcing steel will be used in the building structure, which will save steel usage in comparison to the conventional steel. The use of exterior glass walls will be avoided as much as possible to improve the building energy consumption. The energy saving design is conducted following the PRC energy saving codes and regulations, including:

- (i) Guidelines for Energy Saving in Engineering Design (GBJ6-85),
- (ii) Energy Saving for Public Building (GB50189-2005), and

(iii) Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007).

# 5. Heat Pump Hot Water and Air Conditioning System

13. The energy efficient hot pump system will be used for campus air conditioning systems in administration building and library, and hot water. The proposed heat pump system is an integrated system to provide cooling and heating for two school buildings (administration building and library) and hot water for the student dormitories. The proposed heat pump system is an energy efficient system to use heat exchange with the water body (the lake) in the campus to achieve heating or cooling effects. It is more energy efficient in comparison to the typical electrical hot water or air conditioning system. The hot water produced by the system will be supplied to the student dormitories by pipelines.

# Appendix 4 Summary Financial Analysis

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

# FINANCIAL ANALYSIS

## A. Introduction

1. The financial due diligence includes (i) a brief overview on financing of education and technical and vocational education and training (TVET), including a brief background and challenges on the regulatory and funding framework for TVET; (ii) an assessment of the financial position of the executing agency, Baise Municipal Government (BMG) and the implementing agency, Baise University; (iii) a fiscal impact analysis of BMG and financial sustainability analysis of the Baise University; and (iv) financial management assessment (FMA) conclusion of BMG and Baise University, in accordance with relevant Asian Development Bank (ADB) guidelines.<sup>1</sup>

# B. Overview of Financing of Education, and Technical and Vocational Education and Training

2. Country context. Government financing for education and training in the People's Republic of China (PRC) has been historically low by international standards measured by the percentage over gross domestic product (GDP). In 1995, at all levels of governments, the PRC spent about 2.5% of its GDP on education but 30% of its GDP on physical investment. These figures were 5.4% and 17% in the United States, respectively. By 2002, the public spending in the PRC on education increased to 3.3%. By 2012, it further increased to 4.28%, or 16.1% of all public fiscal expenditures, according to official sources.<sup>2</sup> Although increasing rapidly, the level is still lower than most developed countries, such as the United States whose level of 5.5% and Western European countries averaged at above 6%. Local governments cover more than 80% of total public spending on education. In the PRC, vocational and technical education is the responsibility of local governments. Central government funding for TVET is very limited and only for special projects for selected key institutions. For most of the TVET institutions, financing has been inadequate for improvements needed in faculty, curriculum, pedagogy, equipment, and facilities. Based on international experience, TVET tends to be more expensive than general education on a per student basis due to higher demand for equipment and other facilities. However, in the PRC, expenditure per student for TVET is lower, indicating a lower investment in these areas.

3. Returns to education are surprisingly high in the PRC. Research shows that the return to higher and TVET education is as high as 30% to 40% (Fleisher and Wang, 2004).<sup>3</sup> The wage premium paid to the skilled workers was low historically due to wage policy effects. In the recent decade, market wage rates for the skilled workers are more in line with their productivity. Recent studies on the return of education in the PRC, using market wage rates, show that there is a 7.5% return on wage level per year of post-secondary education (e.g., Zhong, 2011).<sup>4</sup> This translates to 30% incremental wage level for a regular 4-year college education.

4. Financing of education and technical and vocational education and training in Guangxi Zhuang autonomous region. Guangxi Zhuang autonomous region's (GZAR)

<sup>&</sup>lt;sup>1</sup> The financial management assessment was conducted in accordance with ADB's *Financial Due Diligence: A Methodology Note, 2009.* 

<sup>&</sup>lt;sup>2</sup> http://www.moe.gov.cn/publicfiles/business/htmlfiles/moe/s3040/201312/161346.html

<sup>&</sup>lt;sup>3</sup> B. Fleisher and X. Wang. 2004. Skill Differentials, Return to Schooling and Market Segmentation in a Transition Economy: The Case of Mainland PRC. *Journal of Development Economics*. 73(1). pp. 315–328.

<sup>&</sup>lt;sup>4</sup> H. Zhong. 2011. Returns to Higher Education in China: What is the Role of College Quality? *China Economic Review*. 22. pp. 260–275.

expenditure on education as a percentage of its GDP has remained stable at 3.1% over the period 2010–2012, slightly lower than the PRC average (about 3.5% in 2011) and significantly lower than OECD's average of 5.8%. As a percentage of total government expenditures, education spending has decreased from 15.5% to 13.3% during 2009–2012. GZAR's education expenditure for TVET has been very low, about 9.0%, in 2012, of its total annual education expenditure or about 1.2% of the GZAR's total government expenditure. Table 1 shows trends in education expenditure in Guangxi.

| Guangxi   | 2009  | 2010  | 2011    | 2012    |
|---|-------|-------|---------|---------|
| Guangxi total GDP (CNY billion)   | 775.9 | 957.0 | 1,172.1 | 1,300.0 |
| GDP annual growth rate  | 10.5% | 23.3% | 22.5%   | 10.9%   |
| Guangxi Government total expenditure (CNY billion)                          | 162.3 | 200.8 | 254.5   | 296.5   |
| Government total expenditure as % of GDP                                    | 20.9% | 21.0% | 21.7%   | 22.8%   |
| Guangxi Government education expenditure (CNY billion)                      | 25.1  | 29.7  | 36.7    | 39.5    |
| Education expenditure as % of GDP   | 3.2%  | 3.1%  | 3.1%    | 3.0%    |
| Education expenditure as % of Guangxi Government total expenditure          | 15.5% | 14.8% | 14.4%   | 13.3%   |
| Guangxi Government expenditure for TVET (CNY billion)                       | 2.3   | 3.3   | 3.5     | 3.6     |
| Expenditure for TVET as % of total Guangxi Government expenditure           | 1.4%  | 1.7%  | 1.4%    | 1.2%    |
| Expenditure for TVET as % of total Guangxi Government education expenditure | 9.0%  | 11.3% | 9.5%    | 9.0%    |
| Source: Guangxi Statistical Yearbooks                                       |       |       |         |         |

| Table 1: | Trends i | n the | Financing | of Ed | ucation. | GZAR.                                 | 2009- | -2012 |
|----------|----------|-------|-----------|-------|----------|---------------------------------------|-------|-------|
|          |          |       |           |       |          | · · · · · · · · · · · · · · · · · · · |       |       |

5. Similar to the practice in other provinces in the PRC, GZAR's TVET schools have been financed largely by (i) fiscal budgetary resources; (ii) school-generated incomes from tuition fees, accommodation fee, and training fee; (iii) donations; and (iv) other income sources. Public funds from central and local government budgetary funds are the largest source of financing for public TVET institutions at secondary and tertiary levels. TVET institutions receive funding from government ranging from CNY4,000–5,000 per student per year. In Baise University, per student fiscal transfers received was CNY4,499 in 2013 and CNY4,908 in 2014. The tuition fees and dormitory charges constitute another income source for schools. For example, in per student terms, such revenues were CNY5,256 in 2013 and CNY6,167 in 2014. A few institutions augment their funds through commercial loans, grants, and subsidies from government for capital development and other requirements.

6. Government budgetary resources are provided to TVET colleges and secondary schools through (i) grants (i.e., operational, civil works, and research), (ii) educational surtax, (iii) grants and investments from private sector, and (iv) social grants.

7. Since 2008, with total admissions in TVET schools exceeding admission targets every year, Guangxi has invested over CNY7.5 billion on school development, including newly built campuses with a total area of 3.3 million acres, newly added spaces of 3.27 million square meters, newly procured equipment estimated at CNY1.65 billion, and about 2.5 million new books.5 In Baise, total admissions of TVET students are increasing rapidly. For instance, in 2013, total admission was 167% of the targeted figure.

8. **Tuition fees.** Basic tuition fees at tertiary TVET institutions were CNY3,727 per student per academic year in 2012 and fees up to a ceiling of CNY7,000 can be levied (except fine arts major whose ceiling was CNY9,000). However, in June 2013, GZAR government increased its tuition ceilings by 36.2%. This is meant to address the increasing debt accumulated by the educational institutions in GZAR, which was CNY5.92 billion by the end of 2011. The

<sup>&</sup>lt;sup>5</sup> <u>http://www.chinanews.com/edu/2011/06-15/3113924.shtml</u>

increased tuition is also expected to have a positive impact on the educational quality provision. Since private return to education increased substantially in the past two decades, such tuition increase is tiny compared to the private return from education attainment, thus it is to be absorbed by the students and their families.

# C. Financial Sustainability Analysis

9. Background. Financial sustainability analysis was undertaken at BMG and Baise University level. The ADB loan will be made to the Government of the PRC who will relend it to the GZAR, who will in turn on-lend it to BMG on the same terms and conditions as those of the ADB loan. The loan proceeds will then be made available to Baise University for construction and implementation of the project. Apart from ADB loan proceeds that will cover 48.3% of the total investment cost, 39.3% will be funded by BMG's counterpart funds. Baise University will cover the rest of the 12.5% of the funding requirement through domestic borrowing from China Construction Bank. BMG will assume the foreign exchange and interest rate variation risks to the loan amount it receives. BMG will be responsible for debt servicing and repayment guarantees, and has given assurances on the timely availability of counterpart funds. The objectives of the analysis were to (i) assess the financial capacity of BMG to provide counterpart funding and to service debt during and after implementation; (ii) review the historical financial capacity of Baise University based on sources and uses of funding, and determine how much incremental expenditure it can support; and (iii) assess the financial capacity of Baise University to provide counterpart funding (where required), and later to fund incremental operation and maintenance (O&M) costs, and debt service requirements.

10. **Fiscal impact on Baise municipal government.** BMG's current fiscal condition remains sound. Its fiscal revenues have increased by an average rate of 15.52% over the last 5 years (2008–2012) to CNY9,812 million in 2012 from CNY55.09 million in 2008. Over the same period, public expenditures have increased at 21.57% per annum.

11. A detailed financial projection and the fiscal impact due to the project were prepared for BMG. Historical average annual growth rates are assumed to forecast the government revenues and expenditures for the coming years. The financial sustainability analysis involves comparing the estimated counterpart funds with the government revenues during the implementation period, and comparing the O&M and debt service with the government revenues during the operating period.

12. The results show that the annual counterpart funds comprise 0.13% to 1.08% of projected revenues during the implementation period. On the other hand, debt service and O&M is about 0.05% to 0.65% of annual projected revenues and represents reasonable proportion of the government expenditures at the start of the operating period. BMG's financial capacity is therefore considered adequate to provide counterpart funding and to service ADB loan.

13. **Financial sustainability analysis on Baise University.** Like most state-owned schools, Baise University relies on government budget support every year. Due to the practice of balanced budgets, revenue, and expenditure flows result in minimal net incomes. The school received substantial increases in government budgetary allocations, averaging around 30.25% annually from 2009 to 2014. The fiscal funds received from BMG are only about 40% of the total fiscal transfers as the school also get support from higher level government. Revenues of Baise University in 2013, comprise on average, the following: (i) 44.30% public fiscal funds, (ii) 31.16% tuition and dormitory charges, and (iii) 23.82% other revenues. Total revenues are thus diversified and the financial capacity of the institution is more robust against negative revenue

impacts or exposure to financial risks. Baise University plans to borrow from a commercial bank to fulfil its share of the counterpart funding requirement which is about 12.5% of the total project cost. This borrowing amount is within a reasonable scale in terms of repayment capacity. Normally, the relevant local government will provide an informal assurance for any local commercial bank loan of a TVET institution, but does not enter into a formal guarantee.

14. Financial projections of Baise University were prepared in order to assess their financial capacity to provide counterpart funds, fund incremental O&M costs, and service debt. The projections were only made up to 2023, which is the year that Baise University's student enrollment will reach to a stable figure. Debt servicing costs will decline thereafter and the financial impact of the project on the TVET institutions also declines each year.

15. It is projected that in year 2020, Baise University would be able to provide counterpart funds for the ADB project, operate and maintain the assets, and cover the debt service requirements of the proposed loan. Annual debt service obligations are estimated to start from 2.79% of Baise University's total estimated revenue in 2020 and continuously decline to 1.91% by 2023; the projected annual incremental project O&M costs ranged from 6.64% to 6.21% of projected annual revenues during 2020–2023 period. These results indicate acceptable fiscal risk, as the revenues are expected to grow in line with economic development.

16. The post-implementation incremental O&M expenditure is relatively small compared to total revenue and can be financed without much difficulty. Baise University has the capacity to meet this requirement from discretionary fee income. The introduction of capacity strengthening under the project and ongoing sector reforms will likewise contribute towards increasing its financial independence and self-sufficiency. This will be undertaken through partnerships with industry through production sales, contracts for technical training courses for enterprises, and short-term skills upgrading courses for workers.

# D. Financial Management Assessment

15. FMA was carried out using ADB FMA questionnaire. The financial management assessment is to determine whether or not the financial management arrangements of BMG and Baise University as the executing agency and implementing agency, respectively, are capable and adequate for recording all transactions and balances, preparing reliable financial statements, safeguarding the assets of the company, and maintaining sound financial management and controls. The assessment included review of fund-flow arrangements, staffing, accounting policies and procedures, internal and external auditing arrangements, reporting and monitoring, and financial information systems.

19. The FMA concluded that BMG has financial management experience in managing ADB projects as this will be ADB's third loan to BMG. The GZAR Finance Department, which will operate and administer the imprest account, has sufficient experience in administering foreign-funded projects. Baise University has a reasonably sound financial management system that can provide, with reasonable assurance, accurate, and timely information on the status of the project. The FMA also indicated that (i) Baise University basically followed the relevant and well-established financial management policies and regulations in the PRC, and (ii) it has adequate financial management capability which enables it to handle the proposed project from a financial management perspective. The university has some financial management experience of investment projects with relatively experienced accounting staff, but it has no previous financial management experience of foreign-financed projects.

21. The overall financial management risk-rating of the project at appraisal stage is moderate due to Baise University's lack of experience of ADB project management, lack of accounting staff for review procedure, and insufficient internal auditing. The identified risks in financial management will be closely monitored during project implementation. Two sub-groups, namely, the financial group and the audit group are formed within the project leading group to strengthen financial management capacity. Significant training and support will be required on ADB policies and procedures, including procurement, disbursement, and project management. Technical assistance during implementation phase is necessary in the area of financial policies and procedures manual should be developed in order to guide staff activities and ensure staff accountability.

# Appendix 5 Summary Economic Analysis

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

# ECONOMIC ANALYSIS (SUMMARY)

# A. Introduction

1. The proposed project will improve the supply of skilled human resources in Baise Municipality to meet the demands from industry and support the transformation of the local economy in its effort to achieve sustainable and inclusive growth. The proposed project will be the fourth ADB-financed technical and vocational education and training (TVET) investment project in the People's Republic of China (PRC), and will play a demonstration role for the sector and provinces in multilevel TVET.

2. The expected impact of the project is improved access, quality, and responsiveness of TVET in Baise Municipality. **Component 1: TVET quality improved and capacity developed** will support (i) an integrated multilevel TVET system, (ii) establishment of an employment information system, (iii) development of a communication and outreach strategy to promote understanding and support for the multilevel TVET system, (iv) a competency-based curriculum, (v) an improved quality assurance system, etc. **Component 2: Chengbi campus constructed and environmental sustainability promoted**, which will construct Phase II teaching and living buildings and facilities in the new Chengbi campus, and procure and install necessary equipment with a total of 160,693 square meters building area. In addition, the component will also install a 3.86 million kilowatt hour photovoltaic power system, and construct campus roads, sport facilities, slope protection, and other school facilities. **Component 3: TVET innovation and relevance** promoted will support development of (i) school industry partnerships, and (iii) regional cooperation activities. **Component 4: project implementation management**, which will ensure efficient and effective project implementation of the project.

3. The project is expected to generate a significant number of professionals with postsecondary education and vocational trainings over a 25-year period. This additional professionals produced by Baise University will be better skilled and more competent having been provided with adequate training. The project is expected to accomplish this through the (i) improved teaching facilities in the newly expanded campus, (ii) improved teaching and learning materials, (iii) development of competency-based standards and curricula, and (iv) strengthened industry placements and cooperation programs. The project is aligned with ADB's Strategy 2020, the recommendations from the midterm review of the strategy that emphasized promoting TVET to address the human resource agenda and, the education sector strategic plan. It aligns with ADB's PRC country partnership strategy, 2011–2015.

## B. Economic Rationale

4. The economic analysis reviews recent growth and employment trends in Guangxi Zhuang Autonomous Region to establish the basis for its positive assessment of future labor demand in occupations that are the focus of the proposed project.

5. **Supply**. In 2012, the total number of TVET schools in Guangxi was 319 compares to only 123 in 1995. There are also 49 skilled workers' schools, which are also considered broadly defined, lower level TVET schools. The total enrollment of TVET students in Guangxi increased from about 180,600 in 1995 to about 964,600 in 2012. The annual growth rate of TVET admissions was at 18%, much higher than the growth rate of ordinary senior high school admissions, which was at 0.6%. The total enrollment of TVET schools as a ratio of total enrollment of university enrollment in Guangxi Zhuang Autonomous Region, increased from 51% in 2005 to over 159% in 2012.

6. Since 2008, with total admissions in TVET schools exceeding admission targets every year, Guangxi has invested over CNY7.5 billion on school development, including newly built campuses with a total area of 3.3 million acres, newly added spaces of 3.27 million square meters, newly procured equipment estimated at CNY1.65 billion, and about 2.5 million new books.<sup>1</sup> In Baise, total admissions of TVET students are increasing rapidly. For instance, in 2013, total admission was 167% of the targeted figure. The total number of TVET graduates in 2012 was at 214,900, compared to merely 49,600 in 2005. With the increase in student body enrollment, Guangxi's per capita TVET enrollment ranking climbs to the medium range among all provinces and regions.

7. **Demand**. The TVET enrollment data, by field, reflects the growing demand for specific skills by secondary and tertiary industries. Employment data for Guangxi revealed that there is a growing demand for skilled workers in recent years within Baise, with total employment rising by an average of 6.5% annually. However, the traditional agriculture industries are shrinking in terms of number of workers they employ, exhibiting a decreasing annual growth rate, while employment in the secondary and tertiary industries exhibited increasing annual growth rates. Overall, the figures show that employment opportunities are shifting away from primary towards secondary and tertiary industries, which require more skilled workers. The recent wage statistics in Baise show that sectoral wage levels are growing at similar pace. Using these panel data, the future employment and wage levels by sectors are projected through vector auto-regression method. It is shown that Baise University's enrollment structure by majors is consistent with the pattern of employment growth trend in Baise. The wage level forecasts are used to calculate the economic internal rate of return (EIRR) of the project.

| Year | Population | Employees | Total<br>Wage | Average<br>Wage | Year | Population | Employees | Total<br>Wage | Average<br>Wage |
|------|------------|-----------|---------------|-----------------|------|------------|-----------|---------------|-----------------|
| 1950 | 165        | 1.1       |               |                 | 1995 | 356        | 21.94     | 101,951       | 4,647           |
| 1965 | 205        | 5.59      | 2,591         | 464             | 1996 | 358        | 21.37     | 107,239       | 5,018           |
| 1978 | 289        | 11.16     | 6,357         | 570             | 1997 | 359        | 20.95     | 111,195       | 5,308           |
| 1980 | 300        | 13.72     | 9,133         | 666             | 1998 | 361        | 19.95     | 115,420       | 5,785           |
| 1981 | 305        | 14.17     | 9,505         | 671             | 1999 | 362        | 18.97     | 118,284       | 6,235           |
| 1982 | 311        | 14.37     | 10,280        | 715             | 2000 | 364        | 18.78     | 131,778       | 7,017           |
| 1983 | 315        | 14.14     | 10,746        | 760             | 2001 | 366        | 18.46     | 172,894       | 9,366           |
| 1984 | 320        | 14.27     | 14,157        | 992             | 2002 | 367        | 17.53     | 196,683       | 11,220          |
| 1985 | 326        | 14.55     | 14,822        | 1,019           | 2003 | 368        | 17.11     | 203,781       | 11,910          |
| 1986 | 331        | 15.23     | 18,843        | 1,237           | 2004 | 372        | 17.21     | 230,662       | 13,403          |
| 1987 | 335        | 15.89     | 21,862        | 1,376           | 2005 | 374        | 17.20     | 262,172       | 15,243          |
| 1988 | 338        | 16.40     | 28,109        | 1,714           | 2006 | 379        | 17.13     | 303,376       | 17,710          |
| 1989 | 341        | 17.41     | 31,266        | 1,796           | 2007 | 386        | 17.37     | 368,641       | 21,223          |
| 1990 | 344        | 18.41     | 36,283        | 1,971           | 2008 | 392        | 16.54     | 430,470       | 26,026          |
| 1991 | 346        | 19.17     | 40,696        | 2,123           | 2009 | 399        | 16.71     | 461,585       | 27,623          |
| 1992 | 350        | 20.07     | 49,078        | 2,445           | 2010 | 382        | 17.50     | 510,560       | 29,175          |
| 1993 | 352        | 21.23     | 65,770        | 3,098           | 2011 | 385        | 17.67     | 563,194       | 31,873          |
| 1994 | 354        | 21.40     | 89,265        | 4,171           | 2012 | 389        | 19.64     | 663,007       | 33,758          |

# Table 1: Baise Population, Employees, Total Wage, and Average Wage in Major Years

Population, Employees, Total Wage, and Average Wage (10 thousand)

Source: Guangxi Statistical Yearbook, various years.

<sup>1</sup> http://www.chinanews.com/edu/2011/06-15/3113924.shtml

8. At the regional level, enrollment in 2012 was 312,754 where the number of graduates was 261,830, indicating a rather quick growth of TVET student body. Enrollment by field indicates that processing and manufacturing accounts for the largest number of students, with new admissions of 60,618 students and 60,919 graduates in 2012. This is then followed by information technology, with 57,418 new admissions and 51,927 graduates. The high demand for TVET graduates is demonstrated by their high employment rate of over 95% of TVET graduates within 6 months of graduation. The trend of Baise University's new admissions by fields for the years 2011–2013 is congruent with that of Guangxi. New admissions increased from 1,607 in 2011 to 2,792 in 2013, a faster pace than regional average. Baise University's long run enrollment target is 18,000 students in total. Accordingly, the incremental students due to project are truncated at 5050, implied by the added spaces of 160,691 square meters and per student facility space of 25.02 square meters according to state regulation.

9. Employment data and average wage data by fields in Baise in the most recent 3 years are listed below in Table 2. The data shows that there is a growing demand for specific skills by secondary and tertiary industries, in particular, the construction, community services, real estate, health care saw most significant growth of total employment in the past 3 years, while hotel/restaurant, construction, rental, energy and water supply industries led the growth of average wage rate. The trend in Baise is consistent with Guangxi where more jobs are created in the secondary and tertiary industries which require more skilled workers. Notice also that although the average wage rates for different sectors are all increasing, the 2012 levels are still below 2011 national averages in all sectors.

|                      |                     |                      | 2012       |                 |                      | 2011       |                 |                      | 2010          |                 |
|----------------------|---------------------|----------------------|------------|-----------------|----------------------|------------|-----------------|----------------------|---------------|-----------------|
| Employment           | National<br>Average | Average<br>Employees | Total Wage | Average<br>Wage | Average<br>Employees | Total Wage | Average<br>Wage | Average<br>Employees | Total<br>Wage | Average<br>Wage |
| AFAF                 | 22687               | 4,448                | 80,942     | 18,197          | 4,711                | 82,168     | 17,442          | 4,876                | 78,279        | 16,054          |
| Mining               | 56946               | 9,563                | 450,285    | 47,086          | 7,912                | 389,021    | 49,168          | 8,760                | 328,535       | 37,504          |
| Manufacturing        | 41650               | 32,201               | 1,282,204  | 39,819          | 28,754               | 1,006,308  | 34,997          | 30,053               | 921,455       | 30,661          |
| Energy and water     | 58202               | 9,552                | 392,838    | 41,146          | 9,666                | 350,893    | 36,302          | 9,560                | 282,307       | 29,530          |
| Construction         | 36483               | 7,590                | 205,627    | 33,096          | 7,079                | 143,237    | 20,234          | 3,596                | 58,870        | 16,371          |
| Commerce             | 46340               | 6,337                | 182,926    | 28,866          | 6,637                | 191,449    | 28,846          | 6,357                | 162,186       | 25,513          |
| TSD                  | 53391               | 7,034                | 181,264    | 25,770          | 7,103                | 166,096    | 23,384          | 7,493                | 148,624       | 19,835          |
| Hotel/restaurant     | 31267               | 1,311                | 23,659     | 37,856          | 1,436                | 21,797     | 15,179          | 1,622                | 22,307        | 13,753          |
| Media                | 80510               | 3,205                | 105,882    | 33,037          | 3,280                | 106,799    | 32,561          | 3,065                | 100,416       | 32,762          |
| Finance              | 89743               | 4,586                | 260,453    | 56,793          | 4,204                | 220,693    | 52,496          | 4,026                | 196,006       | 48,685          |
| Real estate          | 46764               | 1,151                | 35,046     | 30,448          | 1,081                | 23,476     | 21,717          | 939                  | 20,467        | 21,797          |
| Rental               | 53162               | 1,523                | 36,056     | 23,674          | 2,130                | 25,929     | 12,173          | 1,517                | 28,248        | 18,621          |
| Science              | 69254               | 3,578                | 108,643    | 30,364          | 3,404                | 96,332     | 28,300          | 3,314                | 86,167        | 26,001          |
| WCE                  | 32343               | 4,589                | 95,575     | 20,827          | 4,245                | 84,347     | 19,867          | 3,833                | 72,363        | 18,879          |
| Community service    | e 35135             | 173                  | 4,666      | 26,971          | 75                   | 1,517      | 20,227          | 78                   | 1,241         | 15,910          |
| Education            | 47734               | 39,055               | 1,324,633  | 33,917          | 40,303               | 1,291,552  | 32,046          | 40,707               | 1,225,240     | 30,099          |
| Health               | 52564               | 17,896               | 563,405    | 31,482          | 16,665               | 485,141    | 29,111          | 14,825               | 405,152       | 27,329          |
| CSE                  | 53558               | 1,438                | 40,729     | 28,323          | 1,308                | 35,394     | 27,060          | 1,354                | 32,009        | 23,640          |
| Public<br>management | 46074               | 39,641               | 1,255,239  | 31,665          | 36,390               | 1,140,778  | 31,349          | 35,015               | 1,013,229     | 28,937          |

#### Table 2: Baise's Employment and Wages by Sector in Recent Years

AFAF= agriculture, forestry, animal husbandry, and fishery, TSD= transportation, storage, and delivery, WCE= water conservation and environment, CSE = culture, sports, and entertainment. Source: Guangxi Statistical Yearbook, various years. China Statistical Yearbook, 2013.

# C. Economic Viability

10. **Main assumptions**. The economic benefits of the proposed project are estimated as the incremental value of higher earnings that workers can expect to receive in the labor market as a result of improved skills attributable to the proposed project. A standard method of cost-benefit analysis was used to calculate the EIRR i.e., the discount rate that makes the net present value of costs and benefits equal. Key assumptions used in the economic analysis include:

- (i) total project capital investment cost excludes price contingencies, fees, and taxes and is spread across the duration of the project implementation;
- (ii) project benefits will accrue over a period of 20 years;
- (iii) the incremental number of graduates due to the project is assumed to be 5,050 and will remain at this levels throughout the project life of 20 years;
- (iv) incremental earnings for graduates are assumed to work as full-time employees<sup>2</sup> in their program-related employment (assumed to be at least five years) at a conservative 10% salary premium which is added on to the existing average annual salary;<sup>3</sup>
- (v) a discount rate of 12% is applied in the calculation of the EIRR; and
- (vi) EIRR values adjusted for dropouts and unemployment, or 95% of the graduates will successfully obtain employment.<sup>4</sup>

11. **Economic costs**. Economic analysis of the project has been undertaken with all projected costs and benefits at constant 2014 prices and measured using the domestic price numeraire method. Economic costs identified for the project are project investment, operating and maintenance, and replacement costs. Traded components are converted into economic prices using a shadow exchange rate factor of 1.08.

12. **Economic benefits**. There are economic benefits of the proposed project that were difficult to quantify. These include (i) spillover effects to non-project TVET institutions in Baise and Guangxi, (ii) benefits to non-regular students (short-term trainees) and the augmented capacity of the project TVET institutions to train more part-time and short-term students in Baise, and (iii) skills upgrading of non-participants working with TVET graduates. These additional project benefits are recognized but are difficult to quantify.

13. To quantify the project benefits, the incremental human capital, measured by the increases of wages of the graduates, is used. The return of college/vocational school education is high across the world. Recent studies on the return of higher education in China show that there is a 7.5% return on wage level per year of higher education (e.g., Zhong, 2011).<sup>5</sup> Zhong (2011) finds that for the working cohort that entered the workforce after 1993, the annual return to college education is 7.5% on average. This translates to 30% incremental wage level for a regular four-year college education. To keep the analysis conservative, assume only 10% incremental wage rate for each student. Furthermore, assume that the skill earned from higher education and

 $<sup>\</sup>frac{2}{2}$  It is assumed that all employment opportunities are full time in nature.

<sup>&</sup>lt;sup>3</sup> Recent studies including those using Guangxi and other provinces survey data show that the return of postsecondary (college and TVET) education varies from 11% to 35%. (See for instance: http://www.doc88.com/ p7768769096437.html; http://news.sina.com.cn/comment/2000-1-14/52469.html; and http: //news.163.com/14/0304 /08/ 9MFS7O6C00014AED.html).

<sup>&</sup>lt;sup>4</sup> Averaged according to Baise University's graduates placement reports.

 <sup>&</sup>lt;sup>5</sup> Z, Hai. 2011. *Returns to Higher Education in China: What is the Role of College Quality?* China Economic Review.
 Chapter 22. pp. 260–275.

vocational training in Baise University can last for 5 years before the new skills are required in the market. Note that this assumption is also conservative since more education leads to higher ability to self-study, thus skill upgrading is more likely to arise for the educated cohort.<sup>6</sup>

#### D. Economic Internal Rate of Return and Sensitivity Analysis

14. The monetized value of the benefits compared with projected economic costs of the project yields a base EIRR value of 16.7% and net present value (NPV) of CNY249.64 million.

| Cost |            |       |        | Benefits      |        |              |  |
|------|------------|-------|--------|---------------|--------|--------------|--|
| Year | Investment | O&M   | Total  | Human Captial | Total  | Net Benefits |  |
| 2015 | 117.10     |       | 117.10 |               |        | (117.10)     |  |
| 2016 | 178.62     |       | 178.62 | -             | -      | (178.62)     |  |
| 2017 | 182.39     |       | 182.39 |               |        | (182.39)     |  |
| 2018 | 92.62      |       | 92.62  |               |        | (92.62)      |  |
| 2019 | 31.45      |       | 31.45  |               |        | (31.45)      |  |
| 2020 |            | 16.76 | 16.76  | 137.41        | 137.41 | 120.65       |  |
| 2025 |            | 23.58 | 23.58  | 169.72        | 169.72 | 146.14       |  |
| 2030 |            | 28.48 | 28.48  | 216.61        | 216.61 | 188.13       |  |
| 2035 |            | 33.75 | 33.75  | 276.45        | 276.45 | 242.71       |  |
| 2040 |            | 35.95 | 35.95  | 352.83        | 352.83 | 316.88       |  |
|      |            |       |        |               | EIRR = | 16.7%        |  |

#### **Table 3: Economic Internal Rate of Return Results**

15. The sensitivity analysis indicates that the EIRR is robust against all negative changes such as costs, enrollment/employment, or productivity, and project benefit delays. Even with a combination of 20% O&M costs overrun and 20% reduction of benefits, the project EIRR still exhibits 13.4%, a value higher than the cut-off level. In table 4 below, we provide the results of sensitivity analysis, which considered the negative impacts of O&M costs, benefit reduction, and project benefit delay. The capital cost overrun is not considered since the project costs already considered contingencies thus it is adequate to address the negative impacts on capital costs. For benefit reduction, it can be either enrollment reduction, or unemployment rate increase, or lowered incremental productivity. The corresponding switching values are provided as well.

#### Table 4: Summary of Economic Internal Rate of Return Sensitivity Analysis Results

|  | Percent Change | Recalculated | ENPV (12%)    | Switching | Sensitivity |
|--|----------------|--------------|---------------|-----------|-------------|
| Change Variable                                | in Variable    | EIRR         | (CNY million) | Value     | Indicator   |
| 1. Increase in O&M costs                       | 20%            | 16.4%        | 229.34        | 235%      | 0.10        |
| 2. Benefit reduction                           | 20%            | 13.8%        | 88.72         | 30%       | 0.86        |
| 3. Increase in O&M costs and benefit reduction | 20%            | 13.4%        | 68.43         |           | 0.98        |
| 4. Delay in benefits by one year               |                | 14.7%        | 146.89        |           |             |
| Base EIRR <sup>a</sup> =                       | - 16.7%        |              |               |           |             |
| Base NPV @12% =                                | 249.64         | CNY million  |               |           |             |

<sup>a</sup> Base EIRR is estimated based on incremental enrollment calculated by the with and without project scenario comparison. Average annual salary of new graduates will follow market rate based on consultant's time series regression result up to 2032.

Source: Consultant's estimate

<sup>&</sup>lt;sup>6</sup> Assume that 95% of the graduates can find full-time jobs in their program-related employment and remain in the same employment over at least a 5-year period with wage premium.

# Appendix 6 Summary Poverty Reduction and Social Strategy

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

# SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

| Country:   | People's Republic of China       | Project<br>Title:         | Guangxi Baise Vocational Education<br>Development Project |  |  |  |  |  |  |
|--|----------------------------------|---------------------------|---|--|--|--|--|--|--|
| Lending/Financing<br>Modality:   | Project                          | Department<br>/ Division: | East Asia Department/ Urban and Social Sectors Division   |  |  |  |  |  |  |
|  |                                  |                           |   |  |  |  |  |  |  |
| Targeting classifica   | tion: General intervention       |                           | SIS AND STRATEGY  |  |  |  |  |  |  |
| A. Links to the Nat  | tional Poverty Reduction and I   | nclusive Grov             | th Strategy and Country Partnership                       |  |  |  |  |  |  |
| Strategy   |                                  |                           |   |  |  |  |  |  |  |
| The project will support the People's Republic of China's (PRC) Twelfth Five-Year Plan (2011–2015), which prioritizes development in the western regions of the PRC and developing high human resources, and accelerating education reform, and help improve the capacity and effectiveness of social services by focusing on technical and vocational education and training (TVET) in Baise Municipality. It will support multiple TVET system construction, regional cooperation and school-industry partnerships, and civil works construction of a new campus of Baise University, and create a pool of qualified multiple teachers and students to address   |                                  |                           |   |  |  |  |  |  |  |
| initial training, entry  | to and progress within the work  | force. The pro            | ject aligns with the Asian Development Bank               |  |  |  |  |  |  |
| (ADB) <sup>a</sup> PRC country   | y partnership strategy and confo | rms to ADB's e            | education policy and sector operations plan.              |  |  |  |  |  |  |
| B. Results from the Poverty and Social Analysis during PPTA or Due Diligence <ol> <li>Key poverty and social issues. Guangxi Zhuang Autonomous Region (GZAR) is one of 12 less-developed provinces and autonomous regions in the western PRC. Baise City is one of the 14 national intensively poverty-stricken areas of the PRC. Nine out of 12 counties/districts of Baise are national level poverty-stricken counties. The proportion of urban population is only 12.13%, lower than the national average (52.57%). The per capita disposable income of urban households of Baise in 2012 was 80% of the average level of the country, while the per capita net income of rural households was 90% of the national average. More than 40% of undergraduate and vocational college students in Baise University and more than 90% of students in Baise Vocational School (BVS) are from poor or low-income households, is representative of the current student composition in</li> </ol> |                                  |                           |   |  |  |  |  |  |  |
| <b>2. Beneficiaries</b> . Direct beneficiaries of the project are students and staff of Baise University and BVS, and enterprises who will be partners with Baise University during the project implementation. It is expected that by 2019 about 24,900 students per year and 1,330 teachers or staff of Baise University and BVS will benefit from the project directly. Indirect beneficiaries include other TVET institutions in Baise—the Baise Municipal Government, including the education bureaus; human resource and social security bureau; and kindergartens, primary, and middle schools especially in rural areas, and related public service and industry sectors. Most of BVS and vocational college students are from rural areas. Nearly 100% of BVS students and more than 92% of Baise University students are employed after graduation, and there is a substantial present and future demand for graduates from services and industry.                                 |                                  |                           |   |  |  |  |  |  |  |
| <b>3. Impact channels</b> . Direct impact channels are the improved (i) quality of multilevel TVET system, training, and facilities; (ii) employability of graduates; (iii) industry–school partnerships and international cooperation; and (iv) reductions in energy consumption. Indirect impact channels are increased wages, improved rural education services (kindergarten, primary and middle schools), multilevel vocational education outcomes, and environmental sustainability.   |                                  |                           |   |  |  |  |  |  |  |
| <b>4. Other social and poverty issues</b> . Access to and affordability of TVET for poor and rural students is being addressed through government subsidy programs, increased outreach efforts by the Baise Education Bureau, and expansion of TVET facilities in GZAR.  |                                  |                           |   |  |  |  |  |  |  |
| <b>5. Design features</b> . The project focuses on establishing a multilevel TVET system, which will provide multiple pathways for advancement for students at different levels. This will help meet the need of the labor market and student employment expectations. Most students are from rural areas and include a large percentage of ethnic minorities. Key design features include (i) participation of female and ethnic minority students and teachers in reform and development of curriculum; (ii) establishment of a system to support labor market and employment information, analysis, and dissemination; (iii) inclusion of social indicators for analysis in the tracer studies, industry survey, and the project performance monitoring system; (iv) human resources outreach for recruitment in rural and poor areas; and (vi) targets for women's participation in the teacher and management training opportunities.   |                                  |                           |   |  |  |  |  |  |  |

# C. Poverty Impact Analysis for Policy-Based Lending Not Available

П.

# PARTICIPATION AND EMPOWERING THE POOR

| <ol> <li>Summarize the participatory approaches and the proposed project activities that strengthen inclusiveness and empowerment of the poor and vulnerable in project implementation. Participatory approaches include (i) extensive involvement of industry partners in establishing partnerships, curriculum development, and governance; (ii) staff participation in training and development of the multilevel TVET strategy; (iii) outreach to students; (iv) and regional partners development of a human resources strategy with a focus on inclusion in recruitment.</li> <li>If civil society has a specific role in the project, summarize the actions taken to ensure their participation. During development of a communication and outreach plan of the TVET, and design and implementation of further outreach training programs for migrant workers and communities, selected communities, and possibly civil society organizations will be involved.</li> <li>Explain how the project ensures adequate participation of civil society organizations in project activities.</li> <li>What forms of civil society organization participation participation is envisaged during project implementation?</li> <li>Information gathering and sharing ⊠Consultation □Collaboration □ Partnership</li> <li>Will a project level participation plan be prepared to strengthen participation of civil society as interest holders</li> </ol> |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| In an ected persons particularly the poor and vulnerable? $\Box$ Yes $\Box$ No. Actions included in the project design  |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
| Gender mainstreaming category: Effective gender mainstreaming   |  |  |  |  |  |  |
| <b>A. Key issues.</b> The female students at BVS, BVC, and Baise University account for 90%, 75%, and 55% of total students, respectively and female staff are 45.1% (Baise University, BVC) and 61.6% (BVS). The project provides for career and employment opportunities for a substantial number of students from poor and rural areas. The development of a multilevel major in preschool will further help open up job service areas in kindergartens and emphasis on outreach to women for STEM oriented majors will help them to transition to emerging industries which are rapidly expanding. The employment rate of graduates from Baise University, BVS, and vocational college is more than 92%, 93%, and 100%, respectively. By improving the quality of TVET education, the project will have a substantial impact on creating pathways for women, and especially rural women, to enter the new economy and participate in the social and economic development of Baise.  |  |  |  |  |  |  |
| <b>B. Key actions.</b> The social and gender action plan (SGAP) actions include (i) ensuring gender-sensitive materials are prepared under the competency-based curriculum development; (ii) providing access to training opportunities for female staff; (iii) development of a human resources outreach program for recruitment in rural areas, with an emphasis on addressing gender stereotypes and encouraging young women to engage wider employment positions leadership development; (iv) identifying gender issues to be addressed in curriculum development and school-industry partnership; and (v) ensuring that women have access to the jobs related to construction activities.  |  |  |  |  |  |  |
| IV. ADDRESSING SOCIAL SAFEGUARD ISSUES  |  |  |  |  |  |  |
| A. Involuntary Resettlement       Safeguard Category: □ A □ B ⊠ C □ FI         1. Key impacts. No involuntary resettlement or land acquisition will take place under the project. A due diligence report has been prepared and approved.         2. Strategy to address the impacts. Not available.         3. Plan or other Actions.         □ Resettlement plan         □ Combined resettlement and indigenous peoples plan         □ Resettlement framework         □ Environmental and social management system arrangement         □ No action   |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
| 1. <b>Key impacts</b> . The poverty and social assessment concluded that there will be no negative impacts on ethnic minority communities surrounding the TVET institutions or students and staff at Baise University and BVS. Ethnic minorities make up more than half of the student and staff population in Baise University and BVS, with the majority coming from the Zhuang ethnic minority. The consultations have determined that there are affirmative government policies for ethnic minority groups for admission to TVET education, including specific subsidies to ensure affordability and access. Ethnic minority students in the project institutions will benefit equally from project.  |  |  |  |  |  |  |

| Is broad community support triggered?  | 🛛 No  |  |  |  |  |  |
|--|---|--|--|--|--|--|
| 2. <b>Strategy to address the impacts.</b> As per para. 17 SR3 of the ADB Safeguard Policy Statement (2009), the project has included measures in the overall project design in lieu of preparing a separate indigenous peoples plan. Design elements to ensure ethnic minority inclusion are included in several of the TVET capacity building components and the SGAP.   |   |  |  |  |  |  |
| 3. Plan or other actions.  |   |  |  |  |  |  |
| <ul> <li>Indigenous peoples plan</li> <li>Indigenous peoples planning framework</li> <li>Environmental and social management system</li> <li>arrangement</li> <li>Social impact matrix</li> <li>No action</li> </ul>   | <ul> <li>Combined resettlement plan and indigenous peoples plan</li> <li>Combined resettlement framework and indigenous peoples planning framework</li> <li>Indigenous peoples plan elements integrated in project with a summary</li> </ul>  |  |  |  |  |  |
| V. ADDRESSING OTHE   | ER SOCIAL RISKS   |  |  |  |  |  |
| A. Risks in the Labor Market   |   |  |  |  |  |  |
| 1. Relevance of the project for the country's or region's or underemployment is retrenchment is core labor standar recognized core labor standards and/or applicable labor lab | sector's labor market. 🖾 unemployment 🛛<br>ards The project will comply with international<br>ws.   |  |  |  |  |  |
| 2. Labor market impact. Graduates from Baise University and BVS will help meet the need for talented workers with different technical levels of education and industry sectors for Baise Municipality and GZAR. From 2019, about 24,900 students per year in total, including 12,500 undergraduates; 3,500 vocational college students; 500 pre-undergraduates; 1,500 secondary vocational students; 5,000 adult continuing students; 1,300 migrant workers; and 600 foreign students will successfully graduate and join the active work force. This is expected to improve the delivery of public social services and industry development in Baise. Human resources development including tracer studies development is included in the project.  |   |  |  |  |  |  |
| <b>B. Affordability</b> All BVS students receive free tuition from the government. Various subsidies from different government departments are given to poor, rural, and ethnic minority students.   |   |  |  |  |  |  |
| <ul> <li>C. Communicable Diseases and Other Social Risks</li> <li>1. Indicate the respective risks, if any, and rate the impact as high (H), medium (M), low (L), or not applicable (NA):</li> <li> ○ Communicable diseases L □ Human trafficking ○ Others (please specify) 2. Describe the related risks of the project on people in project area. Slight risk of communicable disease transmission from construction workers. HIV/AIDS clauses included in contractor bidding documents</li></ul>  |   |  |  |  |  |  |
| VI. MONITORING AND EVALUATION  |   |  |  |  |  |  |
| <ol> <li>Targets and indicators. Indicators of the design and<br/>participation, gender and ethnic minority inclusive recruination.</li> <li>Required human resources. 6 months of funding for a<br/>project management support.</li> <li>Information in project administration manual. the Sumanual, and indicators will be integrated into the project.</li> <li>Monitoring tools: the SGAP, tracer studies, and industrial support.</li> </ol>  | d monitoring framework include targets for women's<br>uitment, and others with inclusive design features.<br>a gender and social specialist is included as part of<br>GAP are included in the project administration<br>ct performance monitoring system.<br>y surveys will be implemented. |  |  |  |  |  |
| <sup>a</sup> Asian Development Bank. 2012. Country Partnership Strategy: People's Republic of China, 2011–2015. Manila.  |   |  |  |  |  |  |

3

# Appendix 7 Social and Gender Action Plan

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Projec

# SOCIAL AND GENDER ACTION PLAN

| Output  | Action   | Indicator  | Budget   | Responsible<br>Institutions  |  |  |  |
|---|--|--|--|--|--|--|--|
| Output 1: Tech                                  | Technical and Vocational Education and Training Quality Improved and Capacity Developed  |  |  |  |  |  |  |
| 1.1 Multilevel<br>TVET strategic<br>development | <ul> <li>(i) Training on and development of the MLT system ensures participation of men, women, and ethnic minorities.</li> <li>(ii) Employment information management system, student tracer studies, and industry survey system collect and analyze disaggregated data on student enrollment, graduation, and employment per course.</li> <li>(iii) Outreach and public awareness programs designed to address potential social and gender bias in enrollment and selection of majors and social inclusion.</li> </ul> | <ul> <li>(i) 40% female participants and 50% ethnic minorities (baseline: female Baise University staff, 43%).</li> <li>(ii) Disaggregated data (sex, ethnicity, rural, and urban) collected and gender and social analysis conducted to identify constraints, needs, and priorities for women, ethnic minority, and vulnerable groups.</li> <li>(iii) 50% female participation in outreach programs.</li> <li>(iv) Information, education, and communication materials on choices of courses, occupations, and learning pathways promote student enrollment in non-traditional sectors.</li> <li>(v) Student enrollment database reviewed annually to measure changing profile of students<sup>1</sup></li> </ul> | Included in the project.   | SDGE, Baise<br>Universtiy,<br>PMO, and<br>Education<br>Bureau of<br>counties<br>and/or<br>districts. |  |  |  |
| 1.2 Curriculum<br>development                   | <ul> <li>(i) Competency based curriculum integrates principles of gender equality and social inclusion;</li> <li>(ii) Training in CBA includes all teaching staff (male and female, ethnic minorities);</li> <li>(iii) New curriculum includes modules on ethnic minority cultures where possible.</li> </ul>  | <ul> <li>(i) All materials reviewed by SDGE and resource persons and recommendations included in finalized materials.</li> <li>(ii) All female and ethnic minority staff participate in CBA training (baseline: 0).</li> <li>(iii) Ethnic minority cultures module developed and incorporated in the curriculum (e.g., tourism, preschool).</li> </ul>   | Included in the project.   | Curriculum<br>development<br>group, SDGE,<br>Baise<br>Universtiy,<br>and PMO.                        |  |  |  |
| 1.3 Teacher<br>training                         | Core teacher training system ensures participation of all teachers.  | At least 40% female, 30% ethnic minorities.  | Included in the project.   | The reform<br>group, SDGE,<br>Baise<br>Universtiy,<br>and PMO.                                       |  |  |  |
| 1.4 Staff<br>development                        | <ul> <li>(i) Leadership training includes a module covering gender equality and social inclusion;</li> <li>(ii) Female and ethnic minority teachers and/or staff participate in all staff development training programs.<sup>2</sup></li> </ul>  | <ul> <li>(i) A gender equality and social inclusion focused module developed and incorporated in leadership training curriculum.</li> <li>(ii) 40% female teachers and/or staff, 50% ethnic minorities participate in each of the planned trainings.</li> </ul>  | Included in the project.   | Baise<br>Universtiy and<br>PMO.  |  |  |  |
| Output 2: Cher                                  | ngbi Campus Constructed and Environmental Su   | istainability Promoted   |  |  |  |  |  |
| Civil works                                     | <ul> <li>(i) Consultation with teachers and students on the new campus design.</li> <li>(ii) New campus features gender sensitive living and working conditions.</li> <li>(iii) Female workers participate in jobs generated by the project (6,881 person-months during construction and 685 positions during operation);</li> <li>(iv) Specific measures for prevention, reporting and response to prevention of sexual harassment</li> </ul>   | <ul> <li>(i) At least three consultation meetings: 40% female participants, 50% ethnic minorities.</li> <li>(ii) Separate dormitories for male and female students/teachers.</li> <li>(iii) Separate male and female latrines in campus facilities.</li> <li>(iv) Improved safety measures during night.</li> <li>(v) At least 20% of jobs targeted for local female during construction; and at least 35% of job positions during operation for female.</li> <li>(vi) All project institutions develop and implement specific</li> </ul>  | Included in the<br>design budget<br>and<br>construction<br>budget. | Baise<br>Universtiy,<br>design<br>institute,<br>PMO,<br>contractors<br>and SDGE.                     |  |  |  |

<sup>1</sup> 

Changing profile of students with regard to students in non-traditional sectors and increase in students from rural areas. Staff development trainings include leadership training, oversees training, domestic study tours, and trainings in TVET institutions. 2
| Output                                      | Action   | Indicator   | Budget                      | Responsible<br>Institutions   |
|---|--|---|-----------------------------|---|
|   | in campus developed and adopted.   | measures for prevention, reporting and response to sexual<br>barassment   |                             |   |
| Output 3: Tec                               | hnical and Vocational Education and Training In  | novation and Relevance Promoted   |                             |   |
| 3.1 School-<br>industry<br>partnerships     | <ul> <li>(i) All three leading groups<sup>3</sup> ensure female participation.</li> <li>(ii) Implementation guidelines for gender mainstreaming in Enterprise Education Facility and Entrepreneurship Incubation Program designed.</li> <li>(iii) Special speaker series introduced to facilitate identification of potential role models, particularly female, from different professional backgrounds.</li> <li>(iv) Career guidance and mentoring sessions link female students with female faculty/professional women.</li> <li>(v) Gender recognition award established to recognize industry partners who have reduced gender inequality in workplace or promoted women in non-traditional sectors.</li> </ul> | <ul> <li>(i) 30% female members in each group (baseline: 0).</li> <li>(ii) Implementation guidelines developed with participation of male and female teachers.</li> <li>(iii) Once every 2 months speaker series introduced; 50% of speakers are professional women from different professional backgrounds.</li> <li>(iv) Monthly mentoring sessions established, 100% female students paired with a mentor.</li> <li>(v) Guidelines for gender recognition award developed; annual gender recognition award granted.</li> </ul> | Included in<br>the project. | The<br>partnership<br>committee,<br>SDGE,<br>Baise<br>Universtiy,<br>and PMO. |
| 3.2 Regional cooperation                    | <ul> <li>(i) Ensure both male and female staff are<br/>included in the training of management team;</li> <li>(ii) Identification and expansion of ethnic<br/>minority culture regional cooperation activities.</li> </ul>  | <ul> <li>(i) At least 30% female staff.</li> <li>(ii) Ethnic minority culture regional cooperation activities included<br/>in the regional cooperation expansion plan.</li> </ul>   | Included in the project.    | Cooperation<br>team,<br>SDGE,<br>Baise<br>Universtiy,<br>and PMO.             |
| 3.3 Research                                | <ul> <li>(i) School-industry partnership regulation and<br/>policy include strategies to address gender<br/>stereotyping in majors/occupations.</li> <li>(ii) Gender analysis included in research on<br/>emerging labor market.</li> <li>(iii) Review bridging modules/courses to address<br/>rural/urban disparities for students.</li> </ul>  | <ul> <li>(i) Strategies to address gender stereotyping of majors/occupations. Reports identify gender disparities (if any) in priority sectors and recommend actions to address them.</li> <li>(ii) Recommendations to address rural/urban disparities identified and submitted to Baise University.</li> <li>(iii) Data analysis of growth area conducted with specific emphasis on gender impact in new economy.</li> </ul>   | Included in the project.    | SDGE,<br>Baise<br>Universtiy,<br>and PMO.                                     |
| Output 4: Project Implementation Management |  |   |                             |   |
|   | <ul> <li>(i) SDGE involved in development and implementation of activities for outputs 1, 2, and 3.</li> <li>(ii) Ensure female and the ethnic minority staff in the project management.</li> </ul>  | <ul> <li>(i) At least one SDGE with 6 person-month input is included;</li> <li>(ii) At least 30% female staff, 50% ethnic minority staff.</li> <li>(iii) Semiannual reports on (a) ethnic minority actions (to be disclosed on the ADB website) and (b) social inclusion and gender actions in the SGAP.</li> </ul>   | Included in the project.    | Baise<br>Universtiy<br>and PMO.   |

CBA = curriculum-based approach, MLT = multilevel TVET, PMO = project management office, SDGE = social development and gender expert, TVET = technical and vocational education and training.

<sup>&</sup>lt;sup>3</sup> The three leading groups identified in the project are school industry committee at Baise University management level, school-industry partnership group, and  $\omega$  professional steering group at faculty level.

## Appendix 8 Risk Assessment and Risk Management Plan

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

### RISK ASSESSMENT AND RISK MANAGEMENT PLAN

1. The risk assessment for the proposed Guangxi Baise Vocational Education Development Project has been conducted in accordance with the Asian Development Bank's governance and anticorruption policy to identify risks associated with implementation of the proposed project. Mitigation measures built into the project design are identified and the residual risk with the mitigation measures in place is assessed.

|  | Risk       | Mitigation Measures or Risk  |  |  |
|--|------------|--|--|--|
| Risk Description   | Assessment | Management Plan  |  |  |
| 1. Public Financial Management   |            |  |  |  |
| A. Inherent Risks  | -          | -  |  |  |
| 1.1. Country-specific risks<br>Inadequate financial management,<br>management, and skills capacity.  | Ν          | <ul> <li>(i) There are sufficient resident skills, expertise, and experience in most areas for timely and successful implementation. In addition, there is a high level coordinating body in the government to systematically and critically assess directions and outcomes of the project.</li> <li>(ii) Training will be given to the PMO and local financial staff to familiarize them with ADB.</li> </ul>                                 |  |  |
| 1.2. Entity–specific risks<br>Inadequate understanding of roles<br>of executing agency, implementing<br>agency, and other agencies.  | N          | <ul> <li>(i) A clear organizational structure of the executing agency and/or implementing agencies is already established in relation to the project, and separation of roles and responsibilities between parties are clear.</li> <li>(ii) Work plans of core activities for the executing agency and/or implementing agency personnel are well developed.</li> </ul>   |  |  |
| <ul> <li>1.3. Project-specific risks <ul> <li>(i) Implementing agencies lack experience with ADB projects.</li> <li>(ii) Some capacity building components will be partly managed by individual project TVET schools.</li> </ul> </li> </ul> | М          | <ul> <li>(i) Consulting support and training to be provided, including in the following areas:</li> <li>a. ADB disbursement procedures, and</li> <li>b. project accounting requirements.</li> <li>(ii) Detailed procedural guidance to be put in place in advance of loan effectiveness.</li> <li>(iii) PMO will oversee local project activities by requiring implementing agency plans and cost estimates to be approved by them.</li> </ul> |  |  |
| Overall Inherent Risks   | N          |  |  |  |
| B. Control Risks   |            |  |  |  |
| 1.4. Implementing entity's financial<br>management policies and<br>procedures for the project are<br>inadequate.   | М          | Written financial procedures will be developed for<br>the project and reviewed by suitably experienced<br>GZAR officials.  |  |  |
| 1.5. Funds flow<br>Weak adherence to ADB guidelines<br>as concerns to disbursement and<br>withdrawal of project funds by the<br>executing and implementing<br>agencies.  | N          | <ul> <li>(i) Executing agency to liaise regularly with ADB to ensure that ADB guidelines are followed.</li> <li>(ii) Interagency coordination at all levels to discuss the loan disbursement performance.</li> <li>(iii) Separate accounts to be maintained for all project components financed by ADB and the government.</li> </ul>  |  |  |
| <ul> <li>1.6. Staffing <ul> <li>(i) High staff turnover and inadequate financial management skills.</li> <li>(ii) Implementing agency accounting staff lacks adequate understanding of ADB requirements.</li> </ul> </li> </ul>              | M          | <ul> <li>(i) Provide thorough training on ADB's disbursement procedures and project accounting requirements.</li> <li>(ii) Oversight of disbursement by experienced financial staff at executing agency and GZAR level.</li> <li>(iii) Guidance and support from the management support consultant.</li> </ul>   |  |  |

| 1.7. Accounting Policies and Procedures | Ν        | Qualified and trained staff will undertake account   |
|---|----------|--|
| Account and bank reconciliations        |          | and bank reconciliations on a periodic basis.        |
| are not performed in a timely           |          | Minor weaknesses identified in the FMA will be       |
| manner                                  |          | addressed prior to the project commencing            |
| 1.8 Internal audit                      | М        | All implementing agencies' financial activities are  |
| Inadequate capacity in the Internal     | IVI      | routinely subject to internal audit coverage but     |
| Audit dopartmont                        |          | there is scone to enhance canacity by                |
| Audit department                        |          | modernizing auditing methods                         |
| 1.0 External audit                      | N        | Independent external auditors accentable to ADD      |
| 1.9. External auditore de not norferre  | IN       | will be experiented by the execution encounter audit |
| External auditors do not perform        |          | will be appointed by the executing agency to audit   |
| their functions adequately              |          | project accounts and compliance with linancial       |
|   |          | covenants on an annual basis                         |
| 1.10 Reporting and monitoring           | M        | (i) The executing agency will make                   |
| Regular financial reports suitable for  |          | comprehensive progress reports (including            |
| user needs are not prepared             |          | financial) to ADB semiannually.                      |
|   |          | (ii) Consultancy support to advise improvements      |
|   |          | needed to financial management reporting.            |
| Overall Control Risk Assessment         | М        |  |
| 2. Procurement                          |          |  |
| 2.1 Procurement capacity is low.        | М        | (i) Use of a specialist tendering company and a      |
| leading to irregularities               |          | project readiness consultant will enhance            |
| loading to inegalarities                |          | canacity   |
|   |          | (ii) Training in ADB procurement procedures          |
|   |          | during project proparations                          |
| 2.2. Look of professionalism in the     | N.4      | (i) DMO to appoint a producement appointint          |
| 2.2 Lack of professionalism in the      | 101      | (i) PNO to appoint a procurement specialist.         |
| procurement function                    |          | (II) Use of an accredited specialist tendering       |
|   |          | company will enhance professionalism and             |
|   |          | provide training.                                    |
|   |          | (iii) Specialist procurement staff seconded to       |
|   |          | implementing agency PIUs.                            |
|   |          | (iv) Use of accredited experts for bid evaluations.  |
| 2.3 Delays in the procurement process   | M        | (i) Training in project management and               |
|   |          | planning.  |
|   |          | (ii) Use of standard bidding documents and           |
|   |          | ADB advance contracting facility.                    |
|   |          | (iii) Advice and support of tendering company        |
|   |          | and consultants.                                     |
| 2.4 Non-performance by contractors or   | L to M   | (i) Use of performance guarantees.                   |
| suppliers                               |          | (ii) Investigation and monitoring of past            |
| cappilore                               |          | nerformance  |
| Overall Procurement Risk                | M        | performance.   |
| Assessment                              |          |  |
| 3 Other Project Implementation Risk     | <u>ا</u> |  |
| 3.1 TVFT proves inaccessible and/or     | M        | Central government is strongly supportive of         |
| unattractive to the notential student   |          | T//FT development. The project design is             |
|   |          | intended to improve the guality and relevance        |
| population                              |          | of TVET sources and to improve the                   |
|   |          | or TVET courses and to improve the                   |
|   |          | employability of IVEI graduates.                     |
| 3.2 The commitment of TVET institutions | M        | IVEI improvement strategies have been                |
| to implementing change in teaching      |          | developed through a consultative process that        |
| and learning methods is not             |          | indicated a strong recognition of the need to        |
| sustained                               |          | improve, and with the strategies individually        |
|   |          | reviewed and finalized with the participation of     |
|   |          | the schools themselves.                              |
| 3.3 Insufficient interest by BMG in     | M        | BMG is willing to give a loan assurance they will    |
| integrating the pilot innovations and   |          | actively disseminate the pilot results and seek to   |
| disseminating experiences and           |          | make them models of best practice. Ongoing           |
| materials                               |          | policy dialogue on the pilot activities with BMG     |
| ,                                       |          |  |

| 3.4 Delays in counterpart funding   | L      | <ul> <li>(i) Covenanted assurances from BMG for timely provision of counterpart funding, together with BMG and local government's strong and improving fiscal capacity.</li> <li>(ii) Direct coordination between PMO and BED</li> </ul>   |
|---|--------|--|
| Overall Other Implementation Risks  | M      |  |
| 4. Governance and Corruption Risks  |        |  |
| 4.1 Corruption in the procurement process   | L to M | <ul> <li>(i) As identified under procurement risks (see above).</li> <li>(ii) Involvement and inspections of local supervision and anticorruption departments at the city and provincial level.</li> <li>(iii) Increased transparency in the procurement process (see 4.7).</li> </ul>                       |
| 4.2 Lack of clarity in responsibility for<br>anticorruption measures                            | L      | <ul> <li>(i) ADB contracts to contain clauses to<br/>make contractor responsibilities and<br/>consequences clear.</li> <li>(ii) PAM includes anticorruption responsibilities,<br/>measures, and procedures.</li> </ul>   |
| 4.3 Failure to enforce anticorruption measures  | L      | <ul> <li>(i) The government has introduced an integrity program that targets prevention and punishment.</li> <li>(ii) Anticorruption offices (discipline and inspection offices) have a clearly defined set of responsibilities to investigate and prosecute</li> </ul>                                      |
| 4.4 Numerous standards for the behavior of public officials and complex language of regulations | L      | <ul> <li>(i) ADB guidelines, and loan and contract<br/>documents will stipulate what constitutes<br/>unacceptable behavior.</li> <li>(ii) Anticorruption training is identified as a<br/>capacity building need under the loan.</li> </ul>   |
| 4.5 Constrained capacity to conduct<br>effective audit of ADB- financed<br>projects             | L      | <ul> <li>(i) Scope of project audit and audit certification to<br/>include compliance with loan conditions.</li> <li>(ii) ADB to receive and review annual audit<br/>reports (including any appropriate follow up).</li> </ul>   |
| 4.6 Existence of conflicts of interest.   | L to M | <ul> <li>(i) No apparent institutional conflicts of interest<br/>have been identified during the project<br/>preparations.</li> <li>(ii) Local government regulations require officials<br/>to declare conflicts of interest.</li> </ul>   |
| 4.7 Lack of transparency  | L to M | <ul> <li>(i) Loan conditions to promote greater<br/>transparency and public availability of<br/>information, including the project procurement<br/>plan and contracts awards.</li> <li>(ii) Government officials in the PRC are now<br/>being required to declare personal and family<br/>wealth.</li> </ul> |
| Overall Corruption and Governance   | L to M |  |
| Failure Risk Assessment   | NA     |  |
| Overall implementation RISK   | IVI    |  |

ADB = Asian Development Bank, BFD = Baise Finance Department, BMG = Baise Municipal Government, FMA = financial management assessment, GZAR = Guangxi Zhuang Autonomous Region, H = high, M = moderate, N = negligible or low, PAM = project administration manual, PIU = project implementation units, PMO = project management office, PRC = People's Republic of China, S = substantial, TVET = technical and vocational education and training.

Source: Asian Development Bank estimates.

# Appendix 9 Financial Management Assessment

Project Number: 47009 / TA 8448 - PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

### FINANCIAL MANAGEMENT ASSESSMENT

### A. Summary

1. A financial management assessment (FMA) was carried out using Asian Development Bank's (ADB) financial management assessment questionnaire. The financial management assessment is to determine whether or not the financial management arrangements of Baise Municipal Government (BMG) and Guangxi Baise University (BU) as the executing agency and implementing agency, respectively, are capable and adequate for recording all transactions and balances, supporting the preparation of regular and reliable financial statements, safeguarding the assets of the company, and is subject to audit. The guidelines describe the approach prescribed by ADB in undertaking a financial management assessment which involves the following steps:

(i) use a standard questionnaire to assess the financial management of the implementing agency;

(ii) based on the results of the questionnaire, identify issues for future review; and

(iii) based on the external audit reports and financial sheets provided, identify potential problems and offer recommendations based on the findings.

2. This assessment was prepared during the TA preparation in May 2014. The FMA was conducted in accordance with ADB's Guidelines for the *Financial Management and Analysis of Projects (2005)* and the publication *Financial Due Diligence a Methodology Note (2009)*. The FMA considered the capacity of the BMG and BU, including funds flow arrangements, staffing, accounting and financing reporting system, internal and external auditing arrangements, and financial information systems. Issues or risks associated with the IAs' financial management systems were identified, and appropriate risk mitigation measures were suggested to facilitate more effective project design and implementation.

3. The assessment concluded that while BMG has general experience in managing foreign-financed projects including ADB projects, the IA had no such experience, thus significant training and support will be required on ADB policies and procedures, including disbursement and project management. The assessment indicated that (i) there are established financial management policies in the PRC, which are basically followed by BU; and (ii) BU has good financial management capability and is experienced in managing locally-funded projects. The Guangxi Provincial Finance Bureau (GPFB), which will operate and administer the imprest account have experience administering foreign-financed project including ADB-financed projects.

4. The FMA recommended capacity development measures to ensure that the implementing agency is able to meet the project's financial management requirements. It was proposed that the executing and implementing agencies would strengthen their financial management capability to manage the project, including (i) undertaking training, particularly on ADB policy and procedural requirements; (ii) appoint devoted staff as to manage project accounts; and (iii) seeking external financial management assistance as needed.

5. The overall FM risk-rating of the project is low to moderate. The identified risks in financial management will be closely monitored during project implementation. Besides the risks mentioned in Table 1 below, no other significant weaknesses are identified.

### B. Project

6. The Project will include the following outputs/components: (i) construction of new Chengbi campus phase II facilities and equipment; (ii) building multilevel TVET quality and capacity; and (iii) promoting TVET innovation and responsiveness.

### C. Executing Agency

7. The Baise Municipal Government (BMG) will be the executive agency and will have overall responsibility for project preparation and management. BMG is a prefecture-level city in Guangxi Zhuang Autonomous Region. BMG satisfies the ADB minimum financial management requirements for Executing Agencies. BMG's current financial management system is adequate to (i) record required financial transactions and balances; (ii) provide regular and reliable financial statements and monitoring reports during project implementation; (iii) safeguard the financial assets; and (iv) provide the required financial documents to audit acceptable to ADB

8. The BMG has some experience on foreign funded projects but not extensive. It is suggested to adjust the project management staff by strengthening the study and training. Special attention shall be directed to the reporting system, cost control and audit process, loan proceeds disbursement and loan repayment, fund monitoring and management and contract implementation etc.

### D. Implementing Agencies

9. There will be one (1) Implementing Agency for the Project including: Guangxi Baise University (BU).

10. Under the direct leadership of the Baise Municipal Government, BU has set up a leading Group co-chaired by BU Party Chief Chenglin Bian and BU President Yongjun Tang. The Project office under the Leading Group is directed by Yuanguo Yao from PMO. the leading Group was approved to establish in April, 2014 for the coordination, organization, management, the implementation of this project. There are ten departments in the leading Group including (1) Overall Project Coordination(PMO); (2) Comprehensive Affairs(Office of Principle); (3) Civil Works (Construction, Infrastructure Dept.); (4) Campus Building (Teaching Equipment, Property Dept.); (5) Curriculum Design(Teaching Affair Dept.); (6) Teacher Training (HR Dept.) ; (7) Social Safeguard (PMO); (8) Regional Cooperation(Teaching Affair Dept.); (9) Financial and Economic Analysis (Financial Dept.); and (10) Fund Supervision and Audit (Audit Office). There are 30 staffs in leading Group. There are 2 staff members working in the Financial Department, i.e., a director and a deputy director. The director of the leading Group's financial department is the director of Overall Project Coordination.

11. The responsibilities of the leading Group relating to financial management, at least, include the following:

- (1) Developing the annual work program and budget;
- (2) Coordinating financial management of the implementing agencies and consolidating
- (3) project accounts and financial statements;
- (4) Certification of contractor payments;
- (5) Preparation of reimbursement applications;
- (6) Maintenance of consolidated financial and physical progress reports;
- (7) Monitoring of counterpart fund utilization;
- (8) Consolidation of financial statements of all project components;
- (9) Preparation of progress reports and semi-annual reports and submit to BMG.

12. The proposed project involves four components and one IA is needed to implement the components. The IA assumes financial management and project management in the process of construction, operation and maintenance. Therefore, a thorough understanding of the ADB and national management requirements, as well as an integrated and unified form of project management in accounting, financial management, procurement and disbursement are all highly encouraged. Early development of the project management system in key areas will considerably improve the project's effectiveness and efficiency. The working rules and procedures should be gradually established and specified in a forthcoming project management manual. Therefore, it calls for attention to quickly strengthen the capacity of the leading Group. More professional staff members will have to be recruited in the leading Group. With the support of the consultants, the leading Group should realistically assess and identify the project's management and coordination requirements, in order to prepare a preliminary project management manual that will guide the future institutional setup and management of the project.

### A. Implementation Arrangements

13. The Baise Municipal Government (BMG) will be the Executing Agency (EA) for the project. BMG has set up an inter-agency Baise Project Leading Group (BPLG). The BPLG is chaired by the Standing Vice Mayor of Baise City and consisting members from the relevant governmental agencies. It will provide overall guidance, coordination, monitoring, and evaluation to the preparation and implementation of the projects financed by international financial institutions. The Baise Project Management Office (BPMO) has been established at the Baise Development and Reform Commission (BDRC) and includes representatives from Baise Finance Bureau (BFB) and Baise Housing and Urban-Rural Construction Bureau. The BPMO will be responsible for the day-to-day operation and coordination during project preparation and implementation. The project implementing agency (IA) is the Baise University (BU). The Working Group (WG) directly under BPMO has been established at Baise University. The WG is chaired by the BU's President who is assisted by two deputy team leaders: Deputy Director of BDRC and Deputy Director of Financial Department of BU. The organization chart of the BPMO Working Group is shown below.



### **Organization Chart of PMO**

14. Baise University is the Implementation Agency of ADB Baise Vocational Education Project. In order to guarantee the successful implementation of the Project, BU has set up a leading Group co-chaired by BU Party Chief Chenglin Bian and BU President Yongjun Tang. The Project office under the Leading Group is directed by Yuanguo Yao from PMO. The office has ten working groups that covers each project components. The detailed arrangement is shown below.



### Organization Chart of BU Working Group for the

15. The implementation arrangements are summarized below.

| Project Stakeholders  | Management Roles and Responsibilities   |  |  |
|---|---|--|--|
| <b>Oversight body</b><br>Baise Project Leading Group                                      | <ul> <li>Providing overall policy guidance;</li> <li>Facilitating interagency coordination; and</li> <li>Resolving any institutional problems affecting project preparation and implementation</li> </ul>   |  |  |
| Executing agency (EA)<br>Baise Municipal Government (BMG)                                 | <ul> <li>Providing overall project direction and any required policy guidance;</li> <li>Overseeing the preparation and implementation of the project;</li> <li>Providing overall strategic guidance to the project;</li> <li>Supporting cross-agency policy dialogue;</li> <li>Reviewing project progress to support effective implementation; and</li> <li>Ensuring counterpart contributions are provided for project implementation on time</li> </ul>   |  |  |
| Baise Finance Bureau (BFB)  | <ul> <li>Establishing, managing, monitoring, and reconciling<br/>the imprest account, and</li> <li>Reviewing the withdrawal applications submitted by<br/>the PMO and further submit it to higher financial<br/>authorities for approval.</li> </ul>  |  |  |
| Project Management Office (PMO)<br>(under the Baise Development and Reform<br>Commission) | <ul> <li>Directing project preparation and implementation activities;</li> <li>Developing the annual work program and budget;</li> <li>Coordinating procurement activities;</li> <li>Coordinating financial management of the implementing agency and consolidating project accounts and financial statements;</li> <li>Submitting withdrawal applications to the Baise Finance Bureau;</li> <li>Establishing baseline data to monitor project impacts, including regular monitoring of physical and financial progress;</li> <li>Submitting reports to ADB, BMG, and relevant government departments of Baise Municipality and Guangxi Province;</li> <li>Supervising and reporting safeguards implementation</li> </ul> |  |  |

| Project Stakeholders                         | Management Roles and Responsibilities  |  |  |
|--|--|--|--|
|  | <ul> <li>and compliance;</li> <li>Liaising with ADB and other agencies; and</li> <li>Coordinating the implementing agency for the consulting services, training and study tours.</li> </ul>  |  |  |
| Implementing agency (IA)<br>Baise University | <ul> <li>For civil works and equipment:</li> <li>Appointment of design, construction supervision, and required monitoring institutes;</li> <li>Undertaking detailed procurement work for all works and equipment contracts and the appointment of the procurement agent;</li> <li>Liaison with BFB and other agencies as needed regarding the timely provision of counterpart funding;</li> <li>Contract management;</li> <li>Project accounting;</li> <li>Progress monitoring and reporting to PMO; and</li> <li>Commissioning and handover of physical assets upon completion</li> <li>For Multilevel TVET capacity building and innovation:</li> <li>Implementing of the TVET capacity building activities involving the multilevel TVET strategic development; curriculum development; teacher training and pedagogy reform; and staff development;</li> <li>Implementing of the TVET innovation activities involving the school-industry partnerships; regional cooperation and specific researches;</li> <li>Providing counterpart staff for implementing the TVET strategies and in project impact evaluation;</li> <li>Participation in periodic review of TVET improvement strategies and in project impact evaluation;</li> <li>Participation in the procurement activities, such as technical specification, requirements and bidding evaluation, or in procurement relating to TVET strengthening activities; and</li> <li>Coordinating and providing overall project implementation management support involving loan implementation technical assistance and training and providing overall project</li> </ul> |  |  |
| Asian Development Bank                       | <ul> <li>Overall project administration;</li> <li>Orientations to the Executive Agency and<br/>Implementing Agency;</li> <li>Review of draft bidding documents and approval of bid<br/>evaluation reports; and</li> </ul>  |  |  |

Source: PPTA consultant estimates.

### 16. Individual financial management assessments are presented below.

### Guangxi Baise University/BVS

17. The Guangxi Baise University (BU) will implement the Guangxi Baise Vocational Education Development Project. BU is approved by the Ministry of Education of the People's Republic of China (MOE) as a full-time integrated undergraduate institute for local vocational education. The University has two campuses namely Donghe and Chengb. Currently, There are 2 staff members working in the Financial Department of the leading group.

18. However, the BU does not have experience with foreign funded projects. Its staff expressed a desire to receive training regarding ADB procedures and policies. The BU agreed to set up a special account for the project and accounting according to " accounting system of state-owned construction units" and provide relevant financial monitoring statements and/or reports to meet the ADB requirements.

19. The finance staff in BU is experienced in the accounting and disbursement procedures of domestic funded projects but in lack experience on ADB and other international funding agencies funded projects. BU is adequately staffed and complies with ADB standards for project accounting and financial management and willing to receive relevant trainings on ADB financial procedures.

20. All accounting staff in BU has enough experience on governmental accounting and receives appropriate accounting training for at least once a year. The accounting staff is rather stable. There are detailed descriptions and regulations on the accounting positions for the head of the department, accountants, and cashiers in the accounting department.

21. The current accounting procedures are adequate to the existing implementing agency. The accounting procedures such as transaction recording, chart of accounts, controls, and cost allocations are well established and are effective. The general ledger and subsidiary ledgers are always reconciled and in balance.

22. BU will maintain separate project accounts and records by funding source for all expenditures incurred on the project. Consolidated project financial statements will be prepared annually in accordance with applicable guidance and regulations, where these are generally consistent with internationally recognized accounting principles and practices.

23. BU prepares balance sheets, revenue and expenditure statements, total revenue statements, and supporting statements annually. They also prepare fixed asset statements and basic information at the end of each year. The recent two external audits identified a few issues at BU in violation of some financial regulations. But the audit reports nevertheless concluded that BU was able to conduct budget in a satisfactory manner, and the accounting statements can truthfully reveal the execution of the budget, as well as fiscal and financial revenues and expenditures. The internal control measures were complete and effective.

24. In conclusion, it has been found during the preliminary assessment that BU's current accounting records and statements are adequate and effective. It complies with the accounting standard and regulations of Institutions of higher learning. The General Ledger and subsidiary ledgers are reconciled and balanced. Document management is based on the PRC Accounting Law and Archives Law. It is able to provide related financial information and statements in a timely manner. Monthly and yearly financial statements are prepared for BU. Annual statements are available within 30 days of year end. BU has internal audit department. The external audit department does not audit it each year. The computerized financial management system is UFIDA. All financial statements are produced from the automated accounting systems. The financial staff understands electronic accounting.

25. It is suggested to strengthen the followings: establishing internal controls and audit systems; designate accounting staff members to the project; developing and upgrading reporting and monitoring information systems.

### E. Fund Flow Mechanism

26. The proposed lending and on-lending process of the Project is illustrated in below Figure. Once the Loan Agreement is signed between ADB (the Lender) and the Ministry of Finance (MOF) of the PRC (the Borrower), the MOF will make the proceeds of the ADB loan available to GZAR through a subsidiary loan agreement. An imprest account will be established under the

| Guangxi Baise Vocational Education | Appendix 9   |
|------------------------------------|--------------|
| Development Project (TA 8448-PRC)  | Final Report |

GZAR Finance Department on behalf of GZARG after the loan becomes effective. The GZARG will be responsible for the use, management, replenishment and liquidation of the imprest account and the imprest account will be exclusively used to finance the ADB share of the eligible expenditures. The GPFD will further sign an onlending agreement with the BMG. The BMG will make the project implementation arrangements with the IA for the project fund disbursements.

27. The IA will, as the end borrower, repay the debt and assume the foreign exchange and interest rate variation risks for the ADB loan. The BMG, on behalf of the GZARG, will be responsible for disbursement control and approval of all subprojects. It needs to perform effective management of the loan proceeds utilization to maximize the benefits of the loan.





Project disbursement

IA = implementing agency

ADB repayment

Counterpart funding and payments

- · - · - · ▶ Payment claims and withdrawal applications

### F. Summary of findings

28. The following risk assessments are based on existing circumstances, staffing and procedures and include recommendations for risk mitigation measures. The assessments also include if the accounting systems and internal control are adequate to ensure that project funds are used economically and efficiently and for the purpose intended, and that the use of the funds will be properly reported. The results of the risk assessments are listed below.

| Particulars   | Risk<br>Assessment | Remarks   |  |
|---|--------------------|---|--|
| 1. Implementing<br>Agencies   | Medium             | IA will be responsible for the implementation, operation and maintenance of the Project. IA has some experience in managing and implementing domestically funded construction projects.   |  |
| 2. Funds Flow   | Low                | IA will be responsible for loan repayment with strong financial supports from GZARG and BMG.  |  |
| 3. Staffing   | Low                | The finance staff will receive training in ADB financial management and disbursement procedures.  |  |
| 4. Accounting<br>Policies and<br>Procedures   | Low                | The IAs will adopt an accounting policy that is based on Generally Accepted Accounting Standards (GAAS).  |  |
| 5. Internal Audit   | Medium             | There is internal audit section but not perfectly effective.  |  |
| 6. External Audit   | Low                | The IA is audited by an independent external auditor on an irregular<br>basis in accordance with the Chinese accounting and auditing<br>system. The project, as an integrated part of the IA, will be within the<br>scope of future audits. |  |
| 7. Reporting and<br>MonitoringMediumThe IA has complete internal control but h<br>previous audits, thus the effectiveness of<br>strengthened. |                    | The IA has complete internal control but had issues identified by previous audits, thus the effectiveness of internal control needs to be strengthened.   |  |
| 8. Information<br>Systems   | Low                | The IA is using computerized accounting system.   |  |

### Summary Risk Analysis of Implementing Agencies

29. Therefore, the overall FM risk-rating of the project at appraisal stage is low to medium. The main problem is the lack of management ADB project experience; lack of accountants for review procedure; and imperfect internal auditing. The identified risks in financial management will be closely monitored during project implementation. There are no other significant weaknesses are identified on top of the aforementioned risks.

### G. Conclusion and Recommendations

30. This section summarizes the actions identified throughout the assessment for managing the risks to the proposed Project. The followings are the proposed actions to be undertaken during the implementation of the proposed Project:

- (i) Strengthen the IAs' financial staff devoted to the project;
- (ii) Complete and develop financial policies and procedures manual in order to guide staff activities and ensure staff accountability;
- (iii) Participate regular training on ADB disbursement policies, project financial reporting and audit requirements;

- (iv) Separate accounts to be maintained for all project components and to be audited by an external auditor acceptable to ADB.
- (v) Annual project accounts and underlying reports prepared and submitted to ADB during implementation;
- (vi) Seek external assistance such as technical assistance during implementation if necessary to satisfy ADB requirements.

### The Questionnaire for Financial Management Assessment

Project: <u>Guangxi Baise Vocational Education Development Project</u>

Name: <u>Yao Yuanguo</u> Date: <u>2014.4.5</u>

Department : Baise University, Finance Department

Post: Vice Director

| Торіс   | Response   | Remarks |
|---|--|---------|
| 1. Implementing Agency  |  |         |
| 1.1 What is the entity's legal status / registration?<br>a)   | Tang Yongjun; public institution   |         |
| 1.2 Has the entity implemented an externally financed project in the past (if so, please provide details)?  | No   |         |
| 1.3 What are the statutory reporting requirements for the entity?   | Monthly accounting statements;<br>annual financial reports   |         |
| 1.4 Is the governing body for the project independent?  | Yes  |         |
| 1.5 Is the organizational structure appropriate for the needs of the project?   | Yes  |         |
| 2. Funds Flow Arrangements  |  |         |
| 2.1 Describe (proposed) project funds flow<br>arrangements, including a chart and explanation of<br>the flow of funds from ADB, government and other<br>financiers. | (See the Investment Summary)   |         |
| 2.2 Are the (proposed) arrangements to transfer the proceeds of the loan (from the government /Finance Ministry) to the entity satisfactory?                        |  |         |
| 2.3 What have been the major problems in the past in receipt of funds by the entity?  | The process was often too<br>complicated to receive the funds<br>in time                           |         |
| 2.4 In which bank will the Imprest Account be opened?   | China Construction Bank  |         |
| 2.5 Does the (proposed) project implementing unit (PIU) have experience in the management of disbursements from ADB?  | No   |         |
| 2.6 Does the entity have/need a capacity to manage foreign exchange risks?  | Yes  |         |
| 2.7 How are the counterpart funds accessed?   | Mainly from fiscal spendings,<br>tuition and other revenues, the<br>domestic commercial bank loans |         |
| 2.8 How are payments made from the counterpart  | Separate revenue and   |         |

| Торіс  | Response   | Remarks  |
|--|--|--|
| funds?   | expenditure accounts. The<br>Municipal Finance Bureau<br>reviews the budget at the<br>beginning of the fiscal year and<br>directly disburses the contractors<br>according to the procurement<br>plans. |  |
| 2.9 If part of the project is implemented by communities or NGOs, does the PIU have the necessary reporting and monitoring features built into its systems to track the use of project proceeds by such agencies?              | Not applicable to the proposed project   |  |
| 2.10 Are the beneficiaries required to contribute to project costs? If beneficiaries have an option to contribute in kind (in the form of labor), are proper guidelines formulated to record and value the labor contribution? | Yes, required. Yes   |  |
| 3. Staffing  |  |  |
| 3.1 What is the (proposed) organizational structure<br>of the accounting department? Attach an<br>organization chart.  | Director of finance department   | The director<br>is in charge of<br>the<br>accounting<br>section and<br>budget<br>section; vice<br>director is in<br>charge of the<br>cashier<br>section and<br>the<br>comprehensi<br>ve section. |
| 3.2 Identify the (proposed) accounts staff, including job title, responsibilities, educational background and professional experience. Attach job descriptions and CVs of key accounting staff.                                | Job descriptions and CVs of key accounting staff are provided separately   |  |
| 3.3 Is the project finance and accounting function staffed adequately?   | Yes  |  |
| 3.4 Is the finance and accounts staff adequately qualified and experienced?  | Yes  |  |
| 3.5 Is the project accounts and finance staff trained in ADB procedures?   | Yes  |  |
| 3.6 What is the duration of the contract with the finance and accounts staff?  | Long-term contract   |  |
| 3.7 Indicate key positions not contracted yet, and the estimated date of appointment.  | No   |  |
| 3.8 Does the project have written position descriptions that clearly define duties,  | Yes  |  |

| Торіс  | Response   | Remarks |
|--|--|---------|
| responsibilities, lines of supervision, and limits of authority for all of the officers, managers, and staff?  |  |         |
| 3.9 At what frequency are personnel transferred?   |  |         |
| 3.10 What is training policy for the finance and accounting staff?   | Annual accounting continuing<br>education program, and other<br>programs provided by municipal<br>finance bureau   |         |
| 4. Accounting Policies and Procedures  |  |         |
| 4.1 Does the entity have an accounting system that<br>allows for the proper recording of project financial<br>transactions, including the allocation of<br>expenditures in accordance with the respective<br>components, disbursement categories, and sources<br>of funds? Will the project use the entity accounting<br>system? | Yes, the entity has an accounting<br>system that allows for the proper<br>recording of project financial<br>transactions, including the<br>allocation of expenditures in<br>accordance with the respective<br>components, disbursement<br>categories, and sources of funds.<br>Yes, it will.   |         |
| 4.2 Are controls in place concerning the preparation<br>and approval of transactions, ensuring that all<br>transactions are correctly made and adequately<br>explained?  | Yes  |         |
| 4.3 Is the chart of accounts adequate to properly account for and report on project activities and disbursement categories?  | Yes  |         |
| 4.4 Are cost allocations to the various funding sources made accurately and in accordance with established agreements?   | Yes, cost allocations to the<br>various funding sources are<br>made accurately and in<br>accordance with established<br>agreements   |         |
| 4.5 Are the General Ledger and subsidiary ledgers reconciled and in balance?   | Yes  |         |
| 4.6 Are all accounting and supporting documents retained on a permanent basis in a defined system that allows authorized users easy access?  |  |         |
| Segregation of Duties  |  |         |
| <ul> <li>4.7 Are the following functional responsibilities performed by different units or persons:</li> <li>(i)authorization to execute a transaction;</li> <li>(ii)recording of the transaction; and (iii) custody of assets involved in the transaction?</li> </ul>   | 1) The cashier section is<br>responsible for the submission of<br>daily accounting activities to the<br>municipal finance bureau for<br>review, 2) the accounting section is<br>responsible for the book-keeping of<br>the transactions; 3) daily operational<br>balance is kept in the university<br>account, the authorized capital is in<br>the special account, other budget<br>is kept in the account of the<br>finance bureau who disburses<br>the contracts directly. |         |
| 4.8 Are the functions of ordering, receiving,  | Yes  |         |

| Торіс  | Response   | Remarks |
|--|--|---------|
| accounting for, and paying for goods and services appropriately segregated?  |  |         |
| 4.9 Are bank reconciliations prepared by someone other than those who make or approve payments?  | Yes  |         |
| Budgeting System 预算制度  |  |         |
| 4.10 Do budgets include physical and financial targets?  | Yes, includes physical and<br>financial targets  |         |
| 4.11 Are budgets prepared for all significant activities in sufficient detail to provide a meaningful tool with which to monitor subsequent performance?   | Yes  |         |
| 4.12 Are actual expenditures compared to the<br>budget with reasonable frequency, and explanations<br>required for significant variations from the budget?   | Yes  |         |
| 4.13 Are approvals for variations from the budget required in advance or after the fact?   | In advance   |         |
| 4.14 Who is responsible for preparation and approval of budgets?   | The budget is reviewed by the<br>finance Bureau and the<br>university committee  |         |
| 4.15 Are procedures in place to plan project activities, collect information from the units in charge of the different components, and prepare the budgets?  | Yes  |         |
| 4.16 Are the project plans and budgets of project activities realistic, based on valid assumptions, and developed by knowledgeable individuals?  | Yes, the project plans and<br>budgets of project activities are<br>realistic, based on valid<br>assumptions, and developed by<br>knowledgeable individuals |         |
| Payments 支付  |  |         |
| <ul> <li>4.17 Do invoice-processing procedures provide for:</li> <li>(i)Copies of purchase orders and receiving reports to be obtained directly from issuing departments?</li> <li>(ii) Comparison of invoice quantities, prices and terms, with those indicated on the purchase order and with records of goods actually received? (iii) Comparison of invoice quantities with those indicated on the receiving reports? (iv) Checking the accuracy of calculations?</li> </ul> | Yes  |         |
| 4.18 Are all invoices stamped PAID, dated, reviewed and approved, and clearly marked for account code assignment?  | Not all invoices are stamped<br>"PAID", but dated and signed<br>and clearly marked for account<br>codes  |         |
| 4.19 Do controls exist for the preparation of the payroll and are changes to the payroll properly authorized?  | Yes, prepared by the university<br>Personnel Department and<br>approved by the Municipal<br>Human Resources and Social<br>Security Bureau, finally paid by |         |

| Торіс   | Response  | Remarks |
|---|---|---------|
|   | the financial department  |         |
| Policies And Procedures   |   |         |
| 4.20 What is the basis of accounting (e.g., cash, accrual)?   | On the cash basis;  |         |
| 4.21 What accounting standards are followed?  | Accounting system of public<br>institution-higher educational<br>institutions.  |         |
| 4.22 Does the project have an adequate policies<br>and procedures manual to guide activities and<br>ensure staff accountability?  | Yes   |         |
| 4.23 Is the accounting policy and procedure manual updated for the project activities?  | Yes   |         |
| 4.24 Do procedures exist to ensure that only<br>authorized persons can alter or establish a new<br>accounting principle, policy or procedure to be used<br>by the entity?                     | Yes   |         |
| 4.25 Are there written policies and procedures covering all routine financial management and related administrative activities?   | Yes   |         |
| 4.26 Do policies and procedures clearly define<br>conflict of interest and related party transactions<br>(real and apparent) and provide safeguards to<br>protect the organization from them? | Yes   |         |
| 4.27 Are manuals distributed to appropriate personnel?  | Yes   |         |
| Cash and Bank   |   |         |
| 4.28 Indicate names and positions of authorized signatories in the bank accounts.   | The bank accounts: Baise<br>University; signatory: Tang,<br>Yongjun (president), Tan,<br>Huanchan (director of financial<br>department), Zhong, Li (head of<br>Cashier section) |         |
| 4.29 Does the organization maintain an adequate,<br>upto-date cashbook, recording receipts and<br>payments?   | Yes   |         |
| 4.30 Do controls exist for the collection, timely deposit and recording of receipts at each collection location?  | Yes   |         |
| 4.31 Are bank and cash reconciled on a monthly basis?   | Yes   |         |
| 4.32 Are all unusual items on the bank reconciliation reviewed and approved by a responsible official?  | Yes   |         |
| 4.33 Are all receipts deposited on a timely basis?  | All receipts are deposited in the banks   |         |

| Торіс  | Response   | Remarks |
|--|--|---------|
| Safeguard over Assets  |  |         |
| 4.34 Is there a system of adequate safeguards to protect assets from fraud, waste and abuse?   | Yes  |         |
| 4.35 Are subsidiary records of fixed assets and stocks kept up to date and reconciled with control accounts?   | Yes  |         |
| 4.36 Are there periodic physical inventories of fixed assets and stocks?   | Yes  |         |
| 4.37 Are assets sufficiently covered by insurance policies?  | Yes  |         |
| Other Offices and Implementing Entities  |  |         |
| 4.38 Are there any other regional offices or executing entities participating in implementation?   | No   |         |
| 4.39 Has the project established controls and procedures for flow of funds, financial information, accountability, and audits in relation to the other offices or entities?    | Yes  |         |
| 4.40 Does information among the different offices/implementing agencies flow in an accurate and timely fashion?  | Yes  |         |
| 4.41 Are periodic reconciliations performed among the different offices/implementing agencies?   | Yes  |         |
| Other 其他   |  |         |
| 4.42 Has the project advised employees,<br>beneficiaries and other recipients to whom to report<br>if they suspect fraud, waste or misuse of project<br>resources or property? | Discipline inspection office   |         |
| 5. Internal Audit  |  |         |
| 5.1 Is there a internal audit department in the entity?  | Yes  |         |
| 5.2 What are the qualifications and experience of audit department staff?  | certified accountants, accountants   |         |
| 5.3 To whom does the internal auditor report?  | The university committee   |         |
| 5.4 Will the internal audit department include the project in its work program?  | Yes  |         |
| 5.5 Are actions taken on the internal audit findings?  | Written reports submitted to the<br>university committee, and up to<br>the committee's discretion for<br>further submission to the<br>municipal inspection commission<br>or to the law enforcement |         |

| Торіс  | Response   | Remarks |
|--|--|---------|
| 6. External Audit  |  |         |
| 6.1 Is the entity financial statement audited regularly<br>by an independent auditor? Who is the auditor?  | Yes, GZAR Audit Bureau; yes                          |         |
| 6.2 Are there any delays in audit of the entity?<br>When are the audit reports issued?   | No   |         |
| 6.3 Is the audit of the entity conducted according to the International Standards on Auditing?   | Domestic audit standards                             |         |
| 6.4 Were there any major accountability issues brought out in the audit report of the past three years?  | No   |         |
| 6.5 Will the entity auditor audit the project accounts<br>or will another auditor be appointed to audit the<br>project financial statements?   | Yes the same auditor.                                |         |
| 6.6 Are there any recommendations made by the auditors in prior audit reports or management letters that have not yet been implemented?  | Yes  |         |
| 6.7 Is the project subject to any kind of audit from an independent governmental entity (e.g., the supreme audit institution) in addition to the external audit?   | Yes  |         |
| 6.8 Has the project prepared acceptable terms of reference for an annual project audit?  | Not yet  |         |
| 7. Reporting and Monitoring  |  |         |
| 7.1 Are financial statements prepared for the entity?<br>In accordance with which accounting standards?  | Yes, accounting standards for public institutions    |         |
| 7.2 Are financial statements prepared for the<br>implementing unit?  | Currently not, but will be<br>prepared in the future |         |
| 7.3 What is the frequency of preparation of financial statements? Are the reports prepared in a timely fashion so as to useful to management for decision making?  | Monthly statements                                   |         |
| 7.4 Does the reporting system need to be adapted to report on the project components?  |  |         |
| 7.5 Does the reporting system have the capacity to<br>link the financial information with the project's<br>physical progress? If separate systems are used to<br>gather and compile physical data, what controls are<br>in place to reduce the risk that the physical data<br>may not synchronize with the financial data? | Yes  |         |
| 7.6 Does the project have established financial management reporting responsibilities that specify what reports are to be prepared, what they are to contain, and how they are to be used?   | No   |         |
| 7.7 Are financial management reports used by management?   | Yes  |         |
| 7.8 Do the financial reports compare actual expenditures with budgeted and programmed  | Yes comparisons were made to examine the consistency |         |

| Торіс  | Response                           | Remarks |
|--|------------------------------------|---------|
| allocations?   |                                    |         |
| 7.9 Are financial reports prepared directly by the automated accounting system or are they prepared by spreadsheets or some other means? | By the automated accounting system |         |
| 8. Information Systems   |                                    |         |
| 8.1 Is the financial management system computerized?   | Yes                                |         |
| 8.2 Can the system produce the necessary project financial reports?  | Yes                                |         |
| 8.3 Is the staff adequately trained to maintain the system?  | Yes                                |         |
| 8.4 Does the management organization and processing system safeguard the confidentiality, integrity and availability of the data?        | Yes                                |         |

## Supplementary Appendix 1

## Detailed Cost Estimates & Financing Plan

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

## DETAILED COST ESTIMATES AND FINANCING PLAN

1. The cost analysis summarizes costs using standard disbursement cost categories described in **Table 1**.

|      | -   | Table 1. Cost Analysis Categories  |
|------|---|--|
| Code | Component   | Description  |
| 03   | Civil Works   | <ul> <li>Earth moving, excavation, cut and fill, grouting, etc.</li> <li>Concrete work including rebar and formwork (e.g. foundations, building components, tanks, bridge components, etc.)</li> <li>Metal fabrication (building framework, tanks, other metal structures, etc.)</li> <li>Building construction on roads, embankments, pipelines, etc.</li> <li>Landscaping, planting, fences, etc.</li> <li>Plumbing, electrical wiring and other utility services</li> <li>Other construction services</li> <li>The cost of special purpose construction equipment will normally be included in construction contracts and considered a civil cost (e.g. earth movers, cranes, arc welding equipment, site dewatering pumps, etc. )</li> </ul> |
| 18   | Materials   | <ul> <li>Major purchases of project materials that are procured separately from<br/>associated construction services (e.g. aggregate, rock, steel, cement, sand,<br/>wood, rebar, pipes, asphalt, seedling trees, grass seeds and paving blocks, etc.)</li> </ul>  |
| 15   | Equipment,<br>Vehicles,<br>Furniture                    | <ul> <li>General purpose vehicles (cars and trucks, etc.)</li> <li>General purpose tools (e.g. landscape and building maintenance equipment, etc.)</li> <li>Office furniture and equipment (desks, cabinets, computers, copiers, phones, etc.)</li> </ul>  |
|      | Capital Goods   | <ul> <li>Electrical equipment (e.g. motors, pumps, controllers, electrical panels, telecommunication antennae, etc.)</li> <li>Mechanical equipment (e.g. overhead cranes, water and wastewater treatment process equipment, meters and other measuring devices, gates, refrigeration, heating and air conditioning, etc.)</li> <li>Special purpose vehicles for project operations (e.g. bulldozers and compacters used in a landfill operation, warehouse vehicles, etc.)</li> <li>Other larger machinery and equipment manufactured off site</li> </ul>  |
| 09   | Research and<br>Development                             | <ul> <li>Scientific investigations (e.g. water quality modelling, bench test of a treatment process, archaeological investigation, survey of flora and fauna, etc.)</li> <li>Technical support services (e.g. agricultural extension and small business, etc.)</li> <li>Demonstration projects (crop production, soil conservation, water harvesting, etc.)</li> </ul>   |
| 21   | Consultancy and<br>Training<br>(Consulting<br>Services) | <ul> <li>Any costs relating to consultant service during implementation</li> </ul>   |
| 24   | Other Training<br>(Training and<br>Fellowships)         | <ul> <li>Technical training for project operations (training in water or wastewater treatment, SCADA, hydrological modeling for reservoir operations, etc.)</li> <li>Training in ADB procedures</li> <li>Training in project and enterprise management (finance and accounting, etc.)</li> <li>Other training (e.g. participatory methods, WUAs, and IWRM, etc.)</li> </ul>  |
|      | Land acquisition<br>and<br>Resettlement                 | <ul> <li>Land purchase</li> <li>Compensation for loss of assets and livelihood</li> <li>Cost to resettle displaced persons (new housing, new land, retraining, moving costs, costs to assist the host community, etc.)</li> <li>LAR monitoring</li> </ul>  |

### Table 1: Cost Analysis Categories<sup>\*</sup>

| Code | Component                   | Description  |
|------|-----------------------------|--|
|      | Environmental<br>Protection | - Any costs of construction and procedure relating to environmental protection             |
|      | FIDIECIIDII                 |  |
|      | Bidding                     | <ul> <li>Any costs relating to bidding documents and expenses</li> </ul>                   |
|      | Documents and               |  |
|      | Expenses                    |  |
|      | Taxes and Duties            | <ul> <li>VAT and other taxes and duties on goods and services</li> </ul>                   |
|      | Project                     | <ul> <li>Project reporting, project audits</li> </ul>                                      |
|      | Management                  | <ul> <li>Project accounting and financial management</li> </ul>                            |
|      | and Others                  | - Funds to purchase initial inventories of materials and supplies and finance startup      |
|      |                             | activities for project administration and operation (do not double count with other items) |
|      |                             | - Implementation of management software and methods (e.g. accounting software              |
|      |                             | and project management procedures, etc.)   |
|      |                             | <ul> <li>Assistance to develop new institutions (e.g. WUAs, etc.)</li> </ul>               |
|      |                             | <ul> <li>Any other costs relating to project management</li> </ul>                         |

Note: ADB = Asian Development Bank; IWRM = Integrated Water Resources Management; LAR = Land Acquisition and Resettlement; SCADA = Supervisory Control and Data Acquisition; VAT = Value Added Tax; WUA = Water User Association.

Source: Cost categories provided in ADB, 2005. <u>Financial Management and Analysis of Projects</u> (page 6, section 3.4.3).

2. For estimation of total costs, physical and price contingencies and financing charges during implementation are estimated.

3. The following key assumptions have been made:

(i) Taxes and duties are shown separately. Tax assumptions are as follows:

| Тах                          | Rate   | Base  |
|------------------------------|--------|-------|
| Value added tax              | 17.00% | Sales |
| Tax on civil works contract  | 3.41%  | Sales |
| Composite tax on other items | 5.00%  | Sales |

- (ii) Exchange Rate: CNY 6.2 = \$1
- (iii) All costs are in May 2014 prices
- (iv) Physical contingencies are computed at 8%.
- (v) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

|                                    | 2015  | 2016  | 2017  | 2018   | 2019   | Average |
|------------------------------------|-------|-------|-------|--------|--------|---------|
| Domestic price escalators (%/year) | 1.50% | 4.55% | 7.68% | 10.91% | 14.24% | 7.78%   |
| Foreign price escalators (%/year)  | 0.50% | 1.71% | 3.54% | 4.57%  | 6.04%  | 3.27%   |

Assumed foreign and domestic rates (2013 to 2018).

4. Financing costs include capitalized interest and commitment fee charges. Interest during construction has been assumed at 1.57% which comprises the 5-year LIBOR based SWAP rate at 2.52% (June 4, 2014) plus ADB margin of 0.5% and maturity premium of 0.1%. Front end fees are assumed to be waived. Interest rates and terms are as follows:

| Intere<br>Rate | st Comr<br>Ch | nitment<br>arge | Total<br>Period of<br>the Loan<br>(in years) | Grace<br>Period | Interest<br>Capitalized<br>into Loan | Commitment<br>Fee<br>Capitalized<br>into Loan |
|----------------|---------------|-----------------|--|-----------------|--------------------------------------|---|
|----------------|---------------|-----------------|--|-----------------|--------------------------------------|---|

| ADB Loan       | 1.57%         | 0.15% | 25 | 6 | 100% | 100% |
|----------------|---------------|-------|----|---|------|------|
| ADB = Asian De | evelopment Ba | ank.  |    |   |      |      |

### Project Investment Plan

5. The project investment cost is estimated at \$103.54 million, including taxes and duties of \$5.38 million. The total cost includes physical and price contingencies, interest during construction. The indicative project investment plan is summarized in **Table 2** below.

### Table 2: Project Investment Plan (\$ Million)

| Item   | Amount |
|--|--------|
| A. Base Cost <sup>a</sup>  |        |
| Improving TVET quality and capacity development                        | 3.65   |
| Chengbi campus construction and promoting environmental sustainability | 82.38  |
| Promoting TVET innovation and relevance                                | 0.77   |
| Project implementation management                                      | 0.58   |
| Subtotal (A)   | 87.38  |
| B. Contingencies <sup>b</sup>  | 10.09  |
| C. Financing Charges During Implementation <sup>c</sup>                |        |
| ADB  | 3.20   |
| Domestic Bank  | 2.72   |
| ADB Commitment Charge  | 0.15   |
| Subtotal (C)   | 6.07   |
| Total (A+B+C) <sup>d</sup>   | 103.54 |

ADB = Asian Development Bank, TVET = technical and vocational education and training.

<sup>a</sup> In May 2014 prices.

<sup>b</sup> Physical contingency is computed at 8% of the base costs. Price contingency is computed based on the following price escalators published by ADB: 1.0% (2015) and 1.4% annually for 2016, 2017, 2018, and 2019 on foreign exchange costs and 3.0% annually throughout 2015 to 2019 on local currency costs.

<sup>c</sup> Includes interest during construction and commitment charges. Interest during construction has been computed at the 5-year USD fixed swap rate plus a spread of 0.5% and maturity premium of 0.1%.

<sup>d</sup> Includes taxes and duties of USD 5.38 million to be financed from government and ADB loan. ADB loan will cover taxes and duties on items financed by ADB. Financing of taxes and duties is proposed because the due diligence showed that (i) the amount of taxes and duties is within the reasonable threshold identified in the country partnership strategy, (ii) the amount does not represent an excessive share of the investment plan, (iii) taxes and duties apply only in respect to ADB-financed expenditures, and (iv) financing of the taxes and duties is relevant for the success of the project.

Source: Asian Development Bank estimates.

### **Financing Plan**

6. The Government of the PRC has requested a loan of \$50 million from ADB's ordinary capital resources to help finance the project. The loan will have a 25-year term, including a grace period of 6 years, <sup>1</sup>straight line repayment option, an annual interest rate determined in accordance with ADB's London Interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements. Based on this, the average loan maturity is 15.75 years and the maturity premium payable to ADB is 0.10% per annum. The loan will cover civil works, equipment, and TVET institutional strengthening and capacity development.

7. The financing plan is in Table 3 and is further detailed in the project administration manual (PAM). BMG will finance 39.25% of the project and the remaining counterpart funding of

<sup>&</sup>lt;sup>1</sup> The reason for a grace period of 6 years is to better align with the loan from the domestic commercial bank, which has a maturity of 7 years, starting withdrawal by 2015 and straightline repayment period from 2016 to 2021.

\$12.90 million will be provided by Baise University through a domestic bank loan for which they have received a commitment letter. The government and executing agency have given an assurance that they will provide counterpart funding for the project in a timely manner, and will provide any additional counterpart funding needed to cover any shortfall of funds or cost overruns.

| Table 3: Financing Plan (\$ Million) |        |                    |  |  |  |  |  |
|--------------------------------------|--------|--------------------|--|--|--|--|--|
| Source                               | Amount | Share of Total (%) |  |  |  |  |  |
| Asian Development Bank (OCR)         | 50.00  | 48.29              |  |  |  |  |  |
| Baise Municipal Government           | 40.64  | 39.25              |  |  |  |  |  |
| Domestic Bank                        | 12.90  | 12.46              |  |  |  |  |  |
|                                      | 103.54 | 100.00             |  |  |  |  |  |

Source: Asian Development Bank estimates.

8. The borrower of the loan is the PRC. The loan proceeds will be entirely made available to the Guangxi Zhuang Autonomous Region Government (GZARG) under its relending arrangements, upon terms and conditions satisfactory to ADB. The GZARG will make the loan proceeds entirely available to BMG as indicated in the PAM. The onlending terms and conditions of the loan proceeds will be the same as those of the ADB loan. The BMG will bear the foreign exchange and interest rate variation risks in proportion to the loan amount it receives. The indicative flow of funds and the relending and onlending arrangements are in the PAM.

9. The overall total project cost by financier is shown in **Table 4.** The overall total project cost by years is shown in **Table 5.** The overall total project cost by expenditure is shown in **Table 6.** The overall total project cost by components is shown in **Table 7.** The allocation and withdrawal of loan proceeds are shown in **Table 8** and **Figure 1** respectively.

| Item  |   | ADB |        |         | Baise Municipal<br>Government |          |           | Commercial<br>Banks(Construction<br>bank) |        |    |        |   | TOTAL  |                    |
|-------|---|-----|--------|---------|-------------------------------|----------|-----------|---|--------|----|--------|---|--------|--------------------|
|       |   |     | Amount | %       | 1                             | Amount   | %         | 1   | Amount | 8  | %      | A | Amount | % of Total<br>Cost |
| A     | Base Costs                                      |     | 5.5    | 1.17    |                               |          |           | -   | 1110   |    |        | - |        |                    |
| 1     | Civil Works                                     | 1   | 36.65  | 72.36%  | ٢                             | 1.10     | 2.16%     |   | 12.90  |    | 25.48% |   | 50.65  | 48.91%             |
| 2     | Equipment                                       |     | 5.00   | 24.19%  | P                             | 15.67    | 75.81%    | 5   | 0.00   |    | 0.00%  |   | 20.67  | 19.96%             |
| 2.1   | Other Equipment                                 |     | 5.00   | 48.30%  | F                             | 5.35     | 51.70%    |   | 0.00   |    | 0.00%  |   | 10.35  | 10.00%             |
| 2.2   | 2 Teaching Equipment                            |     | 0.00   | 0.00%   |                               | 10.32    | 100.00%   | *   | 0.00   |    | 0.00%  |   | 10.32  | 9.97%              |
| 3     | Land Acquisition, Compensation and Resettlement |     | 0.00   | 0.00%   |                               | 0.00     | 0.00%     |   | 0.00   | R. | 0.00%  |   | 0.00   | 0.00%              |
| 4     | Environmental Protection                        | *   | 0.00   | 0.00%   |                               | 0.74     | 100.00%   | ٢   | 0.00   |    | 0.00%  |   | 0.74   | 0.71%              |
| 5     | Water and Soil Protection                       |     | 0.00   | 0.00%   | "                             | 2.36     | 100.00%   | ٣   | 0.00   |    | 0.00%  |   | 2.36   | 2.27%              |
| 6     | Project Management                              | 1   | 0.00   | 0.00%   |                               | 6.05     | 100.00%   | ۴   | 0.00   |    | 0.00%  |   | 6.05   | 5.85%              |
| 7     | Survey and Design                               | ۲   | 0.00   | 0.00%   | ۲                             | 1.91     | 100.00%   | ۲   | 0.00   |    | 0.00%  |   | 1.91   | 1.85%              |
| 8     | Improving TVET quality and capacity development |     | 3.65   | 100.00% | ۲                             | 0.00     | 0.00%     | ۴   | 0.00   |    | 0.00%  |   | 3.65   | 3.52%              |
| 9     | Promoting TVET innovation and relevance         | r   | 0.77   | 100.00% | ٣                             | 0.00     | 0.00%     | ۲   | 0.00   |    | 0.00%  |   | 0.77   | 0.75%              |
| 10    | Project implementation management               | ٣   | 0.58   | 100.00% | ۲                             | 0.00     | 0.00%     | ٣   | 0.00   |    | 0.00%  |   | 0.58   | 0.56%              |
|       | Subtotal (A1)                                   |     | 46.65  | 53.39%  | P                             | 27.83    | 31.85%    | ٣   | 12.90  |    | 14.77% |   | 87.38  | 84.39%             |
| в     | Contingencies                                   |     | - e 1  | -       |                               |          |           |   |        |    |        |   | -      | -                  |
|       | Physical Contingency                            |     | 0.00   | 0.00%   | ۲                             | 6.59     | 100.00%   | ٢   | 0.00   |    | 0.00%  |   | 6.59   | 6.36%              |
|       | Price Contingency                               | •   | 0.00   | 0.00%   | ۲                             | 3.50     | 100.00%   |   | 0.00   |    | 0.00%  |   | 3.50   | 3.38%              |
| Total | Contingencies (B)                               |     | 0.00   | 0.00%   |                               | 10.09    | 100.00%   |   | 0.00   | F. | 0.00%  |   | 10.09  | 9.75%              |
| С     | Financial Charges During Implementation         |     |        | _       |                               | 1.4.4.4. | 12215-016 |   |        |    |        |   | -      | -                  |
| Ê.    | Interest During Implementation                  | F   | 3.20   | 54.01%  | ۲                             | 2.72     | 45.99%    | ٣   | 0.00   |    | 0.00%  |   | 5.92   | 5.72%              |
|       | ADB   |     | 3.20   | 100.00% |                               | 0.00     | 0.00%     | r   | 0.00   |    | 0.00%  |   | 3.20   | 3.09%              |
|       | Domestic Bank                                   | ۲   | 0.00   | 0.00%   | P                             | 2 72     | 100.00%   |   | 0.00   |    | 0.00%  |   | 2 72   | 2 63%              |
|       | ADB Commitment Charge                           |     | 0.15   | 100.00% |                               | 0.00     | 0.00%     | ٣   | 0.00   |    | 0.00%  |   | 0.15   | 0.15%              |
| Finar | cial Charges (C)                                |     | 3.35   | 55 17%  |                               | 2 72     | 44 83%    |   | 0.00   |    | 0.00%  |   | 6.07   | 5 87%              |
| TOTA  | L PROJECT COSTS (A+B+C)                         |     | 50.00  | 48.29%  |                               | 40.64    | 39.25%    |   | 12.90  |    | 12.46% | 7 | 103.54 | 100.00%            |

## Table 4: Detailed Cost Estimates by Financier (\$ Million)

|                  |   | 2015  | 2016  | 2017  | 2018  | 2019 | Total  |
|------------------|---|-------|-------|-------|-------|------|--------|
| Α                | Base Costs                                      |       |       |       |       |      |        |
|                  | Investment Costs                                |       |       |       |       |      |        |
| 1                | Civil Works                                     | 10.13 | 15.19 | 15.19 | 7.60  | 2.53 | 50.65  |
| 2                | Equipment                                       | 4.13  | 6.20  | 6.20  | 3.10  | 1.03 | 20.67  |
| 3                | Land Acquisition, Compensation and Resettlement | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00   |
| 4                | Environmental Protection                        | 0.15  | 0.22  | 0.22  | 0.11  | 0.04 | 0.74   |
| 5                | Water and Soil Protection                       | 0.47  | 0.71  | 0.71  | 0.35  | 0.12 | 2.36   |
| 6                | Project Management                              | 1.21  | 1.82  | 1.82  | 0.91  | 0.30 | 6.05   |
| 7                | Survey and Design                               | 0.38  | 0.57  | 0.57  | 0.29  | 0.10 | 1.91   |
| 8                | Improving TVET quality and capacity development | 0.73  | 1.09  | 1.09  | 0.55  | 0.18 | 3.65   |
| 9                | Promoting TVET innovation and relevance         | 0.15  | 0.23  | 0.23  | 0.12  | 0.04 | 0.77   |
| 10               | Project implementation management               | 0.12  | 0.17  | 0.17  | 0.09  | 0.03 | 0.58   |
|                  | Subtotal (A)                                    | 17.48 | 26.21 | 26.21 | 13.11 | 4.37 | 87.38  |
| В                | Contingencies                                   |       |       |       |       |      |        |
|                  | Physical Contingency                            | 1.32  | 1.98  | 1.98  | 0.99  | 0.33 | 6.59   |
|                  | Price Contingency                               | 0.15  | 0.71  | 1.34  | 0.90  | 0.40 | 3.50   |
| <b>Total Cor</b> | ntingencies (B)                                 | 1.47  | 2.69  | 3.31  | 1.89  | 0.73 | 10.09  |
| С                | Financial Charges During Implementation         |       |       |       |       |      |        |
|                  | Interest During Implementation                  | 0.53  | 1.17  | 1.35  | 1.45  | 1.42 | 5.92   |
|                  | ADB   | 0.11  | 0.38  | 0.70  | 0.95  | 1.06 | 3.20   |
|                  | Domestic Bank                                   | 0.42  | 0.79  | 0.65  | 0.50  | 0.36 | 2.72   |
|                  | ADB Commitment Charge                           | 0.07  | 0.05  | 0.03  | 0.01  | 0.00 | 0.15   |
| Financial        | Charges (C)                                     | 0.60  | 1.21  | 1.38  | 1.46  | 1.42 | 6.07   |
| TOTAL P          | ROJECT COSTS (A+B+C)                            | 19.54 | 30.12 | 30.90 | 16.46 | 6.52 | 103.54 |

## Table 5: Detailed Cost Table 5 Detailed Cost Estimates by Years (\$ Million)

|              |   |                   | (CNY million)       |            |                   | (\$million)         |            |
|--------------|---|-------------------|---------------------|------------|-------------------|---------------------|------------|
| ltem         |   | Local<br>Currency | Foreign<br>Exchange | Total Cost | Local<br>Currency | Foreign<br>Exchange | Total Cost |
| A. Investme  | nt Costs  |                   |                     |            |                   |                     |            |
| 1            | Civil Works                                     | 62.80             | 251.21              | 314.01     | 10.13             | 40.52               | 50.65      |
| 2            | Equipment                                       | 25.63             | 102.52              | 128.16     | 4.13              | 16.54               | 20.67      |
| 3            | Land Acquisition, Compensation and Resettlement | 0.00              | 0.00                | 0.00       | 0.00              | 0.00                | 0.00       |
| 4            | Environmental Protection                        | 4.58              | 0.00                | 4.58       | 0.74              | 0.00                | 0.74       |
| 5            | Water and Soil Protection                       | 14.60             | 0.00                | 14.60      | 2.36              | 0.00                | 2.36       |
| 6            | Project Management                              | 37.53             | 0.00                | 37.53      | 6.05              | 0.00                | 6.05       |
| 7            | Survey and Design                               | 11.87             | 0.00                | 11.87      | 1.91              | 0.00                | 1.91       |
| 8            | Improving TVET quality and capacity development | 0.00              | 22.61               | 22.61      | 0.00              | 3.65                | 3.65       |
| 9            | Promoting TVET innovation and relevance         | 0.00              | 4.79                | 4.79       | 0.00              | 0.77                | 0.77       |
| 10           | Project implementation management               | 0.00              | 3.60                | 3.60       | 0.00              | 0.58                | 0.58       |
|              | Subtotal(A)                                     | 157.01            | 384.73              | 541.75     | 25.32             | 62.05               | 87.38      |
| B. Continge  | ncies   |                   |                     |            |                   |                     |            |
| 1            | Physical Contingency                            | 12.56             | 28.30               | 40.86      | 2.03              | 4.56                | 6.59       |
| 2            | Price Contingency                               | 10.71             | 11.00               | 21.71      | 1.73              | 1.77                | 3.50       |
|              | Subtotal(B)                                     | 23.27             | 39.29               | 62.57      | 3.75              | 6.34                | 10.09      |
| C. Financing | Charges During Implementation                   |                   |                     |            |                   |                     |            |
| 1            | Interest During Implementation                  | 19.83             | 16.88               | 36.71      | 3.20              | 2.72                | 5.92       |
|              | ADB   | 19.83             | 0.00                | 19.83      | 3.20              | 0.00                | 3.20       |
|              | Domestic Bank                                   | 0.00              | 16.88               | 16.88      | 0.00              | 2.72                | 2.72       |
| 2            | ADB Commitment Charge                           | 0.95              | 0.00                | 0.95       | 0.15              | 0.00                | 0.15       |
|              | Subtotal(C)                                     | 20.78             | 16.88               | 37.66      | 3.35              | 2.72                | 6.07       |
| Total Projec | t Cost (A+B+C)                                  | 201.06            | 440.91              | 641.98     | 32.43             | 71.11               | 103.54     |

| Table 6: Detailed Cost Estimates by Expendence | nditure Category (\$ Million) |
|--|-------------------------------|
|--|-------------------------------|

| No.  | Item  | Total<br>Cost | Improving TVET quality<br>and capacity<br>development |      |                       | Chengt<br>constru<br>promoting e<br>susta | oi c<br>ict | campus<br>ed and<br>vironmental<br>ability | Promoting TVET<br>innovation and relevanc |                       |  |
|------|---|---------------|---|------|-----------------------|---|-------------|--|---|-----------------------|--|
|      |   |               | Amount  | 7    | % of Cost<br>Category | Amount                                    | ٢           | % of Cost<br>Category                      | Amount                                    | % of Cost<br>Category |  |
| Α.   | Investment Cost                               | -             |   |      |                       |   |             |  |   |                       |  |
|      | 1 Civil Works                                 | 50.65         |   |      |                       | 50.65                                     | ;           | 100.00%                                    |   |                       |  |
|      | 2 Equipment                                   | 20.67         |   |      |                       | 20.67                                     |             | 100.00%                                    |   |                       |  |
|      | 3 Land Acquisition, Compensation and Resettle | 0.00          |   |      |                       | 0.00                                      | )           |  |   |                       |  |
|      | 4 Environmental Protection                    | 0.74          |   |      |                       | 0.74                                      | ł           | 100.00%                                    |   |                       |  |
|      | 5 Water and Soil Protection                   | 2.36          |   |      |                       | 2.36                                      | 3           | 100.00%                                    |   |                       |  |
|      | 6 Project Management                          | 6.05          |   |      |                       | 6.05                                      | 5           | 100.00%                                    |   |                       |  |
|      | 7 Survey and Design                           | 1.91          |   |      |                       | 1.91                                      | L.          | 100.00%                                    |   |                       |  |
|      | 8 Improving TVET quality and capacity develop | 3.65          | 3.6   | 5    | 100.00%               |   |             |  |   |                       |  |
|      | 9 Promoting TVET innovation and relevance     | 0.77          |   |      |                       |   |             |  | 0.77                                      | 100.00%               |  |
|      | 10 Project implementation management          | 0.58          |   |      |                       | 0.58                                      | 3_          | 100.00%                                    |   |                       |  |
| 1.00 | Sub-total (A)                                 | 87.38         | 3.6   | 5    | 4.17%                 | 82.96                                     | £.,         | 94.94%                                     | 0.77                                      | 0.88%                 |  |
| В.   | Contingencies                                 |               |   |      |                       |   |             |  |   |                       |  |
| 11   | 1. Physical                                   | 6.59          |   |      |                       | 6.59                                      | )           |  |   |                       |  |
|      | 2. Price                                      | 3.50          | 0.1   | 0″   | 0.59%                 | 3.38                                      | 3 *         | 96.64%                                     | 0.02                                      | 0.59%                 |  |
|      | Sub-total (B)                                 | 10.09         | 0.1   | 0"   | 0.20%                 | 9.97                                      | r           | 98.83%                                     | 0.02                                      | 0.20%                 |  |
| С.   | Financing Charges During Implementation       |               |   |      |                       |   |             |  |   |                       |  |
|      | 1. Interest during construction               | 5.92          | 0.2   | 3    | 0.83%                 | 5.64                                      | 1           | 95.23%                                     | 0.05                                      | 0.83%                 |  |
|      | ADB   | 3.20          | 0.2   | 3    | 1.55%                 | 2.92                                      | 2           | 91.16%                                     | 0.05                                      | 1.55%                 |  |
|      | Domestic Bank                                 | 2.72          | 0.0   | 0    | 0.00%                 | 2.72                                      | *           | 100.00%                                    | 0.00                                      | 0.00%                 |  |
|      | 2. ADB Commitment charges                     | 0.15          | 0.0   | 1    | 1.55%                 | 0.14                                      | 1           | 91.16%                                     | 0.002                                     | 1.55%                 |  |
|      | Sub-total (C)                                 | 6.07          | 0.2   | 4    | 0.85%                 | 5.78                                      | 3           | 95.12%                                     | 0.05                                      | 0,85%                 |  |
|      | Total Project Cost (A+B+C)                    | 103.54        | 3.9   | 9    | 0.82%                 | 98.71                                     | ſ           | 95.33%                                     | 0.85                                      | 0.82%                 |  |
|      | % of Total Project Cost                       | 100.00%       | 3.  | .85% | 6                     | 95  | .33         | 3%   | 0.82                                      | %                     |  |

## Table 7: Detailed Cost Estimates by Components (\$ Million)

### Table 8: Allocation and Withdrawal of Loan Proceeds (\$)

|        | CATEGORY  |  | ADB FINANCING BASIS                                       |  |  |  |
|--------|---|--|---|--|--|--|
| Number | Item  | Iotal Amount<br>Allocated for ADB<br>Financing<br>\$ | Percentage and Basis for Withdrawal from the Loan Account |  |  |  |
|        |   | Category   | Nom the Loan Account                                      |  |  |  |
| 1      | Civil Works                                     | 36,648,450   | 72.36% of total expenditure claimed                       |  |  |  |
| 2      | Other Equipment                                 | 5,000,000  | 48.30% of total expenditure claimed                       |  |  |  |
| 3      | Improving TVET quality and capacity development | 3,647,000  | 100.0% of total expenditure claimed                       |  |  |  |
| 4      | Promoting TVET innovation and relevance         | 773,000  | 100.0% of total expenditure claimed                       |  |  |  |
| 5      | Project implementation management               | 580,000  | 100.0% of total expenditure claimed                       |  |  |  |
| 6      | Financial Charges During Implementation         | 3,351,550  | 100.0% of total expenditure claimed                       |  |  |  |
|        | Total   | 50,000,000   | 48.29% of total expenditure claimed                       |  |  |  |



## Supplementary Appendix 2 Procurement Plan

Project Number: 47009 / TA 8448-PRC September 2014

People's Republic of China: Guangxi Baise Vocational Education Development Project

### PROCUREMENT PLAN

Basic Data

 Project Name: Guangxi Baise Vocational Education Development Project

 Project Number:
 Approve Number:

 Country: People's Republic of China
 Executing Agency: Guangxi Baise Government

 Loan Amount: \$50.0 million
 ADB Financing: \$50 million

 Non-ADB Financing:
 Date of First Procurement Plan: (loan approval date)

Date of this Procurement Plan: 30 June 2014

#### A. Process Thresholds, Review and 18-Month Procurement Plan

#### 1. Procurement and Consulting Methods and Thresholds

Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

| Procurement of Goods and Works                    |                                   |  |  |  |  |  |
|---|-----------------------------------|--|--|--|--|--|
| Method  | Threshold                         |  |  |  |  |  |
|   |                                   |  |  |  |  |  |
| International Competitive Bidding (ICB) for Works | \$10 million or more              |  |  |  |  |  |
| International Competitive Bidding for Goods       | \$1 million or more               |  |  |  |  |  |
| National Competitive Bidding (NCB) for Works      | Beneath that stated for ICB Works |  |  |  |  |  |
| National Competitive Bidding for Goods            | Beneath that stated for ICB Goods |  |  |  |  |  |
| Shopping for Works                                | Below \$100,000                   |  |  |  |  |  |
| Shopping for Goods                                | Below \$100,000                   |  |  |  |  |  |

| Consulting Services  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
| Method   | Comments                                       |  |  |  |  |  |  |
| Quality and Cost Based Selection (QCBS)<br>Consultant Quality Based Selection (CQS)<br>Individual Consultant Selection (ICS) | Quality and Cost Ratio = 90:10 /80:20 as noted |  |  |  |  |  |  |

### 2. Goods and Works Contracts Estimated to Cost \$1 Million or More

The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months.

| Package     |  | Estimated         | Procurement         | Review             | Bidding             | Advertisement         |                  |
|-------------|--|-------------------|---------------------|--------------------|---------------------|-----------------------|------------------|
| No          | General Description                        | Value             | Method              | (Prior/Post)       | Procedure           | (Quarter/Year)        | Comments         |
|             | Civil Work                                 |                   |                     |                    |                     |                       |                  |
| C01         | Site Utilities and Site Development        | \$5,127,885       | NCB                 | Post               | 1S1E                | Q1/2015               | Note 1           |
| C02         | Student Dormitory B1, B2 & B3              | \$8,672,499       | NCB (AC&RF)         | Prior              | 1S1E                | Q4/2014               |                  |
|             | Business, Political & Law, Art &           |                   |                     |                    |                     |                       |                  |
| C03         | Education, Administration, Chinese         | \$18,260,154      | ICB                 | Prior              | 1S1E                | Q1/2015               |                  |
|             | & Foreign Language                         |                   |                     |                    |                     |                       |                  |
| C04         | Gym and Sports Facilities                  | \$3,970,614       | NCB                 | Post               | 1S1E                | Q2/2015               |                  |
| C05         | Library, Chemistry \$ Biology,             | ¢17 399 719       | ICB                 | Prior              | 191E                | 03/2015               |                  |
| 005         | Physics Electronic & Math                  | φ17,300,710       | ЮВ                  | FIIO               | ISIL                | Q3/2013               |                  |
| C06         | Slope Protection                           | \$3,577,716       | NCB                 | Post               | 1S1E                | Q1/2015               |                  |
|             | Equipment Supply & Installation            |                   |                     |                    |                     |                       |                  |
| E01         | Photovoltaic Power System                  | \$4,770,968       | ICB                 | Prior              | 1S1E                | Q1/2016               |                  |
| E02         | Heat Pump Systems at Libraey &             | \$2 324 048       | ICB                 | Prior              | 191E                | 01/2016               |                  |
| LUZ         | Administration Building                    | 92,324,040        | ЮВ                  | FIIO               | ISIL                | Q1/2010               |                  |
| E03         | Teaching Equipment                         | \$10,318,565      |                     |                    |                     |                       | Note 2           |
|             |  |                   |                     |                    |                     |                       |                  |
| NCB = Nati  | onal Competitive Bid, ICB = International  | Competitive Bid,  | AC = Advance Co     | ontracting, RF = F | Retroactive Financi | ng, 1S1E = 1 Step 1   | Envelope         |
| Notes:      |  |                   |                     |                    |                     |                       |                  |
|             | 1. Includes site septic tanks, soil erosio | n protection, and | l environmental pro | otection cost.     |                     |                       |                  |
|             | 2. Includes multiple contracts to be proc  | ured following na | ational procuremer  | nt procedures and  | financed by Minis   | try of Education (MOI | E) special fund. |
| (Source: As | sian Development Bank)                     |                   |                     |                    |                     |                       |                  |
#### 3. Consulting Services Contracts Estimated to Cost \$100,000 or More

The following table lists consulting services contracts for which the recruitment activity is either ongoing or expected to commence within the next 18 months.

| Package<br>No.   | General Description                             | Estimated<br>Value | Procurement<br>Method | Review<br>(Prior/Post) | Advertisement<br>(quarter/year) | Type of<br>Proposal | Comments |
|--|---|--------------------|-----------------------|------------------------|---------------------------------|---------------------|----------|
| CS1  | TVET Capacity Development & Workshops           | \$3,420,000        | QCBS                  | Prior                  | Q1/2015                         | Full                | 90:10    |
| CS2  | Implementation Management<br>Support (Output 4) | \$550,000          | QCBS(AC)              | Prior                  | Q2/2015                         | Simple              | 80:20    |
| CS3  | Employment Information System<br>Development    | \$150,000          | CQS                   | Prior                  | Q3/2015                         | Simple              |          |
| QCBS = Quality and Cost Based Selection, CQS = Consultant Quality Selection, AC = Advance Contracting, RF = Retroactive Financing, |   |                    |                       |                        |                                 |                     |          |
| (Source: As  | sian Development Bank)                          |                    |                       |                        |                                 |                     |          |

#### 4. Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

| Goods an   | nd Works                                 |                    |                       |                        |               |                     |          |
|--|--|--------------------|-----------------------|------------------------|---------------|---------------------|----------|
| Package  |  | Estimated          | Procurement           | Review                 | Bidding       | Advertisement       |          |
| No.  | General Description                      | Value              | Method                | (Prior/Post)           | Procedure     | (quarter/year)      | Comments |
| GS1  | Production of TVET Teaching<br>Materials | \$450,000          | NCB                   | Post                   | 1S1E          | Q2/2015             | Note 1   |
| QCBS = Qu  | uality and Cost Based Selection, AD = Ac | Ivance Contracti   | ng, RF = Retroacti    | ve Financing,          |               |                     |          |
| Note 1 - The   | e package may be divided and procured ir | multiple packag    | ges                   |                        |               |                     |          |
| (Source: Asian Development Bank)   |  |                    |                       |                        |               |                     |          |
| Consulting Services  |  |                    |                       |                        |               |                     |          |
| Package<br>No.   | General Description                      | Estimated<br>Value | Procurement<br>Method | Review<br>(Prior/Post) | Advertisement | Type of<br>Proposal | Comments |
| CS4  | Start Up Procurement Support             | \$30,000           | ICS (AC&RF)           | Prior                  | Q4/2014       | ICS                 |          |
| CS5  | Research on Emerging Sectors             | \$100,000          | CQS                   | Prior                  | Q4/2015       | CQS                 |          |
| ICS = Individual Consultant Selection, CQS = Consultant Quality Based Selection, AC = Advance Contracting, RF = Retroactive Financing, |  |                    |                       |                        |               |                     |          |
|  |  |                    |                       |                        |               |                     |          |

(Source: Asian Development Bank)

# 5. Shopping for Goods Contracts Estimated to Cost Less than \$100,000 (Small Value Contracts)

| Goods                            |  |                    |                        |                       |                        |                                 |          |
|----------------------------------|--|--------------------|------------------------|-----------------------|------------------------|---------------------------------|----------|
| Package<br>No.                   | General Description                                  | Estimated<br>Value | Number of<br>Contracts | Procurement<br>Method | Review<br>(Prior/Post) | Advertisement<br>(quarter/year) | Comments |
| GS2                              | School - Industry Partnership and Career Development | \$100,000          | 3                      | Shopping              | Prior                  | Varies                          |          |
| (Source: Asian Development Bank) |  |                    |                        |                       |                        |                                 |          |

## B. Indicative List of Packages Required Under the Project

The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

| Goods an       | d Works   |                                    |                                     |                       |                        |                      |          |
|----------------|---|------------------------------------|-------------------------------------|-----------------------|------------------------|----------------------|----------|
| Package<br>No. | General Description                             | Estimated<br>Value<br>(cumulative) | Estimated<br>Number of<br>Contracts | Procurement<br>Method | Review<br>(prior/post) | Bidding<br>Procedure | Comments |
|                | Works   | \$35,648,871                       | 2                                   | ICB                   | Prior                  | 1S1E                 |          |
|                | Works   | \$8,672,499                        | 1                                   | NCB                   | Prior                  | 1S1E                 |          |
|                | Works   | \$12,676,215                       | 3                                   | NCB                   | Post                   | 1S1E                 |          |
|                | Goods   | \$7,095,016                        | 2                                   | ICB                   | Prior                  | 1S1E                 |          |
|                | Goods   | \$450,000                          | 1                                   | NCB                   | Post                   | 1S1E                 |          |
|                | Shopping  | \$100,000                          | 3                                   | Shopping              | Prior                  |                      |          |
| NCB = Nati     | onal Competitive Bid, ICB = International       | Competitive Bid,                   | AC = Advance C                      | ontracting, RF = F    | Retroactive Financir   | ng                   |          |
| (Source: Ac    | bian Development Bank)                          |                                    |                                     |                       |                        |                      |          |
| Consultin      | ig Services                                     |                                    |                                     |                       |                        |                      |          |
| Package        |   | Estimated<br>Value                 | Estimated<br>Number of              | Procurement           | Review                 | Type of              |          |
| No.            | General Description                             | (cumulative)                       | Contracts                           | Method                | (prior/post)           | Proposal             | Comments |
| CS1            | TVET Capacity Development &<br>Workshops        | \$3,420,000                        | QCBS                                | Prior                 | Q1/2015                | Full                 | 90:10    |
| CS2            | Implementation Management<br>Support (Output 4) | \$550,000                          | QCBS(AC)                            | Prior                 | Q2/2015                | Simple               | 80:20    |
| CS3            | Employment Information System<br>Development    | \$150,000                          | CQS                                 | Prior                 | Q3/2015                | Simple               |          |
| CS4            | Start Up Procurement Support                    | \$30,000                           | ICS (AC&RF)                         | Prior                 | Q4/2014                | ICS                  |          |
| CS5            | Research on Emerging Sectors                    | \$100,000                          | CQS                                 | Prior                 | Q4/2015                | CQS                  |          |
| QCBS = Qu      | uality Cost Based Selection, AC = Advan         | ce Contracting, F                  | RF = Retroactive F                  | inancing              |                        |                      |          |
| (Source: As    | sian Development Bank)                          |                                    |                                     |                       |                        |                      |          |

#### C. List of Awarded and On-going, and Completed Contracts

The following tables list the awarded and on-going contracts, and completed contracts.

1. Awarded and Ongoing Contracts

None

2. Completed Contracts

None

#### D. Non-ADB Financing

The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

| Goods and Works   |                                    |                                     |                       |          |  |
|---|------------------------------------|-------------------------------------|-----------------------|----------|--|
| General Description   | Estimated<br>Value<br>(cumulative) | Estimated<br>Number of<br>Contracts | Procurement<br>Method | Comments |  |
| Teaching Equipment  | \$10,318,565                       | 1                                   | Domestic procedure    |          |  |
|   |                                    |                                     |                       |          |  |
| NCB = National Competitive Bid, ICB = International Competitive Bid |                                    |                                     |                       |          |  |
| (Source: Asian Development Bank)                                    |                                    |                                     |                       |          |  |

# Supplementary Appendix 3

# Initial Environmental Examination

Project Number: 47009 / TA 8448-PRC September 2014

# People's Republic of China: Guangxi Baise Vocational Education Development Project

Prepared by the Baise Municipal Government for the Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 8 July 2014)

Currency Unit – Chinese Yuan (CNY)

CNY1 = \$. 0.1626

\$1 = CNY 6.15

# ABBREVIATIONS

| ADB    | - | Asian Development Bank                                    |
|--------|---|---|
| APEC   | - | Asia-Pacific Economic Cooperation                         |
| ASL    | - | above sea level   |
| BEPB   | - | Baise Municipal environment Protection Bureau             |
| BEMC   | - | Baise environmental monitoring center                     |
| BMG    | - | Baise Municipal Government                                |
| BVS    | - | Baise Vocational School                                   |
| CRB    | - | Baise Municipal Cultural Relic Bureau                     |
| CSC    | - | construction supervision companies                        |
| EHS    | - | environmental, health, and safety                         |
| EIA    | - | environmental impact assessment                           |
| EIS    | - | environmental impact statement report                     |
| EMP    | - | environmental management plan                             |
| EMS    | - | environment management system                             |
| EPB    | - | environmental protection bureau                           |
| EPRS   | - | Integrated emergency preparedness and response system     |
| FSR    | - | feasibility study report                                  |
| GHG    | - | greenhouse gas  |
| GMS    | - | Greater Mekong Subegion                                   |
| GRM    | - | grievance redress mechanism                               |
| GZAR   | - | Guangxi Zhuang Autonomous Region                          |
| IEE    | - | initial environmental examination                         |
| LIS-ES | - | Environment Specialist of the Loan Implementation Support |
| MEP    | - | Ministry of Environmental Protection                      |
| MLT    | - | multilevel TVET   |
| NDRC   | - | National Development and Reform Commission                |
| PAP    | - | project affected persons                                  |
| PCC    | - | public complaint center                                   |
| PIU    | - | project implementing unit                                 |
| PMO    | - | project management office                                 |
| PPTA   | - | project preparatory technical assistance                  |
| PRC    | - | People's Republic of China                                |
| TOR    | - | terms of reference  |
| TVET   | - | technical and vocational education and training           |
| VOC    | - | volatile organic compounds                                |
| WSECP  | - | water and soil erosion control plan                       |
| WWTP   | - | wastewater treatment plant                                |

#### WEIGHTS AND MEASURES

- m<sup>3</sup>/day cubic meter per day
  - mu Chinese unit of area (15 mu = 1 hectare)

#### NOTES

In this report, "\$" refers to US dollars.

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#### I. EXECUTIVE SUMMARY

#### A. Introduction

1. This project initial environmental examination (IEE) report was prepared for the proposed Guangxi Baise Vocational Education Development Project (the Project) in Guangxi Zhuang Autonomous Region (GZAR), People's Republic of China (PRC). The IEE assessed and addressed environmental impacts and risks related to output 2 of the proposed project, which will construct teaching and living buildings and facilities in the new Chengbi campus in Baise, and will procure and install equipment for the new buildings which will house the new teaching and learning equipment. The IEE is prepared in accordance with the requirements of the Asian Development Bank's (ADB) Safeguard Policy Statement (SPS 2009) on the basis of the domestic Environmental Impact Statement Report (EIS), Feasibility Study Report (FSR), the Water & Soil Erosion Control Plan (WSECP), the Project Preparatory Technical Assistance (PPTA)'s social and economic assessments and technical due diligence, and project policy dialogue discussions.

2. GZAR is one of the 12 less-developed provinces and autonomous regions in the western part of the PRC. Baise municipality, located within GZAR, is one of the 14 national poverty areas of the PRC. Six main ethnic minority groups make up 86% of the population of 4 million in Baise municipality, which is the largest prefecture in GZAR. Over the past seven years, Baise has emerged as a new economic growth base in GZAR focused on four priority industries: aluminum processing, agriculture, tourism, and regional trade and logistics. The strategic development of Baise is part of the broader national economic transition to a middle income country and the expansion of service industries. Located near the border with Vietnam, Baise is an important gateway to countries of the Association of Southeast Asian Nations (ASEAN) and Greater Mekong Subregion (GMS).

3. In spite of its strategic location for regional activities, further economic development of Baise is constrained by the lack of a skilled workforce. Baise Municipal Government (BMG) has projected a shortage of more than 80,000 skilled workers in 2013, particularly in new and rapidly expanding priority industries, many of which are employing new technologies. A major issue for Baise is the large number of people who leave the province to obtain more work in other provinces and cities (estimated exit in 2012 of 600,000 people). Baise has trouble attracting skilled labor because of the salary differential and comparatively undeveloped key industries. Taking this into consideration, Baise is left with little choice other than to develop its own local human resources.

4. To address the skills shortage, Baise's Twelfth Five-Year Plan has outlined a key human resources development strategy, centered on creating a multilevel technical and vocational education and training (TVET) system (MLT). The MLT provides an integrated education and training system that links the human resources skill supply from universities, vocational colleges, secondary vocational school (SVS) and also includes short-term migrant courses. The MLT system aims to provide students with multiple pathways for initial training, entry to and progress within the workforce. Baise University, with its current three level programs (SVS, vocational colleges, and universities) is well-positioned to take a leading role in shifting to MLT TVET provision both locally and eventually at provincial and regional levels. This requires a major investment from all stakeholders in terms of reforms and upgrades to the TVET system.

5. Ensuring that graduates are prepared for the workforce with relevant knowledge and

skills is a major challenge for PRC's structural reform of the economy and therefore the Asian Development Bank (ADB) involvement in the TVET sector is strongly justified. The project is aligned with ADB's Strategy 2020, the recommendations from the midterm review of the strategy that emphasized promoting TVET to address the human resource agenda and, the education sector strategic plan. It aligns with ADB's PRC Country Partnership Strategy, 2011–2015. The project is consistent with the PRC's Twelfth Five-Year Plan 2011–2015 which promotes environmentally friendly and resource efficient urban development, rebalancing of economic growth; and prioritizes developing high quality human resources and accelerating education reform.

6. The proposed project will improve the supply of skilled human resources in Baise Municipality to meet the demands from industry and support the transformation of the local economy in its effort to achieve sustainable and inclusive growth. The proposed project will be the fourth ADB-financed TVET investment project in the People's Republic of China (PRC), and will play a demonstration role for the sector and provinces in multilevel TVET.

#### B. Project Impact, Outcome, and Outputs

7. The project's expected impact will be improved access, quality, and responsiveness of TVET in Baise Municipality. The **outcome** will be the development of a multilevel TVET system that links the supply of graduates with relevant knowledge and skills to the demands of industry in Baise Municipality. The indicative project outputs are as follows:

- Output 1: Technical and vocational education and training quality improved (i) and capacity developed. This component will support: (a) an integrated MLT system that provides curriculum integration through a sequence of learning outcomes that link the current SVS, vocational college, and undergraduate levels of TVET; (b) establishment of an employment information system to support students work placements through responsive programs and courses; (c) development of a communication and outreach strategy to promote understanding and support for the MLT system; (d) a competency-based approach (CBA) to curriculum, instruction and assessment that is applied to priority areas; (e) an improved quality assurance (QA) system that is based on industry standards in the delivery of relevant training; (f) upgrading of both pre-service teacher training and in-service professional development; (g) support for the development of leadership through Core Teacher and Management training courses; (h) a comprehensive workshop program for teachers and other stakeholders, focused on key TVET concepts (e.g. MLT system, CBA and QA) and their application to priority areas and instructional delivery; (i) support for domestic/international visits to provide exposure to and participation in TVET best practice examples.
- (i) **Output 2: Chengbi campus constructed and environmental sustainability promoted.** This component will construct teaching and living buildings and facilities in the new Chengbi campus, and will procure and install equipment for the new buildings which will house the new teaching and learning equipment. The component includes the construction of 12 buildings with a total of 160,693 square meter (m<sup>2</sup>) building area.<sup>1</sup> In addition, the component will install a 3.47

<sup>&</sup>lt;sup>1</sup> Including Administration Building, Library, Gymnasium and Physical Education Building, Business School Building, Politics and Law Department Building, Chinese and Foreign Language Department Building, Physics Electronic and Math Building, Chemistry and Biology Department Building, Art and Science Education Building, Dormitories B1, B2 and B3.

megawatt (MW) photovoltaic power system, purchase of teaching and training laboratory equipment for all training laboratories in the new campus, and construct sport facilities, slope protection, and other school facilities.

- Output 3: Technical and vocational education and training innovation and (ii) relevance promoted. This component will support: (a) staff opportunities for active engagement in industry visits, assignments and training attachments; (b) enhanced industry participation in the governance of TVET and the delivery of curriculum and assessment; (c) cooperative activities between Baise University, EB and HRSSB to enhance and integrate migrant worker programs into TVET training; (d) an emphasis on entrepreneurship through curriculum and policy development and the design and implementation of an entrepreneurship incubation program; (e) support for an Enterprise Education Facility to provide opportunities for teachers and students to develop small scale enterprise projects with industry links; (f) training for a small team to coordinate regional cooperation planning and development activities; (g) research support for enhanced information and resources gathering for regional cooperation partnerships and ventures; and (h) research that investigates and provides workable options for enterprise-TVET partnerships, emerging priority sectors and future course and qualifications needs.
- (iii) **Output 4: Project Implementation Management Support.** This output will build capacity for the project management office (PMO) and Baise University in management, monitoring and evaluation. This will also include consultant inputs for the coordination of environmental management plan (EMP) implementation. The component will also provide expert support to Baise University in defining a campus sustainability strategy (by 2015), and the creation of a sustainability center (by 2017). The center will implement green campus management programs (such as energy efficiency, resource conservation, health and safety); facilitate the engagement of faculty, students, and staff and stimulate service and outreach efforts that promote sustainable practices within the university and extended community; and stimulate and facilitate curricular development and research efforts in sustainability-related areas.

#### C. Environmental Due Diligence

8. **Categorization.** The Project underwent initial appraisal during project preparation by ADB and was classified as Category B for environment on the basis of ADB's Rapid Environmental Assessment (REA) checklists, requiring the conduct of an initial environment examination (IEE). The main anticipated environmental impacts and risks upon which the categorization was based included dust, noise, wastewater and solid waste arising from construction of 12 buildings and their auxiliary facilities in Baise University's new Chengbi campus under project output 2. Risks to occupational and community health and safety from construction activities were also considered potentially significant.

9. **Environmental assessment.** The environmental assessment documents upon which this IEE is based have been prepared under the provisions of PRC Environmental Impact Assessment Law of 2003 and the PRC Management Guideline on environmental impact assessment (EIA) Categories of Construction Projects (2008). Domestically, the project was classified as category B for environment, requiring an EIS. The original EIS was approved by Baise Municipal Environmental Protection Bureau (BEPB) in May 2010. Due to adjustments of the project scope and construction measures as a result of policy dialog, technical and

safeguards due diligence, the original EIS was updated by the Environmental Science Research Institute of GZAR (the EIA Institute) based on the newly issued PRC specifications and standards and ADB's Safeguard Policy Statement (2009). Updates to the original EIS include, amongst others, more recent and thus relevant environmental baseline data, clear reference to codes and standards pertaining to public buildings and campuses, and meaningful consultation (see below).

10. **Consultation, participation, and grievance redress mechanism.** In the framework of the IEE and EIS update, public consultation was conducted with key stakeholders and potentially affected people (PAP). Information was disclosed to PAPs through the websites of the GZAR government and BU and through posters within the old Baise University campus. This IEE is disclosed on ADB's website. The public consultation conducted during PPTA indicated that PAPs had a positive attitude toward the Project. A grievance redress mechanism (GRM) has been defined to deal with public complaints related to safeguards during project implementation and operation.

# D. Main Environmental Impacts and Environmental Management Plan

11. **Construction phase.** Major anticipated impacts during construction include noise, fugitive dust, solid wastes, and community and occupational health and safety risks related to the construction of 12 buildings on the new campus (project output 2). Overall, construction-related impacts are localized, short term, and can be effectively mitigated through the application of good construction methods and housekeeping practices and implementation of construction phase community and occupational health and safety plans. Eight potential landslide sites within the campus have been identified in the FSR (Figure V-2). A slope stability assessment was conducted in the FSR, which concludes that risk of landslides at these points was relatively low as long as slope protection works are implemented as defined in the FSR (para. 118).

12. Operation phase. During operation, no major environmental impacts are anticipated. The current environment services of the campus were assessed during the PPTA, and it is concluded that incremental water supply, wastewater and solid waste generation resulting from the project and increased students and faculties will not overburden existing municipal services. The project's potential impacts on community and occupational health and safety during operation were analyzed and corresponding mitigation measures have been defined in the IEE and EMP. The IEE confirmed that the project will have no impact on the water source protection zone for Baise City.<sup>2</sup> Chengbi Lake (the reservoir) is the drinking water source of Baise City. which is located 4.1 kilometer (km) north of the Chengbi Campus. The campus is not located within the water source protection zones (Grade I and II zones). All project activities during construction and operation will be merely confined to the campus boundaries, downstream of the water source protection zones. The sewage pipeline and sewage pumping station that will connect the new campus to the city's sewer network and the central wastewater treatment plant (WWTP) will be completed by September 2014, i.e., prior to commencement of project implementation. Also the associated onsite WWTP with the capacity of 2,000 m<sup>3</sup>/a (about 40% of campus sewage) will be constructed in the campus; the effluence of WWTP will meet the Class 1-A standard, which will be used for landscaping in the campus. It is thus concluded that the proposed project will have no negative impact to the drinking water protection zone.

# 13. Promoting sustainability in campus design and operation. The outstanding

<sup>&</sup>lt;sup>2</sup> This potential issue was identified at project screening stage. See also para 105 for more detailed discussion.

environmental feature of the project is the development of a low-carbon, resource-efficient and environmentally sustainable campus. All buildings will be designed in compliance with green and energy-efficient building codes and specifications.<sup>3</sup> Renewable and high-efficiency energy sources including solar energy (photovoltaic) and heat pumps will be applied to satisfy building energy requirements such as heating, air conditioning, and hot water supplies. A 3.47 MW solar photovoltaic power generation system will be installed in the campus, generating some 3.3-3.5 million kilowatt hour (kWh) of electricity per year. High-efficiency heat pumps will be installed for air-conditioning (heating, cooling) of two buildings, and water heating for the student dormitories B1, B2, and B3. The photovoltaic system will be able to substitute some 15% of the energy demand of the campus, reducing 3,540 tons of CO<sub>2</sub> emissions per year.<sup>4</sup> The two heat pump air conditioning systems will be installed in the library and administration building, which will bring 3.33 million kWh/a electricity saving, equivalent to 3,056 tons of CO<sub>2</sub> emissions. The use of volatile organic compounds (VOC) emitting materials (including paints, coatings, adhesives, carpet and furniture's) will be avoided to ensure safe indoor air quality. The project will also support Baise University in defining a campus sustainability strategy (by 2015), and establishing a sustainability center (by 2017), to be coordinated by Baise University's Comprehensive Affair Department. The sustainability center will build on ongoing sustainability programs and initiatives of Baise University, and aim at ensuring sustainable environmental path for Baise University. The center will aim at greening campus practices, curriculum development, and community awareness, with a strong focus on low-carbon, energy-, and resource-efficient campus management.

14. An **EMP** has been developed for the pre-construction, construction, and operation phases of the project (**Appendix 1**). The EMP will be updated after detailed design (as needed), and incorporated into bidding documents and construction contracts for subproject constructions. The EMP defines mitigation measures, monitoring program, and institutional responsibilities and costs for implementing the mitigation measures and the monitoring requirements. The EMP also includes an inspection checklist (**Appendix 2**) to support the Baise University in supervising contractors during civil works, contractual clauses for civil works contractors (**Appendix 3**).

#### E. Main Environmental Risks and Assurances

15. Environmental risks, and the assurances required to address these risks, have been identified in the IEE. The majority of environmental risks relate to design features and operational plan which will avoid or mitigate impacts, but which rely on the BMG and Baise University's commitment and capacity to implement and consistently follow-up. The major risks are listed below:

- (i) Design of project facilities not complying with relevant design standards and codes related to energy-efficient, safe and green public buildings.
- (ii) Inadequate capacity of Baise University in environment management, which could result in inefficient project and EMP implementation.

16. Commitments by the BMG and the Baise University will be incorporated into the project agreement as covenants to ensure that the risks are mitigated in a timely and complete fashion,

<sup>&</sup>lt;sup>3</sup> Including, but not limited to: GB/T50378-2006 (Evaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50011-2010 (Building Seismic Design Code); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007), and other applicable national design codes.

<sup>&</sup>lt;sup>4</sup> A KWh electricity generated by solar energy is equal to 0.918 kg of CO<sub>2</sub> emission reduction (grid emission factor).

including: (i) a commitment to adhere to relevant design standards and codes for energy-efficient, safe and green public buildings; (ii) a commitment to adhere to the PRC green public procurement policies;<sup>5</sup> and (iii) a commitment to promote environmental sustainability through the definition of a sustainability strategy, and the creation of a sustainability center within Baise University.

17. The overriding assurance required is that BMG and Baise University, as appropriate, will ensure that the full range of effective measures set out in the IEE and EMP are undertaken, and guarantee that the environmental management provisions and the environmental monitoring plan will be implemented effectively during project implementation, and that the reports on the environmental management and monitoring plan in accordance with ADB requirements will be submitted and disclosed in a timely fashion. Part of this monitoring and management commitment will be a commitment to implement and maintain safeguards GRM.

#### F. Conclusion

18. The IEE concludes that as long as the environmental mitigation and management measures defined in the EMP are properly implemented, all adverse environmental impacts associated with the project will be prevented, eliminated, or minimized to an acceptable level. The project is feasible from an environment safeguards point of view.

<sup>&</sup>lt;sup>5</sup> As defined in (i) Public Procurement List of Environmental Labeling Products (issued and regularly updated by NDRC and MOF) which includes 21 categories of products, such as light vehicle, photocopier, computer, water-based paint, furniture, etc; and (ii) Public Procurement List of Energy Saving Products (issued and regularly updated by MEP and MOF), which includes 27 categories of energy saving products, such as air conditioner, refrigerator, lighting product, television set, electric water heater, computer, printer, monitor, etc. and 7 categories of water saving products, such as toilet, faucet, shower etc.

#### II. POLICY, LEGAL, AND ADMINISTRATION FRAMEWORK

#### A. People's Republic of China Legislative Framework

19. The domestic EIS upon which this IEE is based has been prepared and updated under the provisions of the PRC's EIA Law of 2003 and the PRC Management Guideline on EIA Categories of Construction Projects (2008). Main laws, regulation, guidelines and standards applicable to this project are described below. The primary PRC laws that govern environmental safeguards of the project are provided in **Table II-1**.

| No. | Title of the Law                                 | Year Issued |
|-----|--|-------------|
| 1   | Environmental Protection Law                     | 1989        |
| 2   | Environmental Impact Assessment Law              | 2003        |
| 3   | Water Law  | 2002        |
| 4   | Water Pollution Prevention and Control Law       | 2008        |
| 5   | Air Pollution Prevention and Control Law         | 2000        |
| 6   | Noise Pollution Control Law                      | 1999        |
| 7   | Solid Waste Pollution Prevention and Control Law | 2005        |
| 8   | Water and Soil Conservation Law                  | 1991        |
| 9   | Forest Law                                       | 1998        |
| 10  | Wild Fauna Protection Law                        | 2004        |
| 11  | Cleaner Production Promotion Law                 | 2002        |
| 12  | Urban and Rural Planning Law                     | 2008        |
| 13  | Land Administration Law                          | 1999        |

#### Table II-1: Applicable Environmental Laws of the PRC

Source: Project preparatory technical assistance consultant.

20. The implementation of environmental laws and regulations is supported by a series of associated management and technical guidelines (**Table II-2**).

| Guideline  | Year/Code  |
|--|--|
| Guideline on Jurisdictional Division of Review and Approval of EIAs for<br>Construction Projects | 2009   |
| Guideline on EIA Categories of Construction Projects   | 2008   |
| Interim Guideline on Public Consultation for EIA   | 2006   |
| Technical Guideline on EIA Regarding Surface Water   | HJ/T 2.3-1993  |
| Technical Guideline on EIA Regarding Atmospheric Environment                                     | HJ 2.2-2008  |
| Technical Guideline on EIA Regarding Acoustic Environment  | HJ 2.4-2009  |
| Technical Guideline on EIA Regarding Ecological Impact   | HJ 19-2011   |
| Technical Guideline on Environmental Risk Assessment for Construction Project                    | HJ/T 169-2004  |
|  | GuidelineGuideline on Jurisdictional Division of Review and Approval of EIAs for<br>Construction ProjectsGuideline on EIA Categories of Construction ProjectsInterim Guideline on Public Consultation for EIATechnical Guideline on EIA Regarding Surface WaterTechnical Guideline on EIA Regarding Atmospheric EnvironmentTechnical Guideline on EIA Regarding Acoustic EnvironmentTechnical Guideline on EIA Regarding Ecological ImpactTechnical Guideline on EIA Regarding Ecological Impact |

## Table II-2: Applicable Environmental Guidelines

Source: Project preparatory technical assistance consultant.

21. The environmental quality standard system that supports and evaluates the implementation of the environmental protection laws and regulations in the PRC is classified into two categories by function (i.e., pollutant emission/discharge standards and ambient environmental standards). The relevant main standards applicable to the project are shown in **Table II-3.** During the construction and operation, the local Environmental Noise Pollution Control Ordinance (revised in 2008) is applicable.

| No.  | Standard  | Code                      |
|------|---|---------------------------|
| 1    | Surface Water Quality Standard  | GB 3838-2002              |
| 2    | Urban Ambient Acoustic Quality Standard   | GB 3096-2008              |
| 3    | Ambient Air Quality Standard  | GB 3095-1996 <sup>6</sup> |
| 4    | Integrated Emission Standard of Air Pollutants  | GB 16297-1996             |
| 5    | Integrated Wastewater Discharge Standard  | GB 8978-1996              |
| 6    | Underground Water Quality Standard  | GB/T 14848-93             |
| 7    | Domestic Drinking Water Quality Standard  | GB 5749-2006              |
| 8    | Emission Standards of Environment Noise for Boundary of Site Noise                            | GB 12523-2011             |
| 9    | Noise Limit of Industrial Enterprises   | GB 12348-2008             |
| 10   | Standard for pollution control on hazardous waste storage                                     | GB 18597-2001             |
| 11   | Standards for pollution control on the storage and disposal site for general industrial solid | GB18599-2001              |
|      | wastes  |                           |
| 12   | Building Seismic Design Code  | GB 50011-2011             |
| 13   | Energy Conservation Design for Public Buildings   | GB 50189-2005             |
| 14   | Code of Design on Building Fire Protection and Prevention                                     | GB 50016-2006             |
| 15   | Evaluation Standard for Green Buildings   | GB/T50378-2006            |
| 16   | Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region          | (DB45/221-2007)           |
| Sour | ce: Feasibility study report, June 2014.  |                           |

22. In addition to national laws and regulations that are commonly followed for civil works (and usually not covered in environment impact assessments), a series of design standards and guidelines related to building safety and resource efficiency apply to this project. These are listed in Table II-4.

# Table II-4: Key Design Codes and Technical Standards Applicable to the Project<br/>(Civil Works)

| Design Code, Technical Standard                                    |                   |
|--|-------------------|
| Code of Design for the Geotechnical Survey                         | GB50021-2009      |
| Code of Design for the Building Foundation                         | GB50007-2011      |
| Code of Design for the Energy Conservation of Public Buildings     | GB 50189-2005     |
| Code of Design for the Engineering Structural Reliability          | GB50153-2008      |
| Code of Design for the Structural Load Calculation                 | GB50009-2012      |
| Code of Design for the Concrete Structures                         | GB50010-2011      |
| Code of Design for Building Seismic Resistance                     | GB50011-2011      |
| Code of Design for Masonry Structures                              | GB50003-2011      |
| Standards for Acceptance Test of Building Construction Quality     | GB50300-2001      |
| Technical Standards for Waterproofing of Underground Structures    | GB50108-2008      |
| Code of Electrical design of civil buildings                       | JGJ16-2008        |
| Design code for protection of structures against lightning         | GB50057-2010      |
| Code for design electric power supply system                       | GB50052-2009      |
| Code for design of low voltage electrical installations            | GB50054-2011      |
| Design Standard of Building Lighting                               | GB50034-2004      |
| Code for Fire Protection Design of Civil Building Cables           | DG/TJ08-2048-2008 |
| Code for Engineering Design of Generic Cabling System for Building | GB50311-2007      |
| Code for Design of Automatic Fire Alarm System                     | GB50116-2013      |

<sup>&</sup>lt;sup>6</sup> A new standard has been issued in 2012 (GB 3095-2012), which will become effective on 1 Jan 2016.

| Design Code, Technical Standard                                   |              |
|---|--------------|
| Code of Design on Building Fire Protection and Prevention         | GB50016-2006 |
| Code of Design for Sprinkler Systems                              | GB50084-2005 |
| Code for Design of extinguisher Distribution in Buildings         | GB50140-2005 |
| Code for Design of Outdoor Water Supply Engineering               | GB50013-2006 |
| Code for Design of Outdoor Drainage Engineering                   | GB50014-2011 |
| Code for Design of Building Water supply and Drainage Engineering | GB50015-2009 |
| Code for Design of Heating Ventilation and Air Conditioning       | GB50019-2003 |
| Technical Guideline of Heating Load Calculation                   | JGJ 173-2009 |
| Code of Design on Building Fire Protection and Prevention         | GB50016-2006 |
| Source: Esseibility study report June 2014                        |              |

Source: Feasibility study report, June 2014.

#### B. International Agreements

23. The PRC is a signatory of a large number of international agreements relevant to environment protection. Those with direct application to the project, along with the date of signing by the PRC, include:

- (i) Kyoto Protocol to the United Nations Framework Convention on Climate Change, 23 February 2005. To further reduce greenhouse gas emissions by enhancing the national programs of developed countries aimed at this goal and by establishing percentage reduction targets for the developed countries.
- (ii) *Montreal Protocol on Substances That Deplete the Ozone Layer,* 1 January 1989. To protect the ozone layer by controlling emissions of substances that depletes it.
- (iii) United Nations Framework Convention on Climate Change, 21 March 1994. To achieve stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent dangerous anthropogenic interference with the climate system.
- (iv) UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1985. To integrate the practice of heritage conservation in PRC with that being done around the world.

#### C. Relevant Development Plans

24. The basis of the project design includes the national and regional developments plans, and relevant sectors development plans, namely:

- (i) PRC's National Medium and Long-term Education Reform and Development Plan (2010–2020).
- (ii) PRC's National Long Term Human Resource Development Strategy Outline (2010-2020).
- (iii) BMG's Action Plan for Developing TVET Education in Baise (August 2009).
- (iv) GZAR's Five-year Plan for Development of TVET Education (February 2012).

# D. People's Republic of China and Asian Development Bank's Assessment Categories

25. **People's Republic of China's classification.** The project was classified as Category B under PRC classification. Guangxi Transport Design Institute prepared the original EIS for the project in March 2010, which was approved by Baise Municipal environment Protection Bureau (BEPB) on 12 May 2010.<sup>7</sup> Due to changes to the original project scope as defined in the FSR of 2010, the GZAR Environmental Science Research Institute, an EIA institute with national grade

<sup>&</sup>lt;sup>7</sup> The approval document number was Baise-En-2010-65.

A certificate, has updated the EIS in June 2014 to reflect updated project scope and current environmental baseline. The updated EIS was sent to BEPB for record and review. An "EIS alteration approval document" for the updated EIS was issued in June 2014.

26. **Asian development bank's classification.** The project underwent initial appraisal during project preparation and was classified as Category B on the basis of ADB's Rapid Environmental Assessment, requiring an Initial Environmental Examination (IEE). In compliance with ADB's Safeguard Policy Statement<sup>8</sup> an IEE was prepared on the basis of (i) the updated FSR for the New Chengbi Campus, (ii) the updated domestic EIS, (iii) the Water and Soil Erosion Control Plan (WSECP), and (iii) other documents including the PPTA interim and draft final reports.

#### E. Scope of Assessment and Evaluation Standards for Subprojects

27. The domestic EIS has defined the assessment scope for ambient air, surface water, noise and ecological resources as shown in **Table II-5** below. In PRC EIA requirements, ambient levels of air, noise, and water quality in the proposed works area determine the appropriate category for point source or impacting emissions and effluent standards for the construction and operational phases of built infrastructure. The scope of investigation is the project buildings and areas 200–500 meters (m) surrounding the buildings.

| No. | Item          | Assessment scope  |
|-----|---------------|---|
| 1   | Surface water | 500 m upstream and 5,000 m downstream of Chengbi River from the campus, and the |
|     |               | artificial pond and stream within the campus                                    |
| 2   | Ambient air   | 500 m range from boundaries of the campus                                       |
| 3   | Noise         | 200 m range from boundaries of the campus                                       |
| 4   | Ecology       | 300 m range from boundaries of the campus                                       |

#### Table II-5: Assessment Scope

Source: Domestic EIS.

28. In the PRC's EIA requirements, ambient conditions of air, noise and water quality in the project area determine the appropriate category of emissions and effluent standards for the construction and operational phases of built infrastructure. However, ADB's SPS requires projects to apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety (EHS) Guidelines.<sup>9</sup> The EHS guidelines are based on best practice construction and operational procedures. Both the PRC standards and EHS guidelines are used in the impact assessment for this project.

29. **Ambient air quality standards.** Assessment of ambient air quality was in accordance with "Ambient Air Quality Standard" (GB3095-1996) and GB3039-2012. A new standard has been issued in 2012 (GB 3095-2012), replacing GB 3095-1996, and will become effective on January 2016. The new standard combines Class II and III and introduces  $PM_{2.5}$  standards. It also makes more stringent NO<sub>2</sub> standards. The World Bank EHS guidelines (see below) are based on best international practice. Both the PRC standards and EHS guidelines are used in ambient air assessment of this project, of which the specific standard values are shown in **Table II-5 below**.

<sup>&</sup>lt;sup>8</sup> ADB. 2009. *Safeguard Policy Statement*. Manila.

<sup>&</sup>lt;sup>9</sup> World Bank Group 2007, *Environmental, Health and Safety Guidelines General EHS Guidelines*, World Bank, Washington.

| Pollutant         | Time              | GB 3096-1996 (Grade<br>II) | GB3095-2012 (Grade II) | EHS <sup>10</sup>           |
|-------------------|-------------------|----------------------------|------------------------|-----------------------------|
| SO <sub>2</sub>   | Annual average    | 0.06                       | 0.06                   | n/a                         |
|                   | Daily average     | 0.15                       | 0.15                   | 0.125-0.05 (0.02 guideline) |
|                   | Unit hour average | 0.50                       | 0.50                   | n/a                         |
| PM <sub>10</sub>  | Annual average    | 0.10                       | 0.07                   | 0.07-0.03 (0.02 guideline)  |
|                   | Daily average     | 0.15                       | 0.15                   | 0.075-0.15 (0.05 guideline) |
| NO <sub>2</sub>   | Annual average    | 0.08                       | 0.04                   | 0.04 guideline              |
|                   | Daily average     | 0.12                       | 0.08                   | 0.10 guideline              |
|                   | Unit hour average | 0.24                       | 0.20                   | 0.20 guideline              |
| СО                | Daily average     | 4.0                        | 4.0                    | n/a                         |
|                   | Unit hour average | 10.0                       | 10.0                   | n/a                         |
| PM <sub>2.5</sub> | Annual average    | n/a                        | n/a                    | 0.015-0.035                 |
|                   | Daily average     | n/a                        | 0.15                   | 0.0375-0.075                |
|                   | Hourly average    | n/a                        | 0.35                   | n/a                         |

Table II-6: Ambient Air Quality Grade II Standard (mg/m<sup>3</sup>)

Source: Domestic EIS, the World Bank's EHS Guideline.

30. **Acoustic environment.** According to the Technical Specifications for Urban Area Ambient Noise Applicable Area Classification (GBT 15190-94), areas serving for cultural and educational institutions are classified as Class 1, and should comply with the corresponding provisions in Acoustic Ambient Quality Standard (GB3096-2008) according to the classification of the area. Residential, commercial and industrial mixed areas must comply with Class 2 standard. Lower standards apply for industrial areas and major roads. Standards are listed in Table II-6. The PRC standard is identical to the EHS guideline values.

| Table II-7: Acoustic Ambient Qualit | y Standards (Equivalent | Sound Level: LAeq: dB) |
|-------------------------------------|-------------------------|------------------------|
|-------------------------------------|-------------------------|------------------------|

| PRC               |  | GB309 | 96-2008 | EHS |       |
|-------------------|--|-------|---------|-----|-------|
| Standard<br>Class | Applicable Area  | Day   | Night   | Day | Night |
| 0                 | Areas needing extreme quiet, such as convalescence areas         | 50    | 40      | 55  | 45    |
| 1                 | Area mainly for residence, cultural and educational institutions | 55    | 45      |     |       |
| 2                 | Residential, commercial and industrial mixed area                | 60    | 50      |     |       |
| 3                 | Industrial area  | 65    | 55      | 70  | 70    |
| 4                 | Area on both sides of urban road traffic trunk line              | 70    | 55      |     |       |

Source: GB3096-2008, World Bank's EHS Guidelines.

31. **Noise limits for construction sites.** Construction activities must be in accordance with "Noise Limits for Construction Site" standard (GB12523-90), see **Table II-7**.

#### Table II-8: Noise Limits for Construction Sites Standard (dB (A))

Noise limits

<sup>&</sup>lt;sup>10</sup> World Bank Group 2007.

| Daytime | Night |
|---------|-------|
| 70      | 55    |

32. **Surface water quality standards.** Assessment of surface water quality focused mainly on the artificial pond and stream in the campus, which must comply with Grade IV standard values of "Surface Water Environment Quality Standard" (GB3838-2002); for the Chengbi River nearby the campus, Grade II standard is applicable, which is shown in **Table II-8**.

Table II-9: Surface Water Quality Standards (mg/L, pH excluded)

| Parameter         | рН  | <b>COD</b> <sub>Mn</sub> | BOD <sub>5</sub> | COD <sub>cr</sub> | TP   | TN   | NH <sub>3</sub> -N | Petroleum |
|-------------------|-----|--------------------------|------------------|-------------------|------|------|--------------------|-----------|
| Grade II Standard | 6~9 | ≤4                       | ≤3               | ≤15               | ≤0.1 | ≤0.5 | ≤0.5               | ≤0.05     |
| Grade IV Standard | 6~9 | ≤10                      | ≤6               | ≤30               | ≤0.3 | ≤1.5 | ≤1.5               | ≤0.5      |

Key: BOD<sub>5</sub>= 5 days biochemical oxygen demand,  $COD_{cr}$  = chemical oxygen demand,  $COD_{Mn}$  = permanganate index, NH<sub>3</sub>-N=ammonia nitrogen; TN = total nitrogen; TP = Total Phosphorus

33. Because the proposed campus is not within or nearby any special ecologically sensitive zones, the assessment of ecological environment belongs to Class III according to the Environmental Impact Assessment Technical Guidelines (HJ19-2011). Considering the characteristics of the project, the project will not cause groundwater level changes nor cause groundwater pollution. No assessment for groundwater is therefore required.

### III. DESCRIPTION OF THE PROJECT

#### A. Justification and Rationale for the Project

34. Guangxi Zhuang Autonomous Region (GZAR) is one of the 12 less-developed provinces and autonomous regions in the western part of the People's Republic of China (PRC). Baise municipality, located within GZAR, is one of the 14 national poverty areas of the PRC. Six main ethnic minority groups make up 86% of the population of 4 million in Baise municipality, which is the largest prefecture in GZAR. Over the past seven years, Baise has emerged as a new economic growth base in GZAR focused on four priority industries: aluminum processing, agriculture, tourism, and regional trade and logistics. The strategic development of Baise is part of the broader national economic transition to a middle income country and the expansion of service industries. Located near the border with Vietnam, Baise is an important gateway to countries of the Association of Southeast Asian Nations (ASEAN) and Greater Mekong Subregion (GMS).

35. In spite of its strategic location for regional activities, further economic development of Baise is constrained by the lack of a skilled workforce. Baise Municipal Government (BMG) has projected a shortage of more than 80,000 skilled workers in 2013, particularly in new and rapidly expanding priority industries, many of which are employing new technologies. A major issue for Baise is the large number of people who leave the province to obtain more work in other provinces and cities (estimated exit in 2012 of 600 000 people). Baise has trouble attracting skilled labor because of the salary differential and comparatively undeveloped key industries. Taking this into consideration, Baise is left with little choice other than to develop its own local human resources.

36. To address the skills shortage, Baise's Twelfth Five-Year Plan has outlined a key human resources development strategy, centered on creating a multilevel TVET system (MLT). The MLT provides an integrated education and training system that links the human resources skill supply from universities, vocational colleges, secondary vocational school (SVS) and also includes short-term migrant courses. The MLT system aims to provide students with multiple pathways for initial training, entry to and progress within the workforce. Baise University, with its current three level programs (SVS, vocational college, and universities) is well-positioned to take a leading role in shifting to MLT TVET provision both locally and eventually at provincial and regional levels. This requires a major investment from all stakeholders in terms of reforms and upgrades to the TVET system.

37. Ensuring that graduates are prepared for the workforce with relevant knowledge and skills is a major challenge for PRC's structural reform of the economy and therefore the Asian Development Bank (ADB) involvement in the TVET sector is strongly justified. The project is aligned with ADB's Strategy 2020, the recommendations from the midterm review of the strategy that emphasized promoting TVET to address the human resource agenda and, the education sector strategic plan. It aligns with ADB's PRC Country Partnership Strategy, 2011–2015. The project is consistent with the PRC's Twelfth Five Year Plan 2011-2015 which promotes environmentally friendly and resource efficient urban development, rebalancing of economic growth; and prioritizes developing high quality human resources and accelerating education reform.

#### B. Innovative Features of the Project

- 38. The project has the following demonstration features:
  - (i) **Multilevel TVET and applied TVET university development.** The project will be at the forefront of piloting two important new reforms in the TVET sector in PRC: (a) Baise University is one of nineteen institutions selected in GZAR to the transition from a university to a TVET applicable institution; and (b) introducing multilevel TVET

development which links curriculum, teachers, learning and opportunity pathways and assessment across levels.

- (ii) Regional cooperation. The project will support development of regional cooperation in TVET in Baise by (a) training a leadership team to support regional cooperation planning and activities; (b) expanding cooperation in areas such the cross-border language programs and priority majors; (c) introducing APEC standards in related areas; and (d) undertaking research on the impacts of regional cooperation and industry expansion on human resources and skills needs in Baise.
- (iii) Promote environment sustainability. The outstanding environmental feature of the project is the development of a low-carbon, resource-efficient and environmentally sustainable campus. All buildings will be designed in compliance with green and energy-efficient building codes and specifications.<sup>11</sup> Renewable and high-efficiency energy sources including solar energy (photovoltaic) and heat pumps will be applied to satisfy building energy requirements such as heating, air conditioning, and hot water supplies. A 3.47 MW solar photovoltaic power generation system will be installed in the campus, generating some 3.3-3.5 million kWh of electricity per year. High-efficiency heat pumps will be installed for air-conditioning (heating, cooling) of two buildings, and water heating for the student dormitories B1, B2 and B3. The photovoltaic system will be able to substitute some 15% of the electricity demand of the campus, reducing 3,540 tons of CO<sub>2</sub> emissions per year.<sup>12</sup> The two heat pump air conditioning systems will be installed on the library and administration building, which will bring 3.3 million kWh/a electricity saving, equivalent to 3,056 tons of  $CO_2$  emissions. The use of volatile organic compounds (VOC) emitting materials (including paints, coatings, adhesives, carpet and furniture's) will be avoided to ensure safe indoor air quality. The project will also support Baise University in defining a campus sustainability strategy (by 2015), and establishing a sustainability center (by 2017), to be coordinated by BU's Comprehensive Affair Department. The sustainability center will build on ongoing programs and initiatives of Baise University in the field, and aim at ensuring sustainable environmental path for Baise University. The Center will implement current and future campus sustainability programs (such as energy efficiency, resource conservation, 3R, environmental awareness, health and safety, etc.); facilitate the engagement of faculty, students, and staff and stimulate service and outreach efforts that promote sustainable practices within the university and extended community; and stimulate and facilitate curriculum development and research efforts in environment sustainability-related areas.

## C. Project Impact, Outcome, and Outputs

39. The project's expected **impact** will be improved access, quality, and responsiveness of TVET in Baise Municipality. The **outcome** will be the development of a multilevel TVET system that links the supply of graduates with relevant knowledge and skills to the demands of industry in Baise Municipality. The scopes of works for each of the four project outputs are defined in Table III-1, and are summarized below.

40. **Output 1: Technical and vocational education and training quality improved and capacity developed.** This component will support: (i) an integrated MLT system that provides curriculum

<sup>&</sup>lt;sup>11</sup> Including, but not limited to: GB/T50378-2006 (Evaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50011-2010 (Building Seismic Design Code); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007), and other applicable national design codes.

<sup>&</sup>lt;sup>12</sup> A KWh electricity generated by solar energy is equal to 0.918 kg of  $CO_2$  emission reduction (grid emission factor).

integration through a sequence of learning outcomes that link the current SVS, universities, and undergraduate levels of TVET; (ii) establishment of an employment information system to support students work placements through responsive programs and courses; (iii) development of a communication and outreach strategy to promote understanding and support for the MLT system; (iv) a competency-based approach (CBA) to curriculum, instruction and assessment that is applied to priority areas; (v) an improved quality assurance (QA) system that is based on industry standards in the delivery of relevant training; (vi) upgrading of both pre-service teacher training and in-service professional development; (vii) support for the development of leadership through Core Teacher and Management training courses; (viii) a comprehensive workshop program for teachers and other stakeholders, focused on key TVET concepts (e.g. MLT system, CBA, and QA) and their application to priority areas and instructional delivery; and (ix) support for domestic/international visits to provide exposure to and participation in TVET best practice examples.

41. **Output 2: Chengbi campus constructed and environmental sustainability promoted.** This component will construct teaching and living buildings and facilities in the new Chengbi campus, and will procure and install equipment for the new buildings which will house the new teaching and learning equipment. The component includes the construction of 12 buildings with a total of 160,693 m<sup>2</sup> building area.<sup>13</sup> In addition, the component will install a 3.47 MW photovoltaic power system, purchase of teaching and training laboratory equipment for all training laboratories in the new campus, and construct sport facilities, slope protection, and other school facilities.

42. **Output 3: Technical and vocational education and training Innovation and Relevance promoted.** This component will support: (i) staff opportunities for active engagement in industry visits, assignments and training attachments; (ii) enhanced industry participation in the governance of TVET and the delivery of curriculum and assessment; (iii) cooperative activities between Baise University, Education Bureau, and HRSSB to enhance and integrate migrant worker programs into TVET training; (iv) an emphasis on entrepreneurship through curriculum and policy development and the design and implementation of an entrepreneurship incubation program; (v) support for an Enterprise Education Facility to provide opportunities for teachers and students to develop small scale enterprise projects with industry links; (vi) training for a small team to coordinate regional cooperation planning and development activities; (vii) research support for enhanced information and resources gathering for regional cooperation partnerships and ventures; and (viii) research that investigates and provides workable options for enterprise-TVET partnerships, emerging priority sectors and future course and qualifications needs.

43. **Output 4: Project implementation management support.** This output will build capacity for the project management office (PMO) and Baise University in management, monitoring and evaluation. This will also include consultant inputs for the coordination of EMP implementation. The component will also provide expert support to Baise University in defining a campus sustainability strategy (by 2015), and the creation of a sustainability center (by 2017). The center will implement green campus management programs (such as energy efficiency, resource conservation, health and safety); facilitate the engagement of faculty, students, and staff and stimulate service and outreach efforts that promote sustainable practices within the university and extended community; and stimulate and facilitate curricular development and research efforts in sustainability-related areas.

<sup>&</sup>lt;sup>13</sup> Including Administration Building, Library, Gymnasium and Physical Education Building, Business School Building, Politics and Law Department Building, Chinese and Foreign Language Department Building, Physics Electronic and Math Building, Chemistry and Biology Department Building, Art and Science Education Building, Dormitories B1, B2, and B3.

| Output/Component                             |                | Description   |
|--|----------------|---|
| Output 1: TVET quality improve               | ed and ca      | apacity developed   |
| 1.1 Multilevel TVET Strategic<br>Development | 1.1.1          | MLT system leading group undertakes research and planning in collaboration with industry and other stakeholders;  |
|  | 1.1.2          | MLT architecture established: Level descriptions, institutional linkages, and pathways developed;   |
|  | 1.1.3          | Training provided (for all stakeholders) in MLT system to support the development of a TVET applicable university;  |
|  | 1.1.4          | Establishment of a management committee to coordinate enhancement of multilevel system data management;   |
|  | 1.1.5          | Develop a Communications and outreach plan  |
| 1.2 Curriculum Development                   | 1.2.1          | Develop competency standards (in 7 priority areas across different institutional and qualifications levels) initially in preschool education: design: aluminum processing: engineering management: and agriculture; and later in tourism and logistics;       |
|  | 1.2.2          | Develop competency based approach to curriculum, instruction and assessment<br>(in 7 priority areas and across designated levels, majors and courses);<br>Pilot SVS, universities, and undergraduate priority sectors, majors and courses (as                 |
|  | 101            | agreed) with linkages (pathways) established;   |
|  | 1.2.4          | (CBA) for all teaching staff (curriculum, assessment and instruction);  |
|  | 1.2.5          | Develop curriculum in enterprise education (Entrepreneurship) and Employability<br>skills:  |
|  | 1.2.6          | Review and enhance Quality Assurance system in curriculum, assessment and   |
|  | 1.2.7          | Develop teaching and learning resources (publication, web-based) to support priority majors and courses   |
| 1.3 Teacher Training and<br>Pedagogy Reform  | 1.3.1<br>1.3.2 | Develop BU policy and guidelines for staff movement between institutional levels;<br>Develop guidelines and standards to reform pedagogy in line with CBA (i.e.<br>student-centered and activities-based instruction and assessment);                         |
|  | 1.3.3          | Develop policy, plans and procedures for the establishment of a secondary TVET<br>Teacher Training Centre (Note: to be expanded later as a regional cooperation<br>activity);   |
|  | 1.3.4          | Creation of a core teacher training system (using a train the trainer approach) to<br>support training for pilot lessons in selected priority areas:  |
|  | 1.3.5          | Assess staff incentive structures for staff engaged in the project (e.g. staff hours for attending training)  |
| 1.4 Staff Development                        | 1.4.1          | Revise and upgrade staff training plans to include training in the Baise University   |
|  | 1.4.2          | Develop strategy to upgrade staff to attain dual qualifications at all levels (SVS, universities, undergraduate):   |
|  | 1.4.3          | Devise and develop leadership training program for BU senior and intermediate level leaders and other stakeholders (MLT system, management and leadership) (Overseas program):  |
|  | 1.4.4<br>1.4.5 | Develop overseas training for Core Teachers (train-the-trainer);<br>Develop domestic study tours for observation and investigation based on specific<br>project reforms (MLT, industry partnerships, regional cooperation, curriculum and<br>teaching, etc.); |
|  | 1.4.6          | Organize and facilitate training in PRC TVET institutions where there is good<br>practice related to priority areas   |
| Output 2: Chengbi campus con                 | structed       | l and environmental sustainability promoted   |

# Table III-1: Summary of Proposed Project Outputs and Sub-components

| 2.1 Construction of buildings and facilities in Chengbi Campus | 2.1.1<br>2.1.2<br>2.1.3<br>2.1.4<br>2.1.5<br>2.1.6<br>2.1.7<br>2.1.8<br>2.1.9<br>2.1.10<br>2.1.11<br>2.1.12<br>2.1.13<br>2.1.14 | Library<br>Administration building<br>Gymnasium and physical education building<br>Business school building<br>Politics and law department building<br>Chinese and foreign language department building<br>Physics, electronics and math building<br>Chemistry and biology department building<br>Art and science education building<br>Student dormitory (B1, B2&B3)<br>Outdoor sports facilities<br>Slope protection and retaining walls<br>3.47 MW Photovoltaic power system<br>Teaching and training equipment (financed by MOE designated fund) |
|--|---|--|
| Output 3: TVET innovation and                                  | relevanc  | e promoted   |
| 3.1 School-industry partnerships                               | <ul><li>3.1.1</li><li>3.1.2</li><li>3.1.3</li><li>3.1.4</li><li>3.1.5</li></ul>   | Organize, for staff, industry visits, job assignments and training attachments which<br>include specific performance requirements and outcomes;<br>Enterprise Education Facility established to enhance school industry partnerships<br>and innovation in other project areas;<br>Establish School Industry Leading groups<br>Design and implement further outreach training programs for migrant workers and<br>communities<br>Design and implement an entrepreneurship incubation program  |
| 3.2 Regional Cooperation                                       | 3.2.1<br>3.2.2<br>3.2.3<br>3.2.4<br>3.2.5   | Develop and train Baise University management team to support regional<br>cooperation planning and activities<br>Attend regional forums and related activities to support policy and partnership<br>development in regional cooperation;<br>Explore opportunities for consolidation of cross-border language education<br>programs;<br>Explore expanded cooperation opportunities with University of Thailand;<br>Introduce APEC standards in related majors to enhance regional cooperation<br>opportunities  |
| 3.3 Research   | 3.3.1<br>3.3.2  | Develop school-industry partnerships regulation and policy development at different levels of provincial, BMG, and Baise University Undertake research into sector plans in emerging priority sectors (logistics, tourism, etc.) to link market demand with the supply and development of human resources. Apply research findings to MLT system for course and qualifications development   |
| Output 4. Project implementation                               | on manag  | gement   |
| 4.1 Project implementation<br>management support               | 4.1.1<br>4.1.2  | Loan implementation technical assistance and training<br>Project monitoring and evaluation   |

Source: Project Administration Manual, June 2014.

## D. Detailed Description of Activities under Output 2

44. The new Chengbi campus has a total area of 99.9 ha and the dimensions are about 1,210 m in north-south direction and 1,470 m in east-west direction. According to the campus master plan, there will be a total of 24 buildings and facilities for teaching, experiment and training, living and supporting structures. The campus plan is shown in **Figure III-1**. The new campus is being built in a mountain valley with all buildings and facilities constructed next to or on the hillsides or excavated areas along both sides of the valley. The central axle of the campus, which is along the original centerline of the valley, will be

developed with a manmade pond system (3 interconnected ponds, financed under Phase 1 of the campus construction). The campus is divided into six (6) functional areas, including Front Campus Area, Teaching Experiment and Administration Area, Dormitory Area, Physical Education and Sports Area, and Ecology and Scenery Area.

45. **Phasing of the campus construction.** The construction of Chengbi campus is divided into three phases (Figure III-2). Phase I, financed domestically, is under construction; Phase II will be financed by the project (Output 2). Phase III is at initial planning stage and its implementation is not confirmed. Phase I includes buildings and facilities in the west side of the campus including campus road network, the center scenery area (including the man-made lake), the engineering experimental and training center, the GSM TVET teaching building, the public teaching center, the public experimental center, a student cafeteria, dormitories and sports facilities. Phase II will include facilities at the east and central parts of the campus, including 12 buildings financed under output 2 of the project (Table III-2). In addition, Phase II will also include a photovoltaic power generation system, a high-efficiency heat pump AC and hot water system for selected buildings, sports facilities, landslide protection works (40,000 m<sup>2</sup>) and other associated facilities such as a 2,000-m<sup>3</sup>/d wastewater treatment and reuse system. The component will also include the procurement and installation of teaching and training equipment for various TVET and undergraduate programs, which will be procured using a special funding from the PRC's Ministry of Education. The list of equipment is provided in Table III-3.



Figure III-1: Phases of Chengbi Campus Construction



Figure III-2: Conceptual drawing of Chengbi Campus

| No.  | Buildings and Facilities Under the Output 2                      | Foot Area<br>(m²) | Building Area<br>(m²)  | Storey |
|------|--|-------------------|--|--------|
| 2.1  | Library  | 5,019             | 27,545   | 8      |
| 2.2  | Administration building  | 3,169             | 12,338   | 8      |
| 2.3  | Gymnasium and physical education building                        | 3,625             | 8,751  | 4      |
| 2.4  | Business school building   | 2,090             | 8,788  | 6      |
| 2.5  | Politics and law department building                             | 1,491             | 8,295  | 6      |
| 2.6  | Chinese and foreign language department building                 | 3,286             | 16,448   | 9      |
| 2.7  | Physics, electronics and math building                           | 3,412             | 19,538   | 6      |
| 2.8  | Chemistry and biology department building                        | 1,907             | 10,167   | 6      |
| 2.9  | Art and science education building                               | 3,854             | 17,006   | 6      |
| 2.10 | Student dormitory -B1  | 2,380             | 13,600   | 5      |
| 2.11 | Student dormitory -B2  | 1,080             | 9,060  | 6      |
| 2.12 | Student dormitory –B3  | 1,564             | 9,157  | 6      |
|      | Total  | 32,877            | 160,693  |        |
| 2.13 | Photovoltaic power generation system                             | C<br>Produc       | apacity = 3.47 MW<br>tion = 3.3-3.4 Mio kWh<br>(80-100 kWh/m2*a) | n/a    |
| 2.14 | Outdoor sports facilities (basketball, badminton, tennis courts) |                   |  |        |
| 2.15 | Slope protection and retaining walls                             | То                | tal area = 40,606 m <sup>2</sup>                                 |        |

Table III-2: Summary of Proposed Buildings and Facilities

Source: Project Administration Manual (July 2014)

|    |  |      |          | Unit Price | Cost (10k |
|----|--|------|----------|------------|-----------|
| No | Description                              | Unit | Quantity | (10k CNY)  | CNY)      |
| 1  | Casting Mold Lab                         | set  | 1        | 261.47     | 261.47    |
| 2  | Electronic Simulation Lab                | set  | 1        | 82.42      | 82.42     |
| 3  | Aluminum Lab                             | set  | 1        | 298.30     | 298.30    |
| 4  | Physics, Chemistry and Material Lab      | set  | 1        | 251.50     | 251.50    |
| 5  | Chemical Engineering Lab                 | set  | 1        | 135.00     | 135.00    |
| 6  | Corrosion Protection Lab                 | set  | 1        | 90.00      | 90.00     |
| 7  | Chemical Engineering Simulation Lab      | set  | 1        | 80.00      | 80.00     |
| 8  | Tropical Biology Lab                     | set  | 1        | 284.50     | 284.50    |
| 9  | Natural Organic Lab                      | set  | 1        | 290.00     | 290.00    |
| 10 | Agricultural Product Lab                 | set  | 1        | 444.26     | 444.26    |
| 11 | ERP Lab                                  | set  | 1        | 50.00      | 50.00     |
| 12 | E-commerce Lab                           | set  | 1        | 60.00      | 60.00     |
| 13 | Language Lab                             | set  | 1        | 50.00      | 50.00     |
| 14 | Digital Language Lab                     | set  | 1        | 88.40      | 88.40     |
| 15 | Multipurpose Language Learning Center    | set  | 1        | 253.00     | 253.00    |
| 16 | Internet and Information Lab             | set  | 1        | 161.20     | 161.20    |
| 17 | Internet Engineering Lab                 | set  | 1        | 358.00     | 358.00    |
| 18 | Intelligence Control Engineering Lab     | set  | 1        | 202.70     | 202.70    |
| 19 | Communication Engineering Lab            | set  | 1        | 597.76     | 597.76    |
| 20 | Ethnic Minority Teaching Lab             | set  | 1        | 157.00     | 157.00    |
| 21 | Digital Media Art Lab                    | set  | 1        | 122.22     | 122.22    |
| 22 | Fashion Design Lab                       | set  | 1        | 46.45      | 46.45     |
| 23 | Art Lab                                  | set  | 1        | 50.68      | 50.68     |
| 24 | Clay Art Lab                             | set  | 1        | 63.12      | 63.12     |
| 25 | Textile Coloring Lab                     | set  | 1        | 112.35     | 112.35    |
| 26 | Tourism Planning Lab                     | set  | 1        | 200.08     | 200.08    |
| 27 | You River Basin Cultural Research Center | set  | 1        | 110.20     | 110.20    |
| 28 | Piano Room                               | set  | 1        | 135.00     | 135.00    |
| 29 | Acoustic Lab                             | set  | 1        | 48.18      | 48.18     |
| 30 | Music Room                               | set  | 1        | 32.19      | 32.19     |
| 31 | Minority Performance Hall                | set  | 1        | 220.78     | 220.78    |
| 32 | Library Information System               | set  | 1        | 547.84     | 547.84    |
| 33 | Campus Network System                    | set  | 1        | 512.90     | 512.90    |
|    |  |      |          |            |           |
|    | Total =                                  |      |          |            | 6397.50   |

Table III-3: Summary for Teaching and Lab Equipment

Source: Project Administration Manual (July 2014)

# E. Campus Buildings Financed by the Project (Output 2)

46. The project will support the construction of 12 buildings. The summary of the functional areas for classroom, laboratory facilities, office, and administrative facilities is shown in **Table III-4**. The buildings are described in the following paragraphs.

|     |   | Worksh | ops/Lab | Facility | Rooms  | Class | ooms  | Admin | Office |
|-----|---|--------|---------|----------|--------|-------|-------|-------|--------|
|     |   | No.    | Areas   | No.      | Areas  | No.   | Areas | No.   | Areas  |
| No. | Names                                   | Room   | (m²)    | Room     | (m²)   | Room  | (m²)  | Room  | (m²)   |
|     | Gymnasium and Physical Education        |        |         |          |        |       |       |       |        |
| 1   | Department Building                     | 14     | 3440    | 2        | 140    | 10    | 788   | 14    | 512    |
| 2   | Business Department Building            | 23     | 2160    | 0        | 0      | 17    | 1980  | 19    | 1074   |
| 3   | Politics and Laws Department Building   | 10     | 900     | 0        | 0      | 25    | 2641  | 24    | 1064   |
|     | Foreign Language, Chinese Department    |        |         |          |        |       |       |       |        |
| 4   | Building                                | 29     | 2746    | 0        | 0      | 61    | 5599  | 54    | 2440   |
|     | Building of Physics & Communication,    |        |         |          |        |       |       |       |        |
|     | Mathematics and Computer Engineering    |        |         |          |        |       |       |       |        |
| 5   | Department                              | 78     | 7312    | 5        | 155    | 33    | 3475  | 17    | 1555   |
|     | Chemical and Life Sciences Department   |        |         |          |        |       |       |       |        |
| 6   | Building                                | 46     | 3133    | 1        | 37.88  | 28    | 2632  | 10    | 545    |
|     | Arts and Educational Science Department |        |         |          |        |       |       |       |        |
| 7   | Building                                | 138    | 6972    | 9        | 148    | 28    | 2490  | 29    | 1108   |
|     | Total:                                  | 338    | 26663   | 17       | 480.88 | 202   | 19605 | 167   | 8298   |

Table III-4: Summary of Functional Areas in Each Building

Source: Project Administration Manual (July 2014).

47. **Library.** The library is a reinforced concrete frame + shear wall structure with eight (8) stories. The total building area and the footing area are 27,545 m<sup>2</sup> and 5,019 m<sup>2</sup>, respectively. The total building height is 38.7 m. The library will have computer-controlled 1.5 million book collection and 400 reading seats. The building includes four functional areas of storage, borrowing, reading and management. The design has fully incorporated the use of natural ventilation and sunlight, and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standards. A high-efficiency heat-pump AC system will be installed for the entire building.

48. **Administration building.** It is an eight-story reinforced concrete frame structure (**Figure III-3**). The total building area and the footing area are 12,338 m<sup>2</sup> and 3,169 m<sup>2</sup>, respectively. The total building height is 29.4 m. The building includes three functional areas of offices, conference rooms, and supporting area. The design has fully incorporated the use of natural air flow and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standards. A high-efficiency heat-pump AC system will be installed for the entire building.

49. **Gymnasium.** The gymnasium is a five-story reinforced concrete frame structure with four stories above the ground and one underground story. The building is a rectangle structure (**Figure III-4**). The total building area and the footing area are  $8,751 \text{ m}^2$  and  $3,625 \text{ m}^2$ , respectively. The total building height is 27.0 m, with the length of 96 m and width of 48 m. The building includes three functional areas of athletic training, sport research, and administration. The design has fully incorporated the use of natural air flow and sunlight, and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standard.



Figure III-3: Administration Building

Figure III-4: Gymnasium

50. **Business school building.** It is a reinforced concrete frame structure with six stories above the ground. The total building area and the footing area are 8,787.5 m<sup>2</sup> and 2,090 m<sup>2</sup>, respectively. This is a "U" type structure with the total building height of 23.7 m. The building includes four functional areas of large classrooms, regular classrooms, teaching and research, and administration. The design has fully incorporated the use of natural air flow and sunlight, and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standard.

51. **Political and law school building.** The building is a reinforced concrete frame structure with six stories above the ground. The total building area and the footing area are 8,295 m<sup>2</sup> and 1,492 m<sup>2</sup>, respectively. The total building height is 23.7 m. The main entrance is at the northeast side of the building, and the secondary entrance is at the south side for emergency evacuation. The building includes three functional areas of teaching, education research, and administration. The design has fully incorporated the use of natural ventilation and sunlight, and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standard.

52. **Physics electronics and math building.** This is a "U" shape reinforced concrete frame structure with six stories above the ground (Figure III-5). The total building area and the footing area are 19,538 m<sup>2</sup> and 3,412 m<sup>2</sup>, respectively. The total building height is 23.7 m. The building includes three functional areas of teaching and training, education research, and administration. The design has fully incorporated the use of natural ventilation and sunlight, and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standard.

53. **Chinese and foreign language building.** This is a domed shape reinforced concrete frame structure with six stories above the ground. The total building area and the footing area are 16,448 m<sup>2</sup> and 3,286 m<sup>2</sup>, respectively. The total building height is 23.7 m. The building includes four functional areas of experimental and training, classroom, teaching and research, and administration. The design has fully incorporated the use of natural air flow and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standard.

54. **Chemistry and biology building.** This is a "U" shape reinforced concrete frame structure with six stories above the ground (**Figure III-6**). The total building area and the footing area are 10,167 m<sup>2</sup> and 1,907 m<sup>2</sup>, respectively. The total building height is 23.7 m. The building includes four functional areas of experiment and training, classroom, education research, and administration. The design has fully incorporated the use of natural air flow and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standard.





Figure III-5: Physics, Electronics and Math Building

Figure III-6: Chinese and Foreign Language Building

55. **Art and science education building.** This is a reinforced concrete frame structure with six stories above the ground. The total building area and the footing area are 17,006 m<sup>2</sup> and 3,854 m<sup>2</sup>, respectively. The total building height is 23.7 m. The building includes four functional areas of experiment and training, classroom, education research, and administration. The design has fully incorporated the use of natural air flow and adoption of energy saving materials for exterior walls, roof and windows. The lighting design will follow national green public building standard.

56. **Dormitories B1, B2, and B3.** The dormitory group B has three buildings; each of them is a reinforced concrete frame structure with six stories above the ground. The total building height is 19.8 m. The first floor of the building will have study rooms, bike parking, laundry rooms, and other supporting spaces. The second to sixth stories are student dormitory rooms. The design has fully incorporated the use of natural air flow and adoption of energy saving materials for exterior walls, roof, and windows. The lighting design will follow national green public building standard standards.

# F. Other Campus Facilities Financed by the Project

Slope stability and slope protection. The campus is surrounded by various hills and slopes, 57. and the project involves cuts to the existing hills. Slope stability is one of the major safety concerns for the construction, especially during rains which could increase the risk of landslides. At FSR stage, a preliminary slope stability analysis has been conducted and the slope protection methods have been proposed with a reasonable cost estimate. A preliminary geotechnical assessment was conducted to evaluate the potential risk of landslide and slope stability problems. The geotechnical formation at the campus site consists of top backfill soil of 0.8 to 1.1 m, hard clay of 0.3 to 15.3 m, sandy rock of 0.7 to 13.9 m, and lime stone of 2 to 18.8 m. The general condition of the geotechnical condition is categorized as the hard soil to soft rock. It is relatively stable and suitable for general construction. During the PPTA, different methods for slope protection have been evaluated and selected. Three schemes ware defined in the FSR based on the slope conditions and the findings of the geological assessment report (Figure V-2 and Figure V-3). The slope protection works will include: (i) Design I – natural vegetation slope protection (in blue); (ii) Design II - gravity retaining wall + vegetation slope protection (in pink); and (iii) Design III - arched concrete-framed vegetation slope protection, anchored to the bedrock (in red). The area of slope protection is 40,606 m<sup>2</sup> in total, and the designs comply with the PRC's Standard Drawings for Retaining Walls and Slope Protection of 04J008.

58. **Heat pump hot water and air conditioning system.** A high-efficiency heat pump hot water and air conditioning system will be installed in the campus. The hot water system will be installed in the student dormitories, and the heat pump air conditioning system will be installed at Library and

Administration Buildings.

59. **Photovoltaic power generation system.** A photovoltaic power generation system, with the designed capacity of 3.47 MW will be installed on top of the campus buildings ( $32,900m^2$ ). The annual power generation will be 3.3-3.4 million kWh, which amounts to 3,540 tons of CO<sub>2</sub> emission reduction.<sup>14</sup> The estimated electricity will cover some 15% of the total campus demand. The proposed photovoltaic system consists of photovoltaic panels array (multi-crystalline silicon), photovoltaic confluence boxes, photovoltaic inverters, transformers, electrical conversion and control system and monitoring system. The estimated cost is about CNY 29.58 million.

<sup>&</sup>lt;sup>14</sup> A KWh electricity generated by solar energy is equal to 0.4 kg standard coal saving and 0.997 kg of CO<sub>2</sub> emission reduction.



Figure III-7: Layout of Chengbi Campus, BVS and Chengbi River

# IV. DESCRIPTION OF THE ENVIRONMENT (BASELINE)

60. The description of the pre-project environment (biophysical and socio-economic) establishes (i) the environmental setting within which the project will be implemented, and therefore needs to be designed to suit, and (ii) the environmental values which will be changed (either negatively or positively) by the project. Both these roles are encompassed by the concept of the "baseline" environment.

## A. Physical Environment

61. **Geographical location.** The project area (Chengbi Campus of Baise University) is located within Baise Municipality. Baise Municipality is located in the western part of GZAR at latitudes 104°28' ~ 107°54' east and longitudes 22°51' ~ 25°07' north. It is the largest municipality in GZAR, with a total administrative area of 36,300 km<sup>2</sup> and a total population of 4.09 million (2012). It borders Yunnan Province to the west, Guizhou Province to the north, Nanning City, the capital of GZAR to the east, and Vietnam to the south. Baise City is approximately 266 km from Nanning. The 11 counties under the jurisdiction of Baise Municipality are Pingguo, Tiandong, Tianyang, Tianlin, Debao, Jingxi, Napo, Lingyun, Leye, Longlin, and Xilin, with 10 of these classified as state-level poor counties.

62. **Geology and topography.** Baise is characterized by mountainous karst, located in the transition belt between the Yun-Gui Plateau and the Guangxi hills. Mountainous areas account for 95.4% of the terrain (with 65.4% stone mountains and 30% earth mountains), with hills and plains accounting for the remaining 4.6%. The Youjiang River Valley is made up of low hills, karst hills, mountains and alluvial terrain; soil types include clay and sandy clay, while the bedrock is mainly mudstone, conglomerate, shale, and sandstone. Baise's terrain and topography could be classified into the following three types: (i) earth mountains in the north at elevations of 500-1500 m ASL; (ii) stone mountains of karst landform in the south at elevations of 500-800 m ASL. The area of stone mountains account for 21.31% of the total area of Baise Municipality; and (iii) Youjiang River Basin in the middle at elevations of 100-300 m ASL.

63. The new Chengbi campus is located in the north of Baise's urban center, at an elevation between 120m and 320m ASL (**Figure IV-1**). The geotechnical formation at the campus site consists of top backfill soil of 0.8 to 1.1 m, hard clay of 0.3 to 15.3 m, sandy rock of 0.7 to 13.9 m, and lime stone of 2 to 18.8 m. The general condition of the geotechnical condition is categorized as the hard soil to soft rock. It is relatively stable and suitable for general construction. A topographic survey was conducted for the campus, presented in **Figure IV-2**.



Figure IV-1: Elevations within Chengbi Campus



Figure IV-2: Topographic Survey, Chengbi Campus

64. **Seismicity**. Baise is sensitive to seismic activities. Most recently, a magnitude-4.5 earthquake occurred on February 20, 2013 at the boundaries of Pingguo and Tiandong Counties in Baise Municipality. Comparing the basic seismic intensity of Baise Municipality with the Earthquake Parameters Zoning Map of China (GB 18306-2001), Earthquake Protection Classification Standard of Construction Works (GB 50223-2008) and Earthquake Protection Design Specification of Buildings (2010), design for the structures in the municipality adopts seismic precautionary intensity of 7 degrees, a basic earthquake acceleration of 0.1 g, and a vibration response spectrum period of 0.35 s. Heavily populated public buildings such the buildings to be financed by the project, must adopt one degree above the seismic precautionary intensity (i.e. 8 degrees).

65. **Climate**. Baise has subtropical seasonal monsoon climate, with long summer and short winter. Mild climate occurs in the mountainous regions to the north and south, while hot and dry in the Youjiang River Basin. The lowest temperature is in January at average 13.4°C; highest temperature in July at average 28.61C. The extreme highest temperature in past years is 42.5 °C; the extreme lowest temperature in past years is -2°C. Rainy season occurs from May to October, with frequent storm weather from June to September. Dry season occurs from November to April. Severe weather includes drought, flood, wind storm, cold and hail. Of these, droughts and colds are more frequent; especially spring droughts whose frequency reaches 70-90%. **Table IV.1** summarizes Baise's climatic characteristics.

| Weather elements                 | Value           |
|----------------------------------|-----------------|
| Annual average temperature       | 19.0 – 22.1°C   |
| Extreme high temperature         | 42.5°C          |
| Extreme low temperature          | -2.0°C          |
| Annually average precipitation   | 1,300 mm/a      |
| Highest 24-hr precipitation      | 402.1 mm (1973) |
| Average wind speed               | 2.5 m/s         |
| Average evaporation amount       | 1,385 mm/a      |
| Average annual frost free season | 357 days        |

Table IV-1: Main Meteorological Parameters of Baise City

Source: Updated EIS report, June 2014.

66. **River system and hydrology.** There are two main rivers in Baise Municipality, including Youjiang and Chengbi River. Youjiang River is the upstream of Yujiang River, which is a primary tributary of the Pearl River. Youjiang River originates at the Yangmei Mountain in Guannan County of Yunnan Province and flows from the northwest towards the southeast across Baise. It merges with Xiyangjiang River after passing through Xilin and Tianlin Counties, and becomes Boyi River, then merges with Chengbi River at Baise City and becomes Youjiang River. It then merges with Zuojiang River at the Song Village of Nanning Municipality and becomes the Yujiang River. The total length of Youjiang River is 718 km. Its length within Baise Municipality is 465 km, with a catchment of 21,903 km<sup>2</sup>. The annual average flow rate in the Baise section is 277 m<sup>3</sup>/s and the incoming water volume is 8.74 billion m<sup>3</sup>/a. The normal water level in the Baise section is 115.52~115.97 m. The water level for 1-in-50 year flood return is at 119.88~121.22 m. The existing embankment is an elevation of 120~135 m, providing adequate protection from 1-in-50 year floods. (The flood risk within the project area is discussed in para 138).

67. **Chengbi river** originates from the foot of Qinglong Mountain in Lingyun County with the total length of 56.8 km and a total catchment area of 1,326 km<sup>2</sup>. It flows into Youjiang River in Baise City. The average flow of Chengbi River is 40.5 m<sup>3</sup>/s (1.1581 billion m<sup>3</sup> per year). Chengbi River is the main water source of Baise City, supplied through the Chengbi Lake, an artificial reservoir.<sup>15</sup> The reservoir is located northeast of Baise city, upstream of Chengbi River, 4.1km upstream of the Chengbi Campus. The reservoir area is 39.1 km<sup>2</sup> (when full), with a total storage capacity of 1.25 billion m<sup>3</sup>, and an effective capacity of 580 million m<sup>3</sup>. The annual average runoff volume is 38.7 m<sup>3</sup>/s, and the average water level of the reservoir is 175.69 m. Chengbi Reservoir is the drinking water source of Baise City.

68. **Groundwater.** The site of Chengbi campus contains two layers of groundwater, i.e. phreatic water in loose rock mass recharged mainly by rainwater (2.0-3.0 m deep under the lowest ground in the campus, with annual variation of 1-2m); and bedrock fissure water (6.0-8.0 m deep), which has slight corrosion potential to the concrete structure and reinforcing steel bars.<sup>16</sup> None of these groundwater resources are being utilized.

69. **Flora and fauna.** The ecosystem within the assessment area (i.e., New, Chengbi Campus) can be characterized as a shrub and grassland ecosystem with strong human disturbance, with low diversity of plant species. Vegetation within the area belongs to the sub-tropical monsoon evergreen broad-leaf forest, and consists mainly of evergreen shrubs, gramineae (true grasses), *engelhardia* (tree), *fagaceae (trees and shrubs)*, as well as fruit trees (mango, litchi, banana). None of the rare and protected species present in Chengbi River Nature Reserve (see below) has been recorded in the project site.<sup>17</sup> Animals are dominated by small birds, rodents and snakes, with frogs occurring in wet areas. The project area is significantly human-altered and does not contain animal habitats of importance.

70. **Protected sites.** Literature review and site reconnaissance conducted for the EIS revealed that there is no protected area or nature reserve, and no record of rare, threatened, or endangered species within the project's area of influence. The Chengbi River Nature Reserve (CBRNR) is located at the Chengbi Lake Reservoir 7 km to the northeast of Baise's urban area, and 4.1 km from the project's area of influence. It is a forest-reservoir ecosystem covering an area (including the reservoir) of 39 km<sup>2</sup> with the functions of biodiversity conservation, water source protection, scientific research and eco-tourism. It was added to the list of important nature reserves in the PRC in 2000. Due to the distance separation, CBRNR will not be affected by this project.

71. **Natural resource.** Baise is rich in natural resources. It is a famous base for subtropical fruits and vegetables in GZAR and in the PRC. Forests cover 58.6% of the municipality's total land area. Baise is rich in mineral resources such as bauxite, copper, crystal, lignite, and gold. Prospective reserves of bauxite total 1 billion tons, accounting for almost one third of the PRC's total. Baise is also an important producer of aluminum, both in ore and in product manufacturing. It is the 3rd largest hydropower producer in the province, with 5 million kilowatts produced annually.

<sup>&</sup>lt;sup>15</sup> Chengbi Lake in Chinese means "the lake with clear and clean water".

<sup>&</sup>lt;sup>16</sup> Source: FSR.

<sup>&</sup>lt;sup>17</sup> Species under national protection include shorea chinensis, golden camellia, hopea chinensis, caesalpiniaceae Erythrophleum fordii, Gungxi greengage, fokienia hodginsii, tsoongiodendron odorum, burretiodendron hsienmu, Zenia insignis, toon and keteleeria fortune. Wild animals of relevance include pangolin, macaques, *cervus elaphus* (red deer), civet, wild pig, *gekkonidae* (geckos), snakes such as the *Ophiophagus Hannah* (King cobra), the *zaocys*, coral snake, francolin, and many bird varieties.
#### B. Socioeconomic Conditions

72. **Economic features.** Baise realized GDP of CNY74.62 billion in 2012, representing a rise of 8.9% year on year. The city's GDP accounted for approximately 5.7% of GZAR's total. The value added output of secondary industry (industry and construction) amounted to CNY41.42 billion, accounting for 55.5% of the city's total. In 2012, the value added industrial output from enterprises rose 10.1% year on year to CNY31.51 billion. Nonferrous metallurgy is one of the pillar industries of the city. In addition, petrochemicals, energy, coal, manganese smelting, building materials, sugar production and paper making have also been developing rapidly. The service sector contributed 26.0% of the city's total GDP in 2012. During 2012, Baise's tourism income totaled RMB 9.51 billion, increasing 28.1% year on year.

73. In 2012, the total value of imports and exports amounted to US\$508.66 million (comprising export value of US\$ 292.86 million and import value of US\$ 215.8 million), up 18.6% year on year. The city's major trading goods are aluminum, electrolytic manganese and pre-baked anode. Exports sell primarily to countries in ASEAN. The major economic indicators are listed in **Table IV-2**.

| No. | Economic Indicator                             | Data               |
|-----|--|--------------------|
| 1   | Total GDP                                      | 74.62 billion RMB  |
|     | GDP composition                                |                    |
| 2   | Primary industry                               | 18.5%              |
| 3   | Secondary industry (industry and construction) | 55.5%              |
| 4   | Tertiary industry (Service)                    | 26.0%              |
| 5   | GDP per capita                                 | 21,279 RMB         |
| 6   | Unemployment rate                              | 3.5%               |
| 7   | Fixed asset investment                         | 100.1 million RMB  |
| 8   | Tota import and export                         | 508.66 million USD |
| 9   | Export   | 292.86 million USD |
| 10  | Import   | 215.8 million USD  |
| 11  | Sales of consumer goods                        | 15.67 billion RMB  |

| Table IV-2: Baise Economic Development Indicators in | 2012 |
|--|------|
|--|------|

GDP = gross domestic product.

Source: Baise Social economic Development Report 2012.

74. **Transportation.** Baise has a very convenient transportation system. The Baise Airport, 38 km from the city's downtown area, operates flights to cities such as Guilin, Nanning, Chongqing and Guangzhou. The Nanning-Kunming, Shantou-Kunming, and Baotou-Youyi Pass Expressways, State Highway 323 and State Highway 324 run through the city. In addition, the Nanning-Kunming Railway, the trunk railway in southwest of Guangxi, also runs across Baise and connects the city with Nanning and Kunming, the capitals of Guangxi and Yunnan, respectively.

75. **Physical cultural resources.** Baise is a multi-cultural city with 7 ethnic minority groups, including the Zhuang, the Miao, the Yi, the Mulao and the Yao. They live together harmoniously and retain their cultural legacy and life practices. Baise has a revolutionary history. Youjiang Revolutionary Base, established by Deng Xiaoping in 1929, has become one of the most important red tourism (revolutionary tourism) spots in the PRC. Baise Uprising Memorial is also ranked as one of the country's 100 Patriotism Educational Demonstration Bases by China's Publicity Department. Consultations with the relevant cultural authority and site investigation during the IEE and domestic EIS showed that the project-influenced area does not have any known cultural or historical sites. Should buried artifacts of archaeological significance be uncovered during the construction stage within the project areas, construction will be stopped and immediately reported to the Baise Cultural Heritage Bureau in

accordance with the PRC's Cultural Heritage Protection Law.

# C. Environmental Quality Baseline

76. **Ambient air quality.** The PRC ranks air quality into 3 classes according to its Ambient Air Quality Standard (GB 3095-1996), with Class I being the best air quality and Class III the worst air quality. Daily and hourly average ambient air quality was monitored by the local EMS for seven consecutive days from 9 to 15 April 2014. Daily average monitoring was conducted four times a day (2:00, 8:00, 14:00 and 20:00, respectively). One sampling point was selected at the center of the campus. Baseline data is shown in **Table IV-3**. The applicable standard is Grade II of National Ambient Air Quality Standard (GB3095-1996).

|               | Bara Timo       |       |       |       | Date  | (April 2 | 014)  |       |            | GB3095-1996 | GB3095-2012 | EHS            |
|---------------|-----------------|-------|-------|-------|-------|----------|-------|-------|------------|-------------|-------------|----------------|
|               | Para. Time      | 9     | 10    | 11    | 12    | 13       | 14    | 15    | (Grade II) | (Grade II)  | Guideline   |                |
|               |                 | 02:00 | ND    | ND    | ND    | ND       | ND    | ND    | ND         |             |             |                |
| ge            | 80.             | 08:00 | ND    | ND    | ND    | ND       | ND    | ND    | ND         | 0.50        | 0.50        | n/o            |
| ŝraj          | SU <sub>2</sub> | 14:00 | ND    | ND    | ND    | ND       | ND    | ND    | ND         | 0.50        | 0.50        | n/a            |
| AV6           |                 | 20:00 | ND    | ND    | ND    | ND       | ND    | ND    | ND         |             |             |                |
| Hourly A      | NO2             | 02:00 | 0.008 | 0.010 | 0.007 | 0.007    | 0.013 | 0.008 | 0.006      | 0.24        | 0.20        |                |
|               |                 | 08:00 | 0.011 | 0.012 | 0.009 | 0.009    | 0.012 | 0.006 | 0.009      |             |             | 0.20           |
|               |                 | 14:00 | 0.007 | ND    | 0.010 | ND       | 0.006 | 0.005 | 0.008      |             |             |                |
|               |                 | 20:00 | 0.007 | 0.007 | 0.006 | 0.005    | ND    | 0.008 | 0.009      |             |             |                |
| Daily Average | S               | 02    | ND    | ND    | ND    | ND       | ND    | ND    | ND         | 0.15        | 0.15        | 0.125<br>-0.05 |
|               | N               | 02    | 0.008 | 0.007 | 0.007 | 0.007    | 0.009 | 0.007 | 0.007      | 0.12        | 0.08        | 0.10           |
|               | Т               | SP    | 0.096 | 0.094 | 0.155 | 0.137    | 0.193 | 0.213 | 0.124      | 0.15        | 0.15        |                |
|               | PN              | /10   | 0.067 | 0.066 | 0.072 | 0.061    | 0.094 | 0.106 | 0.064      | 0.15        | 0.15        | 0.075<br>-0.15 |

| Table IV-3. | Air | Quality in | Project | Areas | (Unit: ma/m <sup>3</sup> )             |
|-------------|-----|------------|---------|-------|--|
|             |     | ~~~~,,     |         |       | (•···································· |

Key: ND - not detected (lower than detection limit). Source: Domestic EIS Report, June 2014.

77. According to **Table IV-3** above, the quality of the monitored ambient air in the campus all met the Grade II Standard of GB 3095-1996 and GB3 095-2012, as well as the guideline values recommended in the World Bank Group's EHS Guidelines.

78. **Noise.** Noise monitoring within the project area was conducted during the period of 10–11 April 2014 at the boundaries of the New Chengbi Campus. Eight points were selected, which are shown in **Table IV-4**, and the monitoring results are listed in **Table-5** below.

| Sampling |  |  |
|----------|--|--|
| Code     | Monitoring Location                          | Description                                      |
| #1       | East boundary of the campus                  | Barren land                                      |
| #2       | South boundary of the campus                 | 40m west of the road (first floor of the school) |
| #3       | West boundary of the campus                  | 15 m to the Banbei Expressway                    |
| #4       | North boundary of the campus                 | Nearby the teaching building                     |
| #5       | East boundary of the ADB construction scope  | Nearby the teaching building                     |
| #6       | South boundary of the ADB construction scope | Nearby the teaching building                     |
| #7       | West boundary of ADB construction scope      | Barren land                                      |
| #8       | North boundary of the ADB construction scope | Nearby the teaching building                     |

ADB = Asian Development Bank.

Source: Domestic EIS Report, June 2014.

| Ideline Assessment Result |
|---------------------------|
| meet                      |
|                           |

Table IV-5: Baseline Noise Monitoring Data (dB(A))

Source: Domestic EIS Report, June 2014.

79. **Table IV-5** above shows that baseline noise monitoring data all complied with both the PRC standard of GB 3096-2008 and the World Bank's EHS Guideline values.

80. Surface water quality. The baseline monitoring of surface water quality within the project impact area was performed during 10-12 April 2014. Three points were selected for the monitoring: point #1 and #2 were monitored for baseline water quality of the Chengbi River, and the point #3 was the water quality of small man-made pond within the campus (Figure IV-1 and 2). The monitoring points are shown in Table IV-6, and the monitoring results are presented in Table IV-7.

# Table IV-6: Baseline Surface Water Monitoring Locations

| No. | Description of Monitoring Location   | Applicable Standard     |
|-----|--|-------------------------|
| #1  | Chengbi River (300 m upstream of the sewer pumping station, 400 m southwest of the campus) | Grade II of GB3838-2002 |
| #2  | Chengbi River (300 m downstream of the sewer pumping station)                              | Grade II of GB3838-2002 |
| #3  | The man-made pond within the campus  | Grade IV of GB3838-2002 |

Source: Domestic EIS Report, June 2014.

| Monitored<br>Parameter | Date    | #1<br>(Grade II) | #2<br>(Grade II) | #3<br>(Grade IV) | Class II Standard of<br>GB3838-2002 | Class IV Standard of<br>GB18919-2002 |
|------------------------|---------|------------------|------------------|------------------|-------------------------------------|--------------------------------------|
| pН                     | 10 Apr. | 8.39             | 8.40             | 7.58             | 6-9                                 | 6-9                                  |
|                        | 11 Apr. | 8.38             | 8.38             | 7.60             |                                     |                                      |
|                        | 12 Apr. | 8.40             | 8.40             | 7.60             |                                     |                                      |
| SS                     | 10 Apr. | 7.0              | 10.0             | 8.0              |                                     |                                      |
|                        | 11 Apr. | 8.0              | 9.0              | 9.0              |                                     |                                      |
|                        | 12 Apr. | 8.0              | 11.0             | 8.0              |                                     |                                      |
| DO                     | 10 Apr. | 6.7              | 6.7              | 5.8              | ≤6.0                                | ≤3.0                                 |
|                        | 11 Apr. | 7.0              | 7.0              | 5.7              |                                     |                                      |
|                        | 12 Apr. | 6.9              | 6.9              | 5.8              |                                     |                                      |
| COD <sub>mn</sub>      | 10 Apr. | 1.2              | 1.1              | 2.1              | ≤4.0                                | ≤6.0                                 |
|                        | 11 Apr. | 1.3              | 1.1              | 2.6              |                                     |                                      |
|                        | 12 Apr. | 1.2              | 1.1              | 2.3              |                                     |                                      |
| CODcr                  | 10 Apr. | 9.0              | 12.0             | 12.0             | ≤15                                 | ≤30                                  |
|                        | 11 Apr. | 11.0             | 8.0              | 10.0             |                                     |                                      |
|                        | 12 Apr. | 9.0              | 10.0             | 10.0             |                                     |                                      |
| BOD₅                   | 10 Apr. | 0.9              | 0.8              | 0.8              | ≤3                                  | ≤6                                   |
|                        | 11 Apr. | 0.8              | 0.8              | 1.0              |                                     |                                      |
|                        | 12 Apr. | 0.7              | 0.7              | 0.8              |                                     |                                      |
| NH <sub>3</sub> -N     | 10 Apr. | 0.338            | 0.333            | 0.432            | ≤0.5                                | ≤1.5                                 |
|                        | 11 Apr. | 0.421            | 0.410            | 0.339            |                                     |                                      |
|                        | 12 Apr. | 0.377            | 0.369            | 0.385            |                                     |                                      |
| TP                     | 10 Apr. | <u>0.17</u>      | 0.25             | 0.27             | ≤0.1                                | ≤0.3                                 |
|                        | 11 Apr. | 0.10             | 0.31             | 0.15             |                                     |                                      |
|                        | 12 Apr. | 0.12             | 0.26             | 0.16             |                                     |                                      |
| TN                     | 10 Apr. | 0.64             | 0.69             | 0.45             | ≤0.5                                | ≤1.5                                 |
|                        | 11 Apr. | 0.62             | 0.75             | 0.46             |                                     |                                      |
|                        | 12 Apr. | 0.62             | 0.71             | 0.45             |                                     |                                      |
| fecal                  | 10 Apr. | 1900             | 1000             | 760              | 2,000                               | 20,000                               |
| coliforms              | 11 Apr. | <u>3,700</u>     | <u>3,800</u>     | 2100             |                                     |                                      |
| (CFU/L)                | 12 Apr. | 4,700            | 2,200            | 1000             |                                     |                                      |

#### Table IV-7: Surface Water Quality (mg/L, except for fecal coliform and pH)

Key:  $BOD_5 = 5$  days biochemical oxygen demand,  $COD_{cr} =$  chemical oxygen demand,  $COD_{Mn} =$  permanganate index,  $NH_3-N=$  ammonia nitrogen; SS = suspended Solid; TN = total nitrogen; TP = Total Phosphorus. Source: Domestic EIS report.

81. According to **Table IV-7**, all ten monitored parameters at #3 point met the Grade IV standard of GB5838-2002, which shows that the water quality in the small man-made pond in the campus can be used for landscaping purposes (currently being constructed under Chengbi Campus Phase 1 implementation). Three parameters including TP, TN and fecal coliform at #1 and #2 points slightly exceeded the Grade II standard. Plausible causes include the discharge of domestic wastewater into Chengbi River and non-point source pollution (agriculture). These causes are not related to, and will not be exacerbated by the project.







Figure IV-4: The man-made pond within Chengbi Campus

#### D. Environment Sensitive Receivers within Project Area of Influence

82. Sensitive receptors during both construction and operation of the project have been identified in the domestic EIS Report. (**Table IV-8**). The project area is significantly human-altered and does not contain critical habitats. The project will have no impact on livelihoods through environmental media.

| No. | Sensitive Receptor  | Distance and Direction<br>to the Project Site | Characteristics  | No. of Affected<br>People |
|-----|---|---|--|---------------------------|
| 1   | Existing BVS campus (to<br>be renamed "Chengbi<br>West Campus" after the<br>project completion) | 200m west                                     | Teaching buildings, students' dormitory.   | 2,300 students            |
| 2   | New Chengbi Campus  | Project site                                  | Teaching and training buildings, students' dormitory.  | 10,000-15,000<br>students |
| 3   | Chengbi River   | 270 m west                                    | Surface water for fishery and landscaping according to the environmentally functional zoning |                           |

BVS = Baise vocational school.

Source: Domestic EIS Report, June 2014.

# V. ANTICIPATED IMPACTS AND MITIGATION MEASURES

# A. Screening of Potential Impacts

83. The potential impacts were screened during the IEE and PPTA processes in order to (i) identify the relative significance of potential impacts from the activities of the proposed project and construction and operation activities; (ii) establish the scope of the assessment which assists in focusing on major, critical, and specific impacts; and (iii) enable flexibility in regard to consideration of new issues, such as those that reflect the requirements by ADB's SPS.

84. The screening process showed that the civil works including construction of buildings and other facilities in Chengbi Campus will cause potential environmental impacts. The project impact area will be confined to the campus premises. No significant direct impacts outside the campus are anticipated, with exception of construction traffic. The main impacts relating to the construction, operation of buildings and facilities are indicated in **Figure V-1**.



Figure V-1: Major impacts during construction and operation

85. During **construction**, the major negative environmental impacts are associated with increased level of noise and dust due to the usage of heavy vehicles and construction machineries, waste soil and construction debris generated during excavation, backfill, foundation work, concrete structure and building decoration. Risks to occupational and community health and safety from construction activities are also considered potentially significant.

86. During **project operation**, no significant environmental impacts and risks are anticipated. Minor concerns include noise from the air-conditioners and ventilation facilities, practice training wastes, municipal solid waste and domestic sewage. To ensure that project facilities will be safe, energy efficient and green, BU agreed that all buildings shall comply with relevant design standards and codes, including but not limited to: GB/T50378-2006 (Evaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50011-2010 (Building Seismic Design Code); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007), and other applicable national design codes. Contractors will be required to provide operation and maintenance capacity building and training for the operators of the PV system and heat pumps. This will be included in contract specifications.

87. The results of the impact screening are shown in **Table V-1** below. Impacts during construction and operation phases are considered separately in the following sections.

|               | Assessment   |   |
|---------------|--------------|---|
| Project Phase | Item         | Potential Impacts   |
| Construction  | Landslide    | There are 8 potential landslide sites identified in the FSR.                                  |
|               | Wastewater   | Domestic sewage from workers' camps; and wastewater from vehicles and machinery               |
|               |              | washing.  |
|               | Air          | Dust generated from construction activities; exhaust gas from construction vehicles and       |
|               |              | machineries.  |
|               | Noise        | Noise from buildozers; excavators and loader; pile driving machines; concrete mixer;          |
|               |              | vibrator and electric saw; hoist and lifter.  |
|               | Solid waste  | Construction waste and municipal solid waste from workers' camps.                             |
|               | Soil         | Soil erosion caused by foundation excavation, and surface runoff.                             |
|               | Health and   | Construction site safety; occupational health and safety; safety of students and staff during |
|               | safety       | construction activities (including construction traffic).                                     |
| Operation     | Water source | Chengbi Lake (Baise's drinking water source, 4.1 km north of the campus) may be               |
|               |              | impacted by domestic sewer discharge from the campus.   |
|               | Wastewater   | Waste cooling water containing oil; domestic sewage from buildings;                           |
|               | Air          | Cooking oil fumes from the canteens of the campus;  |
|               | Noise        | Noise from air-conditioners and ventilation facilities; mechanical training equipment;        |
|               | Solid waste  | Municipal solid waste and waste from mechanical practice;                                     |
|               | Health and   | Fire and earthquake safety; indoor air quality and lighting; waste management; water          |
|               | safety       | supply; campus traffic management; etc.   |

 Table V-1: Screening of Environmental Impacts

Source: Domestic EIS (June 2014) and PPTA consultant observations.

#### B. Energy Conservation and Greenhouse Gas Emission Reduction

88. The energy conservation and greenhouse gas (GHG) emission reduction benefits of the project are derived primarily from the following major interventions: (i) the solar photovoltaic power generation facility, with the designed capacity of 3.47 MW will be installed on top of all campus buildings with flat roofs (15 buildings). The annual power generation will be 3.3-3.5 million kWh, which amounts to 3,540 tons of CO<sub>2</sub> emission reduction annually in comparison with conventional coal-fired power generation;<sup>18</sup> (ii) the two heat pump air conditioning systems will be installed on the library and administration building, which will bring 2.35 million kWh/a electricity saving, equivalent 2,342 tons of CO<sub>2</sub>; (iii) the installation of the on-site wastewater treatment facility in the campus, with the treatment capacity of 2,000 m<sup>3</sup>/d and the effluent quality of Class-1A, will produce COD<sub>cr</sub> removal of 75 tons and allow for 6.0 million m<sup>3</sup> water reuse annually; and (iv) the application of energy conservation materials for the construction of 12 campus buildings, including concrete hollow blocks and sintered porous brick, as well as energy efficient

<sup>&</sup>lt;sup>18</sup> A KWh electricity generated by solar energy is equal to 0.4 kg standard coal saving and 0.997 kg of CO<sub>2</sub> emission reduction (calculation basis: the PRC's NDRC and MEP.

lighting will further reduce energy consumption as compared to conventional materials. The expected energy saving and GHG emission reduction by the proposed project are shown in **Table V-2**.

| No. | Item   | Unit              | Amount  |
|-----|--|-------------------|---------|
| 1   | Solar photovoltaic power generation system   |                   |         |
|     | Designed capacity  | MW                | 3.47    |
|     | Annual power generation  | million kWh/a     | 3.3-3.5 |
|     | <ul> <li>Annual CO<sub>2</sub> emission reduction in comparison with conventional coal-fired power<br/>generation</li> </ul>   | tons/a            | 3,540   |
| 2   | The 2 heat pump air conditioning systems   |                   |         |
|     | <ul> <li>Annual electricity saving in comparison with conventional electricity system<br/>including 2 months for winter heating in winter and 2.5 months for air conditioning<br/>in summer (deducted 1 month winter vacation and 1.5 months summer vacation)</li> </ul> | million kWh/a     | 2.349   |
|     | Annual standard coal saving in comparison with conventional electricity system   | tons/a            | 939     |
|     | <ul> <li>Annual CO2 emission reduction in comparison with conventional electricity<br/>system</li> </ul>   | tons/a            | 2,342   |
| 3   | On-site domestic wastewater treatment facility   |                   |         |
|     | Designed treatment capacity  | m <sup>3</sup> /d | 2,000   |
|     | Annual COD <sub>cr</sub> removal   | tons/a            | 75      |
|     | Annual water conservation for landscaping  | m3/a              | 600,000 |

 Table V-2: Energy Savings and GHG Emission Reduction by the Proposed WTP

Source: calculated by the EIA the PPTA consultant based on the FSR.

# C. Environmental Considerations and proposed Mitigation Measures during Detailed Design and Pre-construction Phases

89. **Measures implemented during project preparatory technical assistance.** A number of environmental management measures have been implemented during PPTA to ensure that appropriate plans to ensure environmental performance of construction and operation of the project are in place. In the updated FSR (June 2014), all campus buildings and facilities were designed to avoid and/or minimize potential adverse impacts on the environment and surrounding areas (i.e. the existing BVS campus). The project underwent the PRC EIA process under the PRC laws and regulations. The original EIS report was approved by Baise EPB in May 2010, which was updated and strengthened by a qualified EIA institute (GZAR Environmental Science Research Institute) to reflect the revised project scope. The updated EIS was approved by Baise EPB in June 2014. A project-level grievance redress mechanism (GRM) has been defined and will be operational prior to construction to address safeguards related concerns and complaints.

90. **Pre-construction measures.** A number of environmental management measures will be implemented in the pre-construction phase to ensure project's environment management readiness. These include:

- (i) Institutional strengthening, including (a) appointment of one environment officer within the PMO (PMO-SO); (b) establishment of a project implementing unit (PIU) within Baise University, and appointment of one environment specialist within the PIU (PIU-ES); (c) hiring of an environment specialist within loan implementation support (LIS-ES) by the PMO; and (d) contracting of the Baise environmental monitoring center (BEMC) by the Baise University to conduct environment impact monitoring during construction.
- (ii) **Green building design.** The design for all buildings will be made compliant with relevant codes and standards pertaining to health, safety and resource-efficiency, including green

and energy-efficient building codes and specifications, but not limited to: GB/T50378-2006 (Evaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50011-2010 (Building Seismic Design Code); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007), and other applicable national design codes.

- (iii) **Updating environmental management plan.** Mitigation measures and monitoring plan defined in the EMP will be updated and incorporated into the detailed design to minimize adverse environmental impacts. This will be the responsibility of the PMO and Baise University, supported by the LIS-ES.
- (iv) Bidding document and contract documents. The EMP will be included in the bidding documents and contracts for procurement of civil works, goods and services. All contractors and subcontractors will be required to comply with the EMP. Reference to Public Procurement List of Energy-Saving Products (NDRC & MOF, 2011, or as updated) and Public Procurement List of Environmental Labeling Products (MEP & MOF, 2011, or as updated) will be included in bidding documents to ensure the project's adherence to green procurement principles.
- (v) Training in environmental management. Baise EPB and the LIS-ES will provide training to the PMO-SO, the Baise University, PIU-ES, contractors and construction supervision company (CSC) on implementation and supervision of EMP, GRM, reporting, in compliance with training plan (Table EMP-5).
- (vi) **Establishment of a grievance redress mechanism,** including (a) appointment of a GRM coordinator within PIU; (b) provision of training to GRM access points (e.g. PIU-ES, contractors); and (c) disclosure of GRM to affected persons before construction begins.
- (vii) **Develop site environmental management plan.** All contractors will be required to develop their site-EMPs, responding to all clauses and requirements of the EMP, and including sub-plans such as Spill Management Plan, Waste Management Plan, Temporary Traffic Management Plan, Occupational Health and Safety Plan, and Soil Erosion Control Plan.

# D. Impacts and Mitigation Measures during the Construction Phase

91. The following impacts and mitigation measures refer to construction impacts. Potential construction phase impacts are associated with soil erosion, increased noise and dust levels, liquid and solid wastes, and safety risks to community members (on campus) and workers. Impacts on flora and fauna will be minimal. There are no reports of physical cultural resources in or around any of the sites, though a chance find procedure will be put in place. Overall, environmental impacts associated with the construction phase are expected to be localized and short term, and can be effectively mitigated through the application of sound construction site management practices. Main impacts during construction, as well as mitigation measures, are discussed below.

# 1. Impacts to Physical and Biological Environment

92. **Impacts on soil and landscape.** Potential impacts and issues related to soil and landscape include: (i) soil erosion; (ii) soil contamination; (iii) inappropriate management of spoil; and (iv) slope protection and landslide risk management.

(i) Soil erosion. May be caused by construction, excavation, borrow pits, stockpiles and spoils from earthwork during construction of buildings and site grading. The factors that are expected to contribute to accelerated erosion in the campus are winds and rainfall, especially during the rainy months of April to September. Construction works should be programmed to minimize soil excavation works in rainy seasons. If erosion prevention measures described below in the construction phase are implemented, no significant induced soil erosion is anticipated.

- (ii) **Soil contamination.** Contamination of soil in the construction phase may result from the inappropriate transfer, storage, and disposal of petroleum products, chemicals, liquids and solid waste.
- (iii) **Spoil and deconstruction waste disposal.** Significant spoil disposal will be required, and potential impacts will be short-term and localized.
- (iv) Landslide risk. Eight potential landslide sections have been identified in the FSR, including four caused by nature and four induced by human activity (Figure V-2). A landslide risk assessment was conducted in the framework of the FSR, which concluded that risk of landslides at these eight points was relatively low, but that slope protection works were required.

93. **Earthwork.** According to the updated EIS and the water and soil conservation plan (WSCP), the project will require significant earthwork. Construction in Chengbi Campus Phase 2 will require 2.7 million m<sup>3</sup> of earth excavation including building foundation and slope excavation works, and 1.8 million m<sup>3</sup> of filling earth. The total surplus earth is 806,800 m<sup>3</sup>, which will be transported to an approved spoil disposal site.<sup>19</sup> (**Table V-2**).

|                                 |                        |          | Exe    | xcavation |       |          | Filling |       |          |                |
|---------------------------------|------------------------|----------|--------|-----------|-------|----------|---------|-------|----------|----------------|
| ltem                            |                        | Top soil | Earth  | Stone     | Spoil | Subtotal | Earth   | Stone | Subtotal | Spoil disposal |
| Site                            | Top soil removal       | 9.49     | -      | -         | -     | 9.49     | _       | _     | -        |                |
| leveling                        | Excavation and filling | -        | 113.22 | 55.39     | 1     | 168.61   | 62.00   | 55.39 | 117.39   | 51.22          |
|                                 | Sub-total              | 9.49     | 113.22 | 55.39     | 1     | 178.10   | 62.00   | 55.39 | 117.39   | 51.22          |
| Buildings                       | Foundation works       | -        | 0.88   | 0.43      | -     | 1.31     | 0.34    | 0.28  | 0.62     | 0.69           |
|                                 | Basement work          | -        | 5.29   | 2.59      | -     | 7.88     | -       | -     | -        | 7.88           |
|                                 | Structure              | -        | -      | -         | 0.61  | 0.61     | -       | -     | -        | 0.61           |
|                                 | Sub-total              | 9.49     | 119.39 | 58.41     | 0.61  | 187.90   | 62.34   | 55.67 | 118.01   | 60.40          |
| Road cons                       | struction              | -        | 54.67  | 26.74     | -     | 81.41    | 34.76   | 26.74 | 61.50    | 19.91          |
| Water supply and drainage works |                        | -        | 0.48   | -         | -     | 0.48     | 0.29    | -     | 0.29     | 0.19           |
| Workers camps                   |                        | -        | -      | -         | 0.18  | 0.18     | -       | -     | -        | 0.18           |
| Total                           |                        | 9.49     | 174.54 | 85.15     | 0.79  | 269.97   | 97.39   | 82.41 | 179.80   | 80.68          |

Table V-3: Earth Balance of Constructions (Unit: 10,000 m<sup>3</sup>)

Source: Domestic EIS and WSCP.

94. **Mitigation of impacts on soil**.<sup>20</sup> The construction sites in the campus are relatively small and the impacts on soil will be mitigated through a number of remedial measures which are defined in the EMP. The following mitigation measures defined in the EMP shall be included in construction contracts and the site-EMPs, to be developed by contractors:

(i) Soil erosion. If soil excavation cannot be avoided during rainy season or at any time of the year when rainstorms are likely, temporarily exposed slope surface should be covered, e.g. by tarpaulin. Arrangements should be in place to ensure that adequate surface protection measures can be carried out well before the arrival of rainstorm. Since disturbed areas are relatively small, the plan can be an overlay to the site plan showing how runoff will be controlled at site perimeter to control soil and water runoff, and how disturbed areas will be reclaimed.

<sup>&</sup>lt;sup>19</sup> The approved spoil disposal site is located 200m north of the Chengbi campus. The site was confirmed in the WSCP approved by Baise Municipal Water Resource Bureau on 6 May 2010 (Baise Shuibao-2010/13). The total disposal capacity is 1.0 million m<sup>3</sup>. Drainage ditches have been constructed and the re-vegetation and ecological restoration plan is available.

<sup>&</sup>lt;sup>20</sup> These measures are defined more precisely in the WSCP approved by Baise Municipal Water Resource Bureau, May 2010 (Doc. No. Baise Shuibao-2010/13).

Soil contamination. (a) Store small amount of chemicals/hazardous products at short time and waste on impermeable surfaces in secure, covered areas; (b) Remove all construction wastes from the site to approved waste disposal sites; (c) Establish Spill Management Plan; (d) Provide spill cleanup measures and equipment at each construction site; and (e) Conduct training in emergency spill response procedures.

95. **Slope protection, landslide risk mitigation.** During the PPTA, different methods for slope protection have been evaluated and selected. Three schemes ware defined in the FSR based on the slope conditions and the findings of the geological assessment report (**Figure V-2** and **Figure V-3**). The slope protection works will include: (i) Design I – natural vegetation slope protection (in blue); (ii) Design II – gravity retaining wall + vegetation slope protection (in pink); and (iii) Design III – arched concrete-framed vegetation slope protection (in red). The area of slope protection is 40,606 m<sup>2</sup> in total, and the designs comply with the PRC's Standard Drawings for Retaining Walls and Slope Protection of 04J008.



Figure V-2: Potential Landslide Sections in the Campus



Figure V-3: Proposed Construction Methods for Slope Protection



Figure V-4: Arch Concrete-Framed Vegetation Slope Protection (Design III)



Figure V-5: Natural Vegetation Slope Protection with Intercepting Drain (Design I)

96. **Impacts on surface and groundwater.** Since the buildings to be constructed are located on higher elevation within the campus, the FSR and EIS predict that no permanent site drainage will be needed. However, site drainage will be required for some foundation construction. The pumping will be temporary and localized, with no long-term impact on groundwater aquifer. The major risk to groundwater and surface waters is through spills of dangerous substances, and inappropriate construction waste management. The potential risks to surface and groundwater will be mitigated through a number of measures defined in the EMP, which will be incorporated in construction contracts and clearly defined in site-EMPs to be developed by the contractors:

(i) Construction wastes and materials (e.g. fuel) shall be properly contained during construction. Wastes shall be removed from the construction sites and taken to approve spoil disposal site timely.

- (ii) Water collection basins and sediment traps shall be installed in all areas where construction equipment is washed.
- (iii) Wastewater generated from the washing down of concrete mixers and drum mixers and similar equipment should wherever practicable be recycled. The discharge of wastewater should be kept to a minimum. Surplus wastewater and wastewater generated from building construction activities, including concreting, plastering, cleaning of works and similar activities should be discharged in to sewer after removal of solids in a silt removal facility.
- (iv) Sewage from temporary toilets, kitchens and similar facilities should be stored in an on-site facility (such as septic tank), emptied regularly and transported to a designated wastewater treatment plant for further treatment.

97. In Chengbi campus, there will be a pond system (3 interconnected ponds, 2.2 ha in total) and a small stream (600 m long and 10-15 m wide and 2 m deep) running through the campus. The waterway is designated for purposes of campus landscaping and storm water drainage (the total storage capacity of lakes and stream is 141,000 m<sup>3</sup>). The works on the pond system and stream are not included in the project scope (constructed during Phase 1). Water quality monitoring will be conducted periodically to confirm compliance with surface water quality standards.

98. **Impact on drinking water source protection zone (Chengbi Lake).** The proposed project will have no negative impact to the protected drinking water source: Chengbi Lake (Chengbi reservoir) is the drinking water source of Baise City, which is located 4.1 km north of the Chengbi Campus. The campus is located 270 m east of Chengbi River (Figure V-6), downstream of the reservoir. The campus is not located within the water source protection zones (Grade I and II zones). All project activities during construction and operation will be merely confined to the campus boundaries, downstream of the water source protection zones. The sewage pipeline and sewage pumping station that will connect the new campus to the city's sewer network and the wastewater treatment plant (WWTP) will be completed by September 2014, i.e., prior to commencement of project implementation.



Figure V-6: Location and Distance between the Drinking Water Source and the Campus (source: the EIA Institute)

99. **Impacts on air quality.** Minor temporary air quality impacts during the construction stage of the project are anticipated due to fugitive dust generation in and around the campus. Minor increases in the level of nitrogen oxides ( $NO_x$ ) and sulfur dioxides ( $SO_2$ ) from construction vehicles and machineries are expected. These impacts will be localized and temporary, but could affect the construction workers as well as students and faculties in the existing BVS campus, that is 200 m away from Chengbi campus. The potential impacts on air quality will be mitigated through a number of activities defined in the EMP, to be reflected in site-EMPs of contractors. The civil works contracts will specify the following:

- (i) Water shall be sprayed on construction sites where fugitive dust is generated.
- (ii) Fuel & chemicals shall be covered and stored to minimize emissions.
- (iii) Trucks carrying earth, sand or stone shall be covered with tarps or other suitable cover to avoid spilling.
- (iv) Construction vehicles and machinery shall be maintained to a high standard to ensure efficient fuel-burning.
- (v) Contractors and Baise University (through its PIU) shall regularly consult students and staff of the Chengbi Campus, the BVS campus, as well as nearby residents to identify concerns, and implement additional measures as necessary.
- (vi) Perimeter fences shall be erected at each construction site prior to excavation works to limit access to the construction site and control fugitive dust emissions. The fence shall be at least 2 m high. The perimeter fence will have cumulative benefits of dust mitigation, noise diffusion and community health and safety.
- (vii) Regular air quality monitoring (PM<sub>10</sub>, TSP) shall be undertaken by a licensed institute during construction works in around the campus in accordance with the environmental monitoring plan.

100. **Solid waste management.** Inadequate disposal of construction wastes could have adverse impacts on soil, water and health of workers and the students and staff of the Chengbi and BVS campuses. Waste streams will include inert construction wastes (soil, debris, residual concrete etc.), municipal solid wastes (MSW, construction workers' food and packaging wastes from construction consumables) and potentially hazardous wastes (fuel containers, oil filters, oily rags etc.). The updated domestic EIS estimates that, during the construction period, there will be 200 workers on the site in average. The MSW per worker will be 0.6 kg/d, thus the daily MSW increase will be 120 kg/d, which will be disposed to the municipal landfill through the existing MSW collection and disposal system.

101. The potential impacts arising from solid waste production and disposal will be mitigated through a number of activities defined in the EMP. In compliance with "*Construction Waste Management in Baise*"<sup>21</sup>, construction waste must be transported by licensed contractors and transport vehicles must be cleaned timely. the following waste management and impact mitigation measures have been defined in the EMP, which shall be defined in construction contracts and the site-EMPs, to be developed by contractors:

- (i) Maximize reuse/recycling of construction waste.
- (ii) Provide appropriate waste storage containers for workers' municipal garbage.
- (iii) Install confined storage points of solid wastes, regularly haul to an approved disposal site.
- (iv) Use licensed contractors to remove wastes from the construction sites.
- (v) Prohibit burning of waste.

102. **Noise.** The major sources of noise are movement of construction vehicles, haulage of construction materials to the construction sites and the noise generating activities at the construction sites. Foundation works, concrete mixing and material movements are the primary noise generating activities and will be uniformly distributed over the entire construction period. Each construction machine can be treated as one point noise source. The point source noise attenuation formula and noise superimposed formula have been used to predict the major construction machinery noise impacts during construction.

#### Point source noise attenuation formula:

$$L_2 = L_1 - 20 \lg \left(\frac{r_2}{r_1}\right) - \Delta L$$

Noise superimposed formula:

$$L_{eqs} = 10 \left( \sum_{i=1}^{n} 10^{0.1 L_{eqi}} \right)$$

Where,

L1,L2 - the noise value at points of r1.r2 (dB(A));

r1,r2 - the distances of the points to the noise source(m);

 $\Delta L$ - Houses, trees and other shield contributions to noise attenuation value (dB(A));

Leqs -The equivalent sound level value at the prediction point (dB(A));

Leqi - Equivalent sound level of the i-th point source on the prediction point (dB(A)).

<sup>&</sup>lt;sup>21</sup> The document No "Baise\_Gov\_2010-135, 27 August 2010".

103. Without consideration of the construction fence contribution to machinery noise attenuation (i.e., the  $\Delta L=0$ ), machinery attenuation only rely on spatial distance natural attenuation, the intensity and scope of the noise caused by the project have been modeled (**Table V-3**).

| Major construction                      |      |      |          |           |        |       | Dist<br>GB1252 | ance to meet<br>3-2011 standard |
|---|------|------|----------|-----------|--------|-------|----------------|---------------------------------|
| machinery                               |      |      | Predicti | ive noise | values |       |                | (m)                             |
| Distance from machine                   | 10 m | 20 m | 40 m     | 80 m      | 160 m  | 200 m | day            | night                           |
| Loader                                  | 78.0 | 71.9 | 65.9     | 59.9      | 57.2   | 56.1  | 53             | 225                             |
| Excavator                               | 78 0 | 71.9 | 65.9     | 59.0      | 56.6   | 56.0  | 53             | 225                             |
| Bulldozer                               | 78.0 | 71.9 | 65.9     | 59.9      | 57.2   | 56.1  | 53             | 225                             |
| Pneumatic hammer, pneumatic drills      | 88.0 | 81.9 | 75.9     | 69.9      | 59.1   | 57.8  | 120            | 359                             |
| Air compressor                          | 88.0 | 81.  | 75.9     | 69.9      | 59.1   | 57.8  | 120            | 359                             |
| Static pressure piling                  | 78.0 | 71.9 | 65.9     | 59.9      | 57.2   | 56.1  | 53             | 225                             |
| Tower crane                             | 73.0 | 66.9 | 58.9     | 54.9      | 54.2   | 48.9  | 30             | 159                             |
| Bar Straightening Machine               | 78.0 | 71.9 | 65.9     | 59.9      | 57.2   | 56.1  | 53             | 225                             |
| Stone cutting machine                   | 83.0 | 79   | 70.9     | 64.9      | 57.9   | 57.1  | 90             | 292                             |
| Chainsaw                                | 73.0 | 66.9 | 60.9     | 54.9      | 57.2   | 56.1  | 53             | 159                             |
| Hammer                                  | 73.0 | 66.9 | 60.9     | 54.9      | 57.2   | 56.1  | 53             | 159                             |
| Multi-function woodworking plane        | 83.0 | 76.9 | 70.9     | 64.9      | 57.9   | 57.1  | 92             | 292                             |
| All machinery operated at the same time | 93.1 | 87.0 | 81.0     | 75.0      | 72.6   | 68.2  | 230            | 430                             |

| Table V-4: Predictive noise levels of construction machiner | v with various distances ( | Unit: dB(A)) |
|---|----------------------------|--------------|
|   | J                          |              |

Source: Updated domestic EIS Report, June 2014.

104. **Table V-4** shows that for construction machinery noise in the unobstructed case, single noise source, the impact zone at daytime will be 30-159 m distance and at night will be 159-359 m (i.e., distance to meet the requirements of *Construction Site Boundary Environmental Noise Standards*, GB12523-2011). If all of the machinery and equipment operate at the same time, the distance increases to 230 m at daytime and 430 m at night.

105. Contractors will be required to regulate their construction activities and implement the following mitigation measures to ensure compliance with the relevant provisions of the PRC Environmental Noise Pollution Prevention Ordinance, GZAR's Environmental Noise Pollution Control Ordinance (issued in 1993) and *Baise Environmental Noise Pollution Control Ordinance* (revised in 2008):

- (i) Nighttime works should only be conducted in exceptional cases, and a permit should be obtained for that purpose. Potentially affected people including students and staff on the New Chengbi Campus and the BVS campus should be informed in advance.
- (ii) Maintain equipment and machinery in good working condition; undertake regular equipment maintenance, ensure compliance with PRC standard of GB 12523-2011.
- (iii) Locate sites for concrete-mixing and similar activities at least 300 m from school buildings where classes take place on the Chengbi and BVS campus.
- (iv) Monitor noise within the campus and at nearby sensitive areas at regular intervals (as defined in the monitoring plan).
- (v) Install temporary anti-noise barriers to shield buildings where non-compliance with Category I in Environmental Quality Standards for Noise (GB3096-2008) is monitored.
- (vi) Seek suggestions from Baise University and BVS management and potentially affected sensitive receptors to reduce noise annoyance. Disseminate information on procedure of

#### handling complaints through the GRM.

106. **Impact on ecological resources.** As described in para 91 (Environment Baseline), the ecosystem within the New Chengbi Campus can be characterized as a shrub and grassland ecosystem influenced by strong human disturbance, with low diversity of plant species. Vegetation within the area belongs to the sub-tropical monsoon evergreen broad-leaf forest, and consists mainly of evergreen shrubs as well as fruit trees (mango, litchi, banana). Field investigations have established that there are no threatened or endangered flora and fauna species within the project's direct area of influence. Therefore, no adverse impact on such species is likely to occur during the construction activities. All sites will be re-vegetated after construction. According to the campus master plan, about 10,000 trees and bushes, and 10ha of grass and flowers will be planted by using domestic fund after the construction completion. Only native, non-invasive species will be selected within the campus.

# 2. Socioeconomic Impacts

107. Land acquisition and resettlement. The project will not involve land acquisition and resettlement, and is categorized C for resettlement. Output 2 of the project will be implemented on the land of Chengbi Campus that the implementing agency has had right to use since 1970. The implementing agency with support of a local independent agency prepared a due diligence report (DDR) on the land property, use rights and affected ground attachments. ADB approved the DDR on June 17, 2014. Should there be any change in scope or other changes with unanticipated resettlement impacts during project implementation, land acquisition and resettlement activities will be implemented in accordance with ADB's SPS.

108. **Economic displacement**. There will be no economic displacement or impacts on livelihoods through environmental media associated with the project.

109. **Loss of physical cultural resources**. There is no record of cultural heritage or archaeological sites on the campus. Should archaeological objects be discovered during site works, the government requirements for excavating and preserving those items will be strictly followed. The mitigation measures will include immediate suspension of construction activities if any archaeological or other cultural relics are encountered. Baise Municipal Cultural Relic Bureau (CRB), as well as Baise University (as the implementing agency) and PMO, will be promptly notified, and construction will resume only after thorough investigation and with the permission of the CRB. This requirement is included in the EMP.

110. **Risks to community health and safety (including students and staff).** Construction sites will be located 200 m east of the existing BVS campus, representing a minor threat to about 2,300 students' health and safety. Phase I of the New Chengbi Campus will be in operation by the time of project implementation, with some 4,000-5,000 students and staff expected during peak school season. The potential impact on community health and safety will be mitigated through a number of activities defined in the EMP (in addition to the measures defined to control noise and dust). The contractors will implement the following measures:

- (i) Traffic management. Contractors will prepare temporary traffic control and operation plans in consultation with the management of Baise University and representatives of the New Chengbi Campus and the BVS campus, as well as local traffic police prior to construction. The plans shall include provisions for diverting or scheduling construction traffic to avoid peak traffic hours, avoiding periods of main teaching activities such as exams, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signage. Contractors shall designate staff members to control traffic during on-school and off-school hours.
- (ii) **Access to construction sites**. The construction sites will be made secure, discouraging access through appropriate fencing. Heavy machinery will not be used after day light and

all such equipment will be returned to its overnight storage area/position.

(iii) **Information and communication**. In conjunction with the Baise University management and the PIU, the contractors shall hold a meeting prior to commencing construction to discuss issues associated with ensuring the safety of students and staff, in the vicinity of the construction site. Clear signs will be placed at construction sites in view of the people at risk (including students, staff and nearby communities), warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc. and raising awareness on safety issues.

111. **Occupational health and safety**. The civil work contractors will implement adequate precautions to protect the health and safety of construction workers. Each contractor will prepare a site-EMP on the basis of the EMP. It will be submitted to the Baise University and PMO, as well as Baise Municipal Labor Bureau for review and appraisal. In terms of health and safety, the site-EMP will include the following provisions:

- (i) **Staffing.** Each contractor will appoint at least one staff to implement and supervise the implementation of the Site-EMP and the performance of subcontractors, if any.
- (ii) **Clean water.** Provide a clean and sufficient supply of fresh water.
- (iii) **Sewage and wastewater.** Provide an adequate number of latrines and other sanitary arrangements at the site and work areas, and ensure that they are cleaned and maintained in a hygienic state.
- (iv) **Solid waste.** Garbage receptacles at construction site, which will be periodically cleared to prevent outbreak of diseases will be setup.
- (v) **Personal protection.** Provide personal protection equipment (PPE), such as safety boots, helmets, gloves, protective clothing, goggles, and ear protection, in accordance with relevant health and safety regulations, for workers.
- (vi) Emergency preparedness and response. An emergency response plan to take actions on accidents and emergencies, including environmental and public health emergencies associated with hazardous material spills and similar events will be prepared, and submitted to the implementing agency and the PMO for review and appraisal. A fully equipped first-aid base at each construction site will be organized.
- (vii) **Records management.** A Records Management System that will store and maintain easily retrievable records protected against loss or damage will be established. It will include documenting and reporting occupational accidents, diseases, and incidents. The records will be reviewed during compliance monitoring and audits.
- (viii) **Safety communication.** Ensure that safety, rescue and industrial health matters are given a high degree of publicity to all persons regularly or occasionally on the site. Posters drawing attention to site safety, rescue and industrial health regulations will be made or obtained from the appropriate sources and will be displayed prominently in relevant areas of the site.
- (ix) Training, awareness, and competence. Train all construction workers in basic sanitation and hygiene issues, general health and safety matters, and on the specific hazards of their work. To minimize the risk of conflicts between workers and staff/students of the schools, contractors shall also implement HIV/AIDS and sexually transmitted infections (STIs) awareness and prevention training for all employees, and together with the local centers of disease control and the school management, disseminate information on the risks, hazards, impacts and prevention know-how on HIV/AIDS and STIs among the staff/students, workers on the construction sites, students and faculties of Baise University, and local community.

112. **Labor standards and rights.** In order to ensure that contractors adhere to core labor standards and workers' rights, Baise University will ensure that all construction contracts will include provisions to

require the contractors to (i) provide equal pay for equal work, regardless of gender or ethnicity; (ii) provide the timely payment of wages; (iii) use local unskilled labor, as applicable, (iv) comply with core labor standards and the applicable labor laws and regulations, including stipulations related to employment, e.g. health, safety, welfare and the workers' rights, and anti-trafficking laws; and (v) not employ child labor. Baise University will further ensure that contractors maintain records of labor employment, including the name, ethnicity, age, gender, domicile, working time, and the payment of wages. These requirements shall be clearly specified in all relevant bidding documents.

113. **Utilities provision interruption.** At the campus construction site, construction may require relocation of local utilities such as water, sewers and communication cables. Temporary suspension of services (planned or accidental) can affect the nearby BVS campus' daily operation. The potential impacts on utilities provision will be mitigated through a number of activities defined in the EMP (and flagged as assurance in the project agreement), to be incorporated in construction contracts and the site-EMPs of the contractors:

- (i) Contractors shall assess potential disruption to services and identify risks before starting construction.
- (ii) If temporary disruption is unavoidable the contractor will develop a plan to minimize the disruption and communicate the dates and duration in advance to all affected people, in conjunction with the Baise University management.

# E. Environmental Impact and Mitigation Measures during Operation

No major environmental impacts are anticipated during the operation of project buildings and 114. facilities. The project buildings and facilities will create emissions (summarized in Table V-5 and discussed below), but these can easily be addressed by integrating new buildings and facilities into the campus' and the municipal services (water supply, MSW disposal, and wastewater collection and discharge). To ensure healthy and safe campus management practices, the project buildings and facilities will comply with relevant design standards and codes for energy-efficient, safe and green public buildings, including but not limited to: GB/T50378-2006 (Evaluation Standard for Green Buildings); GB 50176-1993 (Thermal Design Code for Public Buildings); GB 50189-2005 (Energy Conservation Design for Public Buildings); GB 50011-2010 (Building Seismic Design Code); GB 50016-2006 (Code of Design on Building Fire Protection and Prevention); Building Energy Saving Design Standards in Guangxi Zhuang Minority Autonomous Region (DB45/221-2007), and other applicable national design codes. The project will also adhere to PRC green public procurement policies for equipment and appliances procurement.<sup>22</sup> The project will adopt the technologies included in the "Key Technologies promoted in Guangxi Province", such as: (i) new grade III steel; (ii) thermal insulation concrete hollow bricks; (iii) new waterproof technologies. The two on-site wastewater treatment plants (associated facilities) will be operated and maintained by the Comprehensive Affairs Bureau of Baise University. Effluent quality monitoring will be conducted periodically by the Baise EPB to confirm compliance with the national effluent standard. Treated effluent will be used for landscaping purposes in the campus surface water system.

115. The project will also support Baise University in defining a campus sustainability strategy (by 2015), and establishing a sustainability center (by 2017), to be coordinated by Baise University's Comprehensive Affair Department. The sustainability center will build on ongoing sustainability programs and initiatives of Baise University, and aim at ensuring sustainable environmental path for Baise University. The center will aim at greening campus practices, curriculum development, and community awareness, with a strong focus on low-carbon, energy- and resource-efficient campus management.

<sup>&</sup>lt;sup>22</sup> A rating weight will be assigned to equipment that meets green procurement standards during bid evaluation.

| ltom            | Lleare/Dreducere      | Dellutente                  | Anticipated amount                  | Abatement and conservation                       |
|-----------------|-----------------------|-----------------------------|-------------------------------------|--|
| Item            | Users/Producers       | Pollutants                  | Anticipated amount                  | measures   |
| Water supply    | All buildings         |                             | 4,450 m°/d during                   | Reuse of treated wastewater                      |
|                 |                       |                             | school season, and 470              | (2,000 m <sup>°</sup> /d, class 1A, disinfected) |
|                 |                       |                             | m <sup>°</sup> /d during vacation.  | for campus landscaping.                          |
|                 |                       |                             |                                     | Water conservation promoted                      |
|                 |                       |                             |                                     | through application of water saving              |
|                 |                       |                             |                                     | appliances (see below), awareness                |
|                 |                       |                             |                                     | raising program coordinated by                   |
|                 |                       |                             |                                     | Sustainability Center.                           |
| Domestic        | Dormitories,          | SS, COD, TP,                | 3,560 m <sup>3</sup> /d during      | In the school season, 2,000 m <sup>3</sup> /d    |
| Wastewater      | teaching and training | NH <sub>3</sub> -N, E.coli  | school seasons and 375              | will be treated in the on-site                   |
|                 | buildings             |                             | m <sup>3</sup> /d in vacations      | WWTP; the remaining 1,500 m3/d                   |
|                 | (bathrooms)           |                             |                                     | will be discharged into the                      |
|                 |                       |                             |                                     | municipal sewer and treated at the               |
|                 |                       |                             |                                     | municipal WWTP; during                           |
|                 |                       |                             |                                     | off-season, wastewater will be                   |
|                 |                       |                             |                                     | treated in the on-site WWTP.                     |
| Municipal Solid | Municipal SW          | Domestic Waste              | 15 t/d during school                | Reduce and reuse as possible (3R                 |
| Waste           |                       |                             | season and 2 t/d in                 | program coordinated by                           |
|                 |                       |                             | off-season (4,175 t/a)              | Sustainability Center); landfilling by           |
|                 |                       |                             |                                     | sanitation contractor.                           |
| Noise           | Fan, air conditioners | dB(A)                       |                                     | Low noise equipment and                          |
|                 |                       |                             |                                     | Insulation facilities.                           |
| Air emissions   | Cooking oil fumes     | Benzopyrene, PM,            |                                     | High efficient purification                      |
|                 | from the canteens in  | CO.                         |                                     | equipment and insulation facilities              |
|                 | the campus            |                             |                                     |  |
| Electricity     | All buildings         | CO <sub>2</sub> eq          | 10-20 million kWh/a                 | Energy saving promoted through                   |
|                 |                       |                             | electricity consumption;            | application of photo-voltaic power               |
|                 |                       |                             | 9,000t-18,000t CO <sub>2</sub> eq/a | generation, heat pumps for                       |
|                 |                       |                             |                                     | air-conditioning (heating, cooling),             |
|                 |                       |                             |                                     | application of energy-efficient                  |
|                 |                       |                             | 3.                                  | building materials, etc.                         |
| Stormwater,     | Entire campus         | SS, COD, NH <sub>3</sub> -N | 300,000 m³/a                        | The artificial pond system and                   |
| surface water   |                       |                             |                                     | stream will be detention ponds for               |
|                 |                       |                             |                                     | storm water.                                     |

#### Table V-5: Main Resource Use and Emissions, Proposed Abatement, and Conservation Measures

Source: Domestic EIS Report.

116. **Operational noise.** Noise sources during campus operation include air conditioning and ventilation systems, on-campus motorized traffic, as well as pumps, air compressors, and sludge dewatering machine (spin-driers) in the onsite WWTP. In general, operational noise of equipment at the WWTP, and the air conditioning systems will be about 80-85 dB (A) and 60-75 dB (A), respectively. The mitigation measures include (i) proper Installation, maintenance of noise and vibration control facilities on air conditioning and ventilation systems; (ii) all noise-emitting machinery and equipment in the onsite WWTP will be installed in a sound-proof room; and (iii) installation of ventilated sound insulation windows on the buildings along the boundaries of campus if needed. Motorized transport within the campus will be controlled to avoid disturbing class. Night-time traffic will be strictly controlled.

117. **Indoor air pollution.** Indoor air pollution in the new campus is mainly a result of improper decoration. Decoration materials, such as paints, strippers, sealants, glues, adhesives, and carpets emit volatile organic compounds (VOC). Toxic formaldehyde causes short-term and long-term health issues. The mitigation measures include: (i) in addition to ensure the decoration materials that the new campus used are water-based or formaldehyde-free products, an indoor environmental monitoring after completion of decoration works will be conducted in the framework of project acceptance check; (ii) make sure to air out newly painted areas and carpets after decoration; and (iii) take remedy measures if the monitoring data exceed the national standard of GB50325-2001.

118. **Waste gas emissions from cooking**. Waste gas will be produced in the canteens of the campus. Cooking oil fumes will be emitted through the standpipe chimney leading to the building top. Kitchen cooking oil fume purification devices will be installed for purification of the fumes generated. The emissions will satisfy the requirements of the PRC's national Standard for Cooking Oil Fume Emission Control (GB18483-2001).

119. **Laboratory waste.** The project will support the establishment of chemistry, physics, and biology practice laboratories for the training of students. Although in small quantities and of low toxicity<sup>23</sup>, laboratories that use chemicals inevitably involve health and safety risks, and produce chemical waste that must be properly disposed of. Toxicity and the amount of chemicals, and chemical waste that is generated, must be controlled and minimized. For that purpose, a laboratory health and safety management plan will be established by Baise University for each laboratory. The plan will be developed based on national regulations and/or international best practice.<sup>24</sup> The plan will define a list of chemicals allowed for training purposes, chemicals storage and handling protocols, waste management plan, responsibilities of teachers and students, emergency response procedures, etc. All laboratories will be equipped with personal protective equipment and emergency equipment in compliance with PRC health and safety regulations.

120. **Water supply.** The campus will include 17,500 students and 1,500 staff members at full capacity. The maximum daily water demand is estimated to be 4,450 m<sup>3</sup> including water supply for canteens, class rooms, offices, students bathrooms, student dormitories, laboratories, as well as for landscaping, dust control, etc. Water will be supplied through the Baise municipal water supply system. Two DN300 mm pipes connect the campus to the municipal water supply system. The water supply to the proposed Chengbi Campus will be Chengbei WSP, with a capacity of 60,000 m<sup>3</sup>/d.<sup>25</sup> The water source of the Chengbei WSP is Chengbi Lake Reservoir, and the water quality of the water supply system has sufficient capacity to supply water to the campus (maximum 4,450 m<sup>3</sup>/d for 19,000 students and staff in school season). The increase in water demand as a result of the new buildings can easily be met through the municipal water supply services. The incremental water use will not have an impact on other water users within the water supply service area. Water saving considerations have been incorporated into the FSR, including:

- (i) Installation of low flow and no touch faucets. The faucets are sensor-operated, turning on when hands are present and off when hands move away. This helps limit water flow and prohibits the spread of germs from touching the faucet handle. Low-flow faucets use an aerator to mix air in the water, reducing the flow necessary to achieve the same wetness by about two-third.
- (ii) **Use of dual-flush toilets.** Dual-flush toilets use less water to flush urine (2.5-3 liters per flush) and more for faeces (5-6 liters per flush).
- (iii) **Use of water-free urinals.** Water-free urinals do not flush, so they use no water. An internal trap is filled with a liquid chemical with lower density than urine. The urine sinks below it and is directed down the drain by gravity, eliminating odor from entering the restroom. Each water-free urinal can save up to 148 m3 of water each year as compared

<sup>&</sup>lt;sup>23</sup> In accordance with international best practice, chemicals of hazardous nature greater than their potential usefulness in school programs shall not be used, covering physical hazards (i.e., flammability, explosive propensity, reactivity, corrosivity) and health hazards (i.e., toxicity, carcinogenicity).

 <sup>&</sup>lt;sup>24</sup> U.S. National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Department of Health and Human Services. 2006. School Chemistry Laboratory Safety Guide. Accessible from: <a href="http://www.cpsc.gov//PageFiles/122344/NIOSH2007107.pdf">http://www.cpsc.gov//PageFiles/122344/NIOSH2007107.pdf</a>.

 <sup>&</sup>lt;sup>25</sup> There are three water supply plants (WSP) in Baise, including Dongsun WSP, Chengbei WSP and Chengdong WSP, with the total capacity of 130,000 m<sup>3</sup>/d.

to a traditional urinal.

- (iv) **Wastewater reuse.** Effluent from the on-site WWTP will be reused for campus landscaping, reducing fresh water resource requirements by approximately 1,500-2,000 m<sup>3</sup>/d.
- (v) Other **water conservation programs and initiatives** coordinated by the Sustainability Center, e.g. through awareness raising programs.

Wastewater treatment and reuse system. The campus will produce 3,560 m<sup>3</sup>/d and 375 m<sup>3</sup>/d 121. of domestic wastewater, respectively during school season and off-season. Wastewater from campus activities will be pre-treated by underground septic tanks first before discharging into the campus sewer pipeline. On-site wastewater treatment and reuse facilities will be constructed on the campus (Phase 1), with a total treatment capacity of 2,000 m<sup>3</sup>/d. The designed treatment process is A2/O (Anaerobic-Anoxic-Oxic), and treated effluent will meet the National Class 1-A Pollutants Discharge Standard for Municipal Wastewater Treatment Plants (GB18918-2002). The effluent will be used for landscaping. Two WWTP with a capacity of 1,000 m3/d each will be installed in the east and west side of the campus (Figure V-7). The anticipated COD<sub>cr</sub> removal and tap water conservation are 75 tons and 6.0 million m<sup>3</sup> annually according to the FSR. The facility will be equipped with odor and noise control facilities/equipment, and the anticipated noise level outside the facility is 50dB(A). The treatment process is shown in Figure V-8, and the designed pollutants removal rates are listed in Table V-6. The two on-site wastewater treatment plants (associated facilities) will be operated and maintained by the Comprehensive Affairs Bureau of BU, which will also conduct regular internal effluent quality monitoring (for basic parameters only, including SS, BOD5, NH4-N, E.coli). Compliance monitoring will be conducted periodically by the Baise EPB. Treated effluent will be used for landscaping purposes in the campus surface water system.



Figure V-7: Campus sewer system and on-site wastewater treatment plants

| Pollutant    | COD <sub>cr</sub> | BOD₅ | NH <sub>3</sub> -N | ТР   | SS   |
|--------------|-------------------|------|--------------------|------|------|
| Influent     | 300               | 150  | 30                 | 4    | 150  |
| Effluent     | ≤50               | ≤10  | ≤5                 | ≤0.5 | ≤10  |
| Removal Rate | 84%≥              | 94%≥ | 84%≥               | 88%≥ | 94%≥ |

Table V-6: Removal Rates of Major Pollutants by the onsite WWTP (mg/L)

Source: Feasibility Study Report, June 2014



#### Figure V-8: Treatment Process of the Compact Wastewater Treatment Plants in the Campus

122. **Off-site wastewater treatment.** A backup system is currently being implemented on the campus to convey wastewater to the municipal sewer and the central wastewater treatment plant in case of malfunctioning or overload of the on-site WWTP (**Figure V-9**). A 2.4 km (with diameter of 400 mm) sewage pipeline is currently being constructed from the BU Chengbi Campus to the municipal WWTP. This also includes the construction of a sewage pumping station, with the capacity of 3,000 m<sup>3</sup>/d (by 2015) and 5,000 m<sup>3</sup>/d (by 2020), respectively. The service population and area of the sewage pipeline and pumping station are 40,000 and 155.09 ha, respectively. The construction is being conducted using domestic funding and will be completed by the end of September 2014. Construction sites were visited and no environment, health and safety issues were identified. The pipeline is being implemented properly.



Figure V-9: Associated Sewage Pipeline and Pumping Station (from Chengbi Campus to the WWTP through Baise Tower Factory)

123. There is an existing WWTP in Baise City, located in the Industrial Zone at east of the urban area, with a total designed treatment capacity of 60,000 m<sup>3</sup>/d. The WWTP adopts a modified oxidation ditch treatment process. The effluent of WWTP complies with Class 1-B of the PRC Discharge Standard of Pollutants from Municipal WWTPs (GB18918-2002, see **Table V-7**). The WWTP was put into operation in March 2010 by Sino Environment Protection Group (a BOT project). The sewer network includes 22.4 km of sewer mains and four pumping stations. The existing WWTP has sufficient spare capacities to cope with the increased wastewater volume from Chengbi Campus during both construction and operation stages.<sup>26</sup>

| Parameter         | Quality of Current Influent<br>(average concentration) | Quality of Current Effluent (average concentration) | Class 1-B Standard<br>GB18918-2002 |
|-------------------|--|---|------------------------------------|
| COD <sub>cr</sub> | 500 mg/l   | ≤60 mg/l  | 60                                 |
| BOD₅              | 300 mg/l   | ≤20 mg/l  | 20                                 |
| SS                | 400 mg/l   | ≤20 mg/l  | 20                                 |
| TN                | 50 mg/l  | ≤20 mg/l  | 20                                 |
| NH3-N             | 35 mg/l  | ≤8 mg/l   | 8/15 <sup>27</sup>                 |
| TP                | 4 mg/l   | ≤1 mg/l   | 1                                  |
| рН                | 6-9  |   | 6-9                                |

Table V-7: Performance of the existing Baise Wastewater Treatment Plant

Source: Updated EIS Report, June 2014.

124. **Solid waste management.** During operation, the campus will generate MSW such as paper, cardboard, plastics, and general refuse by routine activities. The amount of MSW to be disposed (see Table V-4) can be reduced through the application of 3R (reduce, reuse, and recycle) methods. The Sustainability Center will identify options to 3R waste management in the campus, develop and implement a MSW management and minimization strategy. MSW shall be segregated into biodegradable and non-biodegradable wastes, biodegradable wastes will be used as fertilizers for landscaping and growing vegetables in the campus. Where recycling is feasible, these wastes will be stored in segregated bins and removed as required. Other solid wastes will be removed by sanitary

<sup>&</sup>lt;sup>26</sup> Wastewater volume predictions are 3,560 m<sup>3</sup>/d during school season and 375 m<sup>3</sup>/d off-season (vacation).

<sup>&</sup>lt;sup>27</sup> 8 mg/l for water temperature >12°C; and 15 mg/l for water temperature  $\leq$ 12°C.

contractors on a regular basis and disposed to designated municipal landfill site.

125. Waste collected on the campus will be collected by an accredited waste collection service provider, and disposed in the Baise landfill site, located at 10 km southwest of the Baise urban area. The existing MSW landfill is located 10 km southwest of Baise, with a capacity of 300 t/d (total capacity of 2.0 million m<sup>3</sup>, and a total area of 16.8 ha). The landfill is lined with HDPE geo-membrane for leachate control, and has separate storm water and wastewater drainage systems. The leachate is collected and treated with UASB-MBR-activated carbon process with a treated capacity of 200 t/d and effluent meeting Class II standard in *Municipal Solid Waste Landfill Pollutant Control Standard* (GB 16889-1997). The landfill was put into operation in May 2007, has a designed service life of 15 years and a remaining life of 7.3 years (until 2021). According to the updated FSR, a maximum of 15 t/d MSW during the school season and 2 t/d during off-season will be generated on the campus. The landfill was approved by Baise municipal EPB and the public sanitation bureau in 2005, and the environmental and ecological restoration plan is available. The landfill has sufficient capacity for disposal of the campus MSW.<sup>28</sup>

Operation and maintenance of the photovoltaic system. The photovoltaic system will be 126. installed and operated by a licensed company. System performance will be checked thoroughly after the installation is mechanically assembled. The contract will make clear that payment of work is conditional upon commissioning test, and adequate training to on-site staff for routine operation and maintenance works. Commissioning tests will be conducted by an independent group of experts, and will include but not be limited to the following: checks of the main components (communications, meteorological station, modules, wiring, inverters, interconnection, batteries, etc.), open circuit voltage, operating current and 30-day operating performance test. The company will be required to provide training to onsite personnel in charge of system inspections, to be conducted at regular intervals. Personnel will use checklists developed for these periodic maintenance activities to ensure that the inspections are thorough, safe and complete. Major repair works will only be conducted by a licensed company. Service personnel will be trained in health and safety matters, and will made aware of PPE required for a specific task (PPE includes fall protection, arc flash protection, fire-rated clothing, hot gloves, boots, and protective evewear, among other items). A PV system monitoring system including monitoring equipment and centralized management and information center will be established, to cover solar radiation, weather parameters, electricity generation from each power conditioner, battery status, etc.).

127. **Campus traffic management.** The campus traffic plan was critically reviewed during technical due diligence with support of the PPTA consultants, and was reviewed and strengthened in the revised FSR. According to the updated FSR, the main campus roads are laid out along the campus major axis from the entrance at Panbai Expressway on the west of the campus (**Figure V-10**). The Panbai Expressway is the main traffic corridor between Chengbi campus and the urban area of Baise, and the Baise University's existing campus. There are three types of campus roads that are being constructed in the framework of Phase 1 campus development, including a campus major road, campus branch roads, and campus walkways (Figure III-7). The campus major road (in red) has the cross section of 2+7+2 m, designed for 2 travel lanes and 2 sidewalks. The campus branch roads (in green) have a cross section of 4.5 m travel lanes for mixed transport modes, designed as pedestrian and NMT traffic priority roads, which can be used as emergency fire truck routes. Walkways (green) are for pedestrian only.

<sup>&</sup>lt;sup>28</sup> The updated FSR estimates that will implementation of the campus "3R" management system, MSW generation will be reduced to about 50%.



Figure V-10: Campus Traffic Plan

128. **Campus fire truck routes, emergency evacuation plan.** BMG has established Integrated Emergency Preparedness and Response System (EPRS) in August 2010. This system streamlines under one roof all the city's police and fire emergencies, paramedic ambulance responses and traffic accident reporting systems, along with other non-emergency public services that were previously managed by a variety of different administrative departments.

129. Baise University's campus safety and emergency preparedness and response system has been reviewed and strengthened during PPTA. The system will be linked to the city's EPRS. The fire evacuation design of buildings follows the "Architectural Design Code for Fire Protection" (GB50016-2006) and "Fire Protection Design for Tall Residential Buildings" (GB50045-95, revised in 2005). The key features of the campus's safety and emergency preparedness and response mechanism including forest fire warning system are presented in **Table V-8** below. The campus EPRS will be linked to the Campus sustainability center.

| Item         | Measure  |
|--------------|--|
| Firefighting | Proposed campus road widths are 9.5 -12.5 m and most of the turning radii are bigger than 11.0 m, which is           |
|              | adequate for firefighting requirements; a GIS forest fire warning system will be installed including (i) forest fire |
|              | sensors and network, which can detect forest fire within 100 m diameter scope in 10 seconds; (iii) firefighting      |
|              | BTS through GPRS wireless communication; and (iii) GIS fire early warning system.                                    |
| Emergency    | An emergency evacuation plan has been developed in the FSR. The emergency evacuation sites as well as                |
| Evacuation   | the emergency exits have been identified in the plan. As part of the Sustainability Center, Baise University         |
| Plan         | shall establish a designated safety and security unit in charge of the campus security and safety, develop an        |
|              | emergency evacuation plan, and conduct emergency evacuation drills and education program.                            |
| Campus       | A campus security monitoring system will be installed, including monitoring cameras, a network, and a                |
| security     | control center. The security system will be able to monitor and record the campus activities full time.              |

 Table V-8: Campus Safety Management

Source: Domestic FSR, June 2014.

130. Based on the campus planning and design, an emergency evacuation plan has been developed. The emergency evacuation sites as well as the emergency exits have been identified (**Figure V-11**). The campus fire truck routes are defined in the campus master plan, which defines access routes to all buildings within the campus.



Figure V-11: Campus Fire Truck Route and Emergency Evacuation Sites

131. **Campus landscaping, campus flooding.** Some 10,000 trees will be planted in the campus. A waterway including pond system will be built within the campus (Figure V-12, V-13) using domestic fund (Phase 1). The system will be fed through runoff from the campus catchment area, as well as reclaimed water from the onsite WWTP (up to 2,000 m<sup>3</sup>/d). A hydrological analysis and flood risk assessment has been conducted during FSR preparation, and the risk of flooding in the campus is considered small: The 1-in-50 years flood flow within the campus is estimated to amount 12.4 m<sup>3</sup>/s, while the maximum capacity of the campus discharging system is 23.8 m<sup>3</sup>/s, which is adequate to cope with a 1-in-50 years event. Water quality will be conducted regularly to confirm that quality of the man-made pond system complies with the Grade IV standard values of "Surface Water Environment Quality Standard" (GB3838-2002).



Figure V-12: Central Area of Campus

Figure V-13: Artificial Lake of Campus

132. **Campus sustainability strategy, sustainability center.** Under the loan implementation consultancy services of the ADB financed project, national campus sustainability planning specialist will support Baise University and its Comprehensive Affairs Bureau in defining a campus sustainability policy, and developing a sustainability center with clear strategic objectives, sustainability programs, institutional structure, terms of reference. The Sustainability Strategy and the sustainability center will cover the entire campus, including Phase 1 and Phase 2, as well as Phase 3 should this be implemented in future. Specifically, the expert will:

- Organize a seminar for Baise University senior management and relevant departments on (a) PRC policies and guidelines pertaining to green campus development, campus sustainability planning, the promotion of energy-efficiency, low-carbon and resource-efficient development; and (b) successful case studies in the PRC (Output: Seminar report, including documentation of successful case studies).
- (ii) Plan and facilitate (in collaboration with the Comprehensive Affair Bureau and the Teaching Affair Bureau) a participatory assessment of current and planned programs within the campus that aim at promoting campus sustainability, low-carbon development, energy-efficiency, resource-conservation, environmental awareness raising, sustainability in curriculum, and other sustainability initiatives *(Output: Assessment report)*.
- (iii) Facilitate the definition of a Campus Sustainability Policy based on an nationally recognized methodology, including formulation and agreement on policy vision; policy goals; policy targets and commitments (*Output: Campus Sustainability Policy Statement, endorsed by Baise University senior management*).
- (iv) Facilitate the creation of a governance structure ("Sustainability Center") within Baise University's Comprehensive Affair Department, including definition of (a) organization setup and terms of reference; (b) main sustainability pillars (e.g. green campus, green curriculum, green community; and (c) a roadmap with clearly articulated targets and measurable indicators (*Output: sustainability center, roadmap*).

(v) Develop outlines of sustainability policies for Baise University priority areas (e.g., energy policy, waste management policy, green procurement policy, environment awareness policy). (-> Output: draft sustainability policies for at least 2 priority areas).

# VI. INFORMATION DISCLOSURE AND PUBLIC CONSULTATION

#### A. Legislative Framework for Public Consultation

133. Public participation and consultation is an important environment safeguards requirement in the evaluation of project planning, feasibility study, design and implementation, it can directly reflect the public's perceptions on environmental quality in the project's area of influence. Relevant provisions in the Environmental Protection Law of PRC and the Regulations on the Administration of Construction Project Environmental Protection (Order of the State Council, No. 253) require that domestic environmental impact assessments shall solicit the opinions of units concerned and inhabitants of project construction sites. ADB's Safeguard Policy Statement (2009) also has detailed and strict requirements on meaningful consultation and information disclosure. The public consultation process for this project therefore followed both the PRC requirements and the ADB requirements.

134. Information disclosure and public consultation for the project have been conducted during preparation of the FSR, the domestic EIS and the project IEE. Information disclosure and consultation included internet disclosure (twice), informal communication with key stakeholders which included students, Baise University management and staff, nearby residents, local authorities; and through two questionnaire surveys conducted in 2010 and 2014, involving 60 and 93 respondents, respectively.

#### B. First Round of Public Consultation

135. Information about the project was first disclosed on 22 March 2010 on GZAR Government's website. Disclosed information included a description of the project scope, construction methods, main mitigation measures, as well as contact details of the PMO, Baise University, the EIA Institute, and Baise EPB. (**Figure VI-1**).

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| 第二、日本市市市市市市市市市市市市市市市市市市市市市市市市市市市市市市市市市市市市 | <ul> <li>第二百年等重建全集省现是年全省组织成在</li> <li>关于市次二百年建年1月代公務未述工業回路的</li> <li>特別集合案</li> <li>第二面動物系公司助大家等所起</li> <li>自治信空道好清明明和主任中有信任人大式供助</li> <li>較加整要求合理法法公共用</li> <li>第二面動物系が同時大家等所起</li> <li>約二面近面動力、加速時代、「市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面近面動力、加速時代、市市」</li> <li>第二面前代、加速時代、市市」</li> <li>第二面前代、加速時代、市市」</li> <li>第二面前代、市市」</li> <li>第二面前代、市市」</li> <li>第二面前代、市市」</li> <li>第二面前代、市市」</li> <li>第二面前代、市市」</li> <li>第二面前代、市市」</li> <li>第二面前代、市大市」</li> <li>第二面</li></ul> |

Figure VI-1: Information Disclosure in March 2010 (Source: updated domestic EIS, June 2014)

136. Potentially affected people were first consulted in March 2010 through the conduct of a questionnaire survey. Students and staff members of the existing BVS campus and some residents nearby the proposed New Chengji Campus were consulted. Questionnaires were distributed by the EIA Institute (GZAR Transport Design & Research Institute, who prepared the original EIS report in 2010) to

60 affected persons and beneficiaries from different age groups, gender, educational background, occupation and ethnicity. All questionnaires were completed and returned. Of the total consulted people, 77% supported the project, 23% had no opinion, and nobody was against the project (**Table VI-1**). The result above shows that most consulted people support the project, because they believe the project will significantly increase employment opportunities in Baise Municipality.

| Question                                    | Response     | Persons | Percentage (%) |
|---|--------------|---------|----------------|
| 1. Do you support the project?              | Support      | 46      | 77             |
|   | Against      | 0       | 0              |
|   | Abstained    | 14      | 23             |
| 2. Do you agree with the project location?  | Agree        | 38      | 63             |
|   | Don't agree  | 2       | 4              |
|   | Do not know  | 20      | 33             |
| 3. Is the layout of the project reasonable? | Reasonable   | 22      | 37             |
|   | Do not know  | 34      | 57             |
|   | Unreasonable | 4       | 6              |
| 4. Is the project conducive to the          | Yes          | 20      | 33             |
| development of local economy?               | Do not know  | 36      | 61             |
|   | No           | 4       | 6              |
| 5、 What environmental issues do you         | Noise        | 32      | 53             |
| experience at the project area?             | Wastewater   | 16      | 27             |
|   | Dust         | 58      | 97             |
| 6、 What are potential environmental impacts | Noise        | 20      | 33             |
| caused by the project?                      | Wastewater   | 38      | 63             |
|   | Dust         | 20      | 33             |
|   | Others       | 4       | 6              |

Table VI-1: Questionnaire Survey (March 2010)

Source: Domestic EIS (2010).

A second round of information disclosure was undertaken, after the updating the FSR and EIS, 137. on website third June 2014 on Baise University's (http://www.bsuc.cn/office/ tongz/ 2014060337758.html), to solicit public comments and suggestions on the preliminary findings of the updated EIS, including the potential impacts identified, proposed mitigation measures, as well as the arrangement of environmental management during both project construction and operation. During information disclosure, the EIA Institute (GZAR Environmental Science Research Institute, who updated the EIS based on the updated FSR) also communicated with affected persons and organizations nearby Chengbi campus (mainly the existing BVS's campus) to collect preliminary public opinions for the project (Figure VI-2).

| TERIE Baise University   |  |
|--|--|
| 「西方名职业数有发展项目环境影响评价公众参与公告     「市方名取业数有发展项目环境影响评价公众参与公告     「市方名取」 | <ol> <li>二、保定及工業事業報知業構成</li> <li>二、保定及工業事業報知業構成にの行為、公司目前注意的必須常用可能中来的主要环境意味。 信用自該加工工程中<br/>物業規模式が除け人口的対策效理論。 GPE供自道法的体力度要加、</li> <li>一、PEEALAEDT (他認道部是即用ADD) - 公公司保護和公式運動設成加強。 特殊協会学師中方式可能認識保護<br/>能能給給や中華実法理会会消費局象徴点、活用会会活動情報的評估的服務方式。 SPE構成時代本者指示<br/>能認知能給や中華実法理会会消費局象徴点、活用会会活動情報的「推動的服務方式」 SPE構成時代本者指示<br/>能認知能給や中華実法理会会消費局象徴点、活用会会活動情報の「</li> <li>1. 常常確如形式方式</li> <li>1. 可不能如取形式</li> <li>1. 可不能如取形式</li> <li>1. 可不能故解除出任何機能的目示機械的科学研究所<br/>認知。 単成1、所工、他認、可能な2000</li> <li>1. 可不能故解除出任何機械的科学研究所<br/>認知。 現代的 100002</li> <li>1. 取得的教育成功</li> <li>1. 取得的教育成功</li> <li>2. 取得的 1010-201010</li> <li>2. 取得解析、control</li> <li>2. 取得的 1010-201010</li> <li>2. 可能的 1010-201010</li> </ol> |
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| Figure VI-2: Second Round of Info                                | ormation Disclosure, June 2014   |

138. A second round of public consultation was conducted on 8 June 2014 by the EIA institute, in collaboration with, and under the guidance of, the PPTA consultant. Consulted people included faculty members and students of Baise University and BVS, and 5 nearby residents (living within BVS campus). A total of 100 questionnaires were distributed and 93 were returned. The background information of consulted people is shown in **Table VI-2**, and the consultation results are shown in **Table VI-3**.

# Table VI-2: Background Information of Participants in Second Round of Public Consultation(in June 2014)

| Ge             | ender  |                         |                       |             | Occupation                    |          |        |  |
|----------------|--------|-------------------------|-----------------------|-------------|-------------------------------|----------|--------|--|
| Male           | Female | Teac                    | Teacher Driver        |             | Driver                        | Student  | Other  |  |
| 21             | 72     | 10                      | )                     |             | 2                             | 79       | 2      |  |
|                | Age    |                         |                       |             |                               |          |        |  |
| <30            |        | 31-40                   |                       | 41-50       |                               | >50      |        |  |
|                | 91     | 1                       |                       | 0           |                               | 1        |        |  |
|                |        |                         | Edu                   | cation leve |                               |          |        |  |
| Primary school |        | Junior middle<br>school | High middle<br>school | College     | Technical secondary<br>school | Bachelor | Master |  |
|                | 0      | 1                       | 5                     | 2           | 48                            | 35       | 2      |  |

Source: Updated Domestic EIS, June 2014.

| Table VI-3: Results | of Second Round | of Questionnaire | Survev (in June 2014) |
|---------------------|-----------------|------------------|-----------------------|
|                     |                 |                  |                       |

| Items  | Responses  | Persons | Percentage<br>(%) |
|--|--|---------|-------------------|
| 1. Do you know this project and its components?                                      | No   | 17      | 18.3              |
|  | Partly   | 39      | 41.9              |
|  | Yes  | 37      | 39.8              |
| 2. What are the most urgent environmental issues within the                          | Air pollution  | 25      | 26.9              |
| project area (multiple options)  | Water pollution  | 21      | 22.6              |
|  | Noise pollution  |         | 25.8              |
|  | Ecological disturbance   | 5       | 5.3               |
|  | Solid waste  | 22      | 23.6              |
| 3. What are the main environmental impacts during                                    | Dust   | 37      | 39.8              |
| construction phase (multiple-option)?  | Construction wastewater and<br>domestic wastewater               | 36.5    |                   |
|  | Noise 19   |         | 20.4              |
|  | Solid waste  | 4       | 4.3               |
| 4. What impacts do you anticipate during project operation phase (multiple-option) ? | Cooking oil fume from canteens, flue dust from hot water boilers | 31      | 33.3              |
|  | Domestic wastewater and wastewater from laboratory               | 33      | 35.5              |
|  | Traffic noise  | 21      | 22.6              |
|  | Solid waste  | 9       | 9.7               |
| 5. Do you think the construction activities in the campus will                       | Significant  | 23      | 24.7%             |
| impact the teaching, learning and living environment?                                | Yes  | 47      | 50.5%             |
|  | Slight   | 19      | 20.4%             |
|  | No   | 4       | 4.3%              |
| 6. Which kind of the campus is your wish after the project?                          | Beautiful and green  | 39      | 41.9%             |
|  | Energy conservation  | 42      | 45.1%             |
|  | Emphasize general knowledge learning, internship and practice    | 12      | 12.9%             |
| 7. Do you agree with the project location? (if not, please state                     | Yes, agree   | 69      | 74.2              |
| the reason)  | No, don't agree  | 8       | 8.6               |
|  | Do not know  | 16      | 17.2              |
| 8. Assuming that adequate mitigation measures are applied,                           | Support  | 85      | 91.4              |
|  | Against  | 8       | 8.6               |

Source: Updated Domestic EIS, June 2014.

139. The relatively high percentage (18.3%) of persons who did not know the project after the first round of consultation is a result of high turn-over on the campus. The students consulted in the first round (2010) have already graduated at the time of the second round of consultations. 91% of the consulted persons supported the project; 74.2% of the respondents believed the proposed campus location is appropriate. For the 8.6% (8 persons) of consulted people who didn't support the proposed project and campus location, are sophomores and juniors of Baise University and the students of BVS who will graduate in a year. They thought they will have no time to enjoy the new campus. After the explanation, and awareness of "Feeling for Alma Mater", the 8 students changed their view, expressed their basic understanding of need for the new campus as a result of increased vocational education need in Baise, and the importance for improvement of the vocational education quality.

140. The following suggestions were made by the consulted people: (i) Baise University should design and construct energy efficient and green buildings; (ii) Baise University, after and during the project completion, should provide good learning condition and curriculum design for promoting students' practical skills, innovative ability, and problem solving capacity; (iii) high noise activities should be forbidden between 10:00 pm to 6:00 am in accordance with Baise EPB's regulation; (iv) provide septic tanks during construction to avoid pollution to the surroundings and take appropriate measures to

control soil erosion, in particular during the construction for slope protection; (v) implement dust control measures; and (vi) ensure environmentally friendly MSW and construction waste disposal. A majority of people surveyed indicated that if the measures proposed in the EIS, IEE, and EMP are strictly carried out during construction and operation, they would be satisfied.

141. All concerns and suggestions submitted by the respondents were provided to the design institute and EIA institute. These concerns and suggestions were taken into account and incorporated in the updated FSR, EIS, and reflected in this IEE and project EMP to the extent possible. Some concerns expressed, and actions requested, were also reflected in the project's social action plan (SAP), including (i) at least 30% of jobs generated by the project will be offered to local population; (ii) local materials will be used where possible and local contractors will be prioritized; (iii) contractors will be required to comply with the core labor standards to ensure the health and safety of employees; and (iv) a clause will be included in the tender documents for civil works on the inclusion of HIV/AIDS awareness training for construction workers.

142. **Assessment of Baise University's current environmental management.** In order to assess BU's current environment, health and safety management practices, the staff's and students' understanding of these practices, and to identify gaps between the current situation of Baise University and the PRC and international standards and best practice, a questionnaire survey was conducted by Baise University and the PPTA consultants in June 2014. Totally 13 teachers/faculties and 90 students were consulted. Of the total consulted students and faculties, only 30.8% of consulted faculties and 21.1% consulted students were satisfied with the current situation in MSW disposal and wastewater management and knew some environmental management regulations and methods in Baise University's existing campus. Most of consulted people knew little about the environmental management in Baise University (**Appendix 4** provides two samples of questionnaires returned). But in the survey, 76.9% of surveyed faculties and 93.3% of consulted students expressed that they are interested in strengthening campus-wide environment management (e.g. through establishment of a sustainability center) (**Table VI-4**).

|                  |   |            | Faculty (13 in total) |              | Student (90 in total) |              |
|------------------|---|------------|-----------------------|--------------|-----------------------|--------------|
| Question         |   | Response   | Number                | Percentage   | Number                | Percentage   |
| 1. Do yo         | you know how much water, energy,  | Know       | 0                     | 0.0%         | 0                     | 0.0%         |
|                  | solid waste and wastewater Baise  | Know some  | 1                     | 7.7%         | 0                     | 0.0%         |
| Univers<br>year? | University consume or produce every<br>year?                            | Don't know | 12                    | 92.3%        | 90                    | 100.0%       |
| 2.               | Are you satisfied with current solid                                    | Yes        | 4                     | <u>30.8%</u> | 19                    | <u>21.1%</u> |
| wastes<br>Univer | wastes disposal service in Baise  | No         | 3                     | 23.1%        | 16                    | 17.8%        |
|                  | niversity?  | No opinion | 6                     | 46.2%        | 55                    | 61.1%        |
| 3. Are y man     | Are you satisfied with current wastewater                               | Yes        | 4                     | <u>30.8%</u> | 19                    | <u>21.1%</u> |
|                  | management in Baise University?   | No         | 6                     | 46.2%        | 29                    | 32.2%        |
|                  |   | No opinion | 3                     | 23.1%        | 42                    | 46.7%        |
| 4.               | Does Baise University have an energy                                    | Yes        | 0                     | 0.0%         | 1                     | 1.1%         |
| consei           | conservation policy?  | No         | 0                     | 0.0%         | 5                     | 5.6%         |
|                  |   | Don't know | 13                    | 100.0%       | 84                    | 93.3%        |
| 5.               | Does Baise University have a solid waste                                | Yes        | 0                     | 0.0%         | 3                     | 3.3%         |
| ma<br>rec        | management policy promoting waste reduction, reuse and recycling?       | No         | 2                     | 15.4%        | 8                     | 8.9%         |
|                  |   | Don't know | 11                    | 84.6%        | 79                    | 87.8%        |
| 6. Do<br>en      | Does Baise University have an<br>environment, health and safety policy? | Yes        | 0                     | 0.0%         | 4                     | 4.4%         |
|                  |   | No         | 3                     | 23.1%        | 5                     | 5.6%         |
|                  |   | Don't know | 10                    | 76.9%        | 81                    | 90.0%        |

Table VI-4: Summary of Questionnaire Survey for Current Environmental Management in Baise University

|  |            | Faculty (13 in total) |            | Student (90 in total) |            |
|--|------------|-----------------------|------------|-----------------------|------------|
| Question   | Response   | Number                | Percentage | Number                | Percentage |
| 7. Has Baise University established                                | Yes        | 0                     | 0.0%       | 9                     | 10.0%      |
| procedures for communicating                                       | No         | 0                     | 0.0%       | 6                     | 6.7%       |
| environment, health and safety                                     | Don't know | 13                    | 100.0%     | 75                    | 83.3%      |
| requirements and provisions to students and faculties?             |            |                       |            |                       |            |
| 8. Does Baise University have an                                   | Yes        | 0                     | 0.0%       | 5                     | 5.6%       |
| environment management system?                                     | No         | 3                     | 23.1%      | 2                     | 2.2%       |
|  | Don't know | 10                    | 76.9%      | 83                    | 92.2%      |
| 9. Does Baise University have a fire safety                        | Yes        | 4                     | 30.8%      | 27                    | 30.0%      |
| plan?  | No         | 2                     | 15.4%      | 31                    | 34.4%      |
|  | Don't know | 7                     | 53.8%      | 32                    | 35.6%      |
| 10. Has Baise University established                               | Yes        | 1                     | 7.7%       | 9                     | 10.0%      |
| emergency identification, preparedness                             | No         | 0                     | 0.0%       | 8                     | 8.9%       |
| and response procedures?   | Don't know | 12                    | 92.3%      | 73                    | 81.1%      |
| 11. Are all faculties and students whose work                      | Yes        | 1                     | 7.7%       | 16                    | 17.8%      |
| involves significant environment and                               | No         | 1                     | 7.7%       | 15                    | 16.7%      |
| safety aspects competent by training, experience and/or education? | Don't know | 11                    | 84.6%      | 69                    | 76.7%      |
| 12. Would you be interested to strengthen                          | Yes        | 10                    | 76.9%      | 84                    | 93.3%      |
| the environment, health and safety                                 | No         | 0                     | 0.0%       | 0                     | 0.0%       |
| management system in Baise University?                             | Don't know | 3                     | 23.1%      | 6                     | 6.7%       |

Source: Project preparatory technical assistance consultants.

#### C. Future Public Consultation and Information Disclosure

143. Public involvement and consultation during construction and operation phases of the project will mainly rely on informal interviews with the staff and students from Baise University, BVS, and nearby residents. The PIU will hold a public meeting prior to commencing construction to discuss issues associated with ensuring the safety of students and staff, as well as nearby residents in vicinity of the construction site. The contact persons for different GRM entry points (contractors, PIU, public complaint center [PCC]) will be identified prior to construction, and their contact details (including phone numbers, e-mail addresses, and postal address) will be disclosed on information boards distributed within and around the Chengbi Campus. During construction, the Baise University, the PIU, and civil work contractors will consult potentially affected persons during regular site inspections. The project's environmental information will be disclosed on ADB's project website.

# VII. GRIEVANCE REDRESS MECHANISM

# A. Proposed Mechanism

144. A grievance redress mechanism (GRM) was defined in compliance with ADB's SPS requirement to prevent and address community concerns. In consultation with the PMO and Baise University (the implementing agency) it was agreed that a PCC will be established within the PMO. The PCC will instruct contractors, implementing agency and construction supervision companies (CSC) if people complain about the Project. The PCC will coordinate with the local government divisions and Baise EPB, as necessary, and will be supported by the environment specialist of the project implementation support (LIS-ES).

145. The contact persons for different GRM entry points (contractors, PIU, PCC) will be identified prior to construction. The contact details for each entry point (including phone numbers, e-mail addresses, and postal address) will be disclosed on information boards within and around the campus.

146. The PCC will establish a GRM tracking and documentation system. The system will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s), (ii) a process for informing stakeholders about the status of a case, and (iii) a procedure to retrieve data for reporting purposes, including the periodic reports to ADB.

# B. Types of Grievances Expected and Eligibility Assessment

147. Public grievances addressed by the GRM will most likely be limited to environmental issues during the construction phase. Grievances will most likely relate to dust emissions, construction noise, disposal of waste materials in inappropriate places, and inadequate construction site safety. The GRM will remain operational during project operation. For that purpose, the PCC will be institutionally integrated into the Baise University Sustainability Center.

148. Eligible complaints include those where (i) the complaint pertains to the project; and (ii) the issues arising in the complaint relates to environment or social safeguard issues. Ineligible complaints include those where (i) the complaint is clearly not project-related; and (ii) the nature of the issue is outside the mandate of the GRM (such as issues related to allegations of fraud or corruption). Complaints ineligible to the GRM will be recorded and passed onto relevant authority. Meanwhile, the complainant will be informed of the decision and the reasons for rejection.

# C. Grievance Redress Mechanism Procedure and Timeframe

149. Procedures and timeframes for the grievance redress process are as follows:

- (i) Stage 1. If a concern arises during construction or operation, the affected person (AP) will submit the complaint to one of the GRM access points (contractor, PIU, implementing agency). Whenever possible, the contractor and PIU will resolve the issue of concern directly with the affected person. The contractor or PIU will give a clear reply within one week. If successful, the PIU will inform the PMO and PCC accordingly.
- (ii) Stage 2. If no appropriate solution can be found during Stage 1, the PIU, contractor or other GRM access point has the obligation to forward the complaint to the PCC. The affected person may also decide to submit a written or oral complaint to the PCC directly. For an oral complaint, proper written records must be made. The PCC will assess the eligibility of the complaint, identify a solution in consultation with the complainant, Baise University and contractor, and provide a clear reply for the complainant within 5 working days. The LIS-ES will assist the PCC in replying to the affected person. The PCC will
inform the ADB project team on the complaint. The contractors during construction, and Baise University during operation, will implement the agreed upon redress solution and report the outcome to the PCC within 2-3 weeks.



Figure VII.1: Grievance Redress Mechanism

EPB = environmental protection bureau, IA = implementing agency, PIU = project implementing unit (under IA), PMO = project management office, PCC = public complaint center.

#### VIII. ENVIRONMENTAL MANAGEMENT PLAN

150. An environmental management plan (EMP) has been prepared for the project. It is an essential document to ensure the implementation of mitigation measures. The full EMP will be attached to the Project Administration Manual of the project.

151. The EMP defines all potential impacts of different project outputs and the mitigation and protection measures with the objective of avoiding or reducing these impacts to acceptable levels. The EMP also defines the institutional arrangements and mechanisms, the roles and responsibilities of different institutions, procedures and budgets for implementation of the EMP. The EMP is based on the domestic EIS and FSR, and draws on the findings of the project IEE, PPTA, and ADB review mission discussions and agreements with the relevant government agencies in Baise City and GZAR.

152. The EMP, presented in **Appendix 1**, defines (i) responsibilities and authorities for EMP implementation, (ii) summary of impacts and mitigation measures, (iii) environmental monitoring and inspection plan, (iv) institutional strengthening and training plan, (v) reporting requirements, (vi) public consultation plan, (vii) cost estimates, and (viii) mechanism for feedback and adjustment. The EMP will be reviewed and updated at the end of the detailed design in order to be consistent with the final detailed design. The EMP will also be included as separate annex in all bidding and contract documents. Contractors will be required to develop their site-EMPs that are fully responsive to the EMP. The PIU-ES will be assigned with the responsibility to ensure Contractors' compliance with the site-EMP and EMP.

#### IX. CONCLUSION

153. The project underwent appraisal during project preparation and was classified as Category B for environment on the basis of site visits and ADB's Rapid Environmental Assessment. In compliance with ADB's Safeguards Policy Statement (2009), an initial environmental examination (IEE), including environment management plan (EMP) was developed, covering the design, construction and operation of the project, drawing on the data and information from FSR, domestic environmental impact statement (EIS), the Water and Soil Erosion Control Plan (WSECP), and discussions with the PMO and Baise University.

154. The project will involve construction of new building and auxiliary facilities as well as equipment purchase for the new Chengbi Campus. Phase I of the campus construction is underway, financed through domestic funding, which includes main earthworks and land leveling, campus roads, installation of main utilities (water supply, drainage, main sewers), and several buildings in the central and northern part of the campus. The tentative scope of the proposed Phase II will include construction of 12 buildings, a photovoltaic power system, slope protection works, and teaching equipment. The total building area is 160,691 m<sup>2</sup>.

155. In the framework of the PPTA, the proposed campus design as defined in the FSR was critically reviewed and revised to ensure that the new Chengbi campus will be safe, healthy, resource-efficient and environment-friendly. Key improvements to the FSR, to be further defined in the preliminary and detailed design, include the following:

- (i) Promotion of energy-efficiency through adherence to key national and regional energy-efficiency and green building policies and standards.
- (ii) Application of technological innovations to enhance resource efficiency and energy-conservation, including a 3.47 MW photovoltaic power generation system on the campus buildings; two heat pump air conditioning and hot water systems on the library and administration building; and an associated onsite wastewater treatment and reuse system with the treatment capacity of 2,000 m<sup>3</sup>/d.
- (iii) Adherence to PRC green public procurement policies for equipment procurement.<sup>29</sup>
- (iv) Improvements to the campus firefighting plan, including fire truck route optimization, as well as the establishment of a campus forest fire warning system; improvements to the campus emergency evacuation plan; setup of a campus security system with strict access control and security monitoring system.
- (v) Critical review of landslide risk and definition of slope protection works.

156. During project construction, major anticipated impacts include noise, fugitive dust, solid wastes, and community and occupational health and safety risks. Overall, construction-related impacts are localized, short term, and can be effectively mitigated through the application of good construction and housekeeping practices and implementation of construction phase community and occupational health and safety plans.

157. During operation, no major environmental impacts are anticipated. The current and proposed environment services of Baise University were assessed, and it is concluded that incremental water supply, sewage discharge, and MSW generation resulting from the project will not overburden Baise's

<sup>&</sup>lt;sup>29</sup> As defined in (i) Public Procurement List of Environmental Labeling Products (issued and regularly updated by NDRC and MOF), which includes 21 categories of products, such as light vehicle, photocopier, computer, water-based paint, furniture, etc; and (ii) Public Procurement List of Energy Saving Products (issued and regularly updated by MEP and MOF), which includes 27 categories of energy saving products, such as air conditioner, refrigerator, lighting product, television set, electric water heater, computer, printer, monitor, etc. and 7 categories of water saving products, such as toilet, faucet, shower etc.

existing municipal services. The existing water supply system, sewage pipelines and on-site and off-site WWTPs, as well as the MSW landfill are adequate to satisfy the water demand, and to receive sewage and MSW from the campus. The project's potential impacts on community and occupational health and safety during operation were analyzed and corresponding mitigation measures have been proposed in the IEE and EMP. Component 4 of the project will also provide expert support to develop a Sustainability Strategy, which will include the creation of a Sustainability Center within Baise University's Comprehensive Affair Department, with the task to promote sustainable campus development.

158. An environment management plan (EMP) has been developed for the pre-construction, construction, and operation phases of the project. The EMP defines mitigation measures, monitoring requirements, and institutional responsibilities and costs for implementing the mitigation measures and the monitoring requirements. The EMP will be included as separate annex in all bidding and contract documents. Contractors will be required to develop site-EMPs that are fully responsive to the EMP.

159. In the framework of the environmental due diligence, meaningful consultation was conducted through questionnaire surveys and meetings with key stakeholders. The final IEE will be disclosed on the ADB website. Further consultation will take place before the startup of construction works. Posters will be placed within and around the campus, and public meetings will be conducted by the PIU and the civil works contractors prior to construction works. A safeguard grievance redress mechanism (GRM) has been defined to deal with public complaints related to project activities during project implementation and operation.

160. Project risks related to environment safeguards have been analyzed, and the assurances required to address these risks, have been defined. The major risks are listed below:

- (i) Design of project facilities not complying with relevant design standards and codes related to energy-efficient, safe and green public buildings.
- (ii) Inadequate capacity of the BMG and Baise University in environment management, which could result in inefficient project and EMP implementation.
- (iii) lack of commitment by Baise University management to promote environmental sustainability issues.

161. Environment safeguards related covenants will be incorporated into the project agreement, including: (i) a commitment of BU to adhere to key energy-efficiency and green building policies and standards promoted by MOHURD and MOED; (ii) a commitment to adhere to PRC green public procurement policies; and (iii) a commitment to promote energy-conservation and low-carbon development on and off campus through the use of renewable energy, and the application of energy-efficient appliances, and the setting up of a Sustainability Center within Baise University.

162. The overriding assurance required is that BMG and Baise University as appropriate will ensure that the full range of effective measures set out in the IEE and EMP are undertaken, and guarantees that the environmental management provisions and the environmental monitoring plan will be implemented effectively during project implementation, and that the implementation reports of the environmental management and monitoring plan in accordance with ADB requirements will be submitted in a timely fashion. Part of this monitoring and management commitment will be a commitment to implement and maintain an appropriate GRM.

#### A. Conclusion

163. The IEE concludes that as long as the environmental mitigation and management measures defined in the EMP are properly implemented, all adverse environmental impacts associated with the project will be prevented, eliminated, or minimized to an acceptable level. The project is feasible from an

environment safeguards point of view.

## Supplementary Appendix 4

# Due Diligence Report - Land Acquisition and Resettlement

Project Number: 47009 / TA 8448-PRC September 2014

## People's Republic of China: Guangxi Baise Vocational Education Development Project

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#### Summary

Guangxi Baise Vocational Education Development Project (Project) will be implemented in Baise University (BU), the implementing agency (IA) of the Project. The Project consists of four (4) components: (i) Component 1: Building Multilevel TVET quality and capacity; (ii) Component 2: Construction of new Chengbi campus phase II facilities and equipment; (iii) Component 3: Promoting TVET innovation and Responsiveness; and (iv) Component 4: Project Management Support. The Asian Development Bank (ADB) will finance about 65% of the project cost. The Baise Municipal Government (BMG) is the Executing Agency (EA) for the project. The Baise University (BU) is the project implementing agency (IA). The project construction will start from October 2014 and end by December 2018.

Components 1, 3 and 4 do not involve any land acquisition and resettlement (LAR), while Component 2 will be constructed on an existing state-owned land that BU has the authorized right to use. Except for some fruit trees and graves, no residential houses are on the land. Therefore, the Project will not involve any land acquisition (LA) and house demolition (HD). Compensation for all of affected fruit trees and moving graves was paid to affected persons (APs) from June 2009 to December 2012. This Due Diligence Report has been prepared as a requirement of ADB to document the previous impacts and verify that there are no remaining issues.

BU has three (3) campuses located in different places in Youjiang District of Baise City, which occupy a total land area of 1,915mu. BU is being operated on Donghe Campus with a land area of 217 mu, while Baise Vocation School (BVS) is being operated on West Campus with a land area of 200 mu. Chengbi Campus is the third one with a total land area of 1,498 mu. Chengbi Campus is a new campus and is under construction now. It will be built in three construction phases. Phase I began construction from November 8, 2010 and will be completed in 2014. The proposed project to be financed by ADB will be constructed in this campus, which will occupy 150 mu of land as Phase II from 2014 to 2016. Phase III will be constructed after 2016 and is not financed by ADB. The construction plan was prepared in 2008 when BU had not started to apply ADB's financing.

The 1,498 mu land for Chengbi Campus is an existing state-owned mountain land that BU has the authorized right to use for agriculture experimental base since year 1971. At that time no residents were living on the land. Therefore, no LA and HD are involved for construction of Chengbi Campus. About 181.2 mu of the land was contracted to 11 persons from year 2000 for planting litchi, guava, banana, etc. with a total of 15,281 trees. The rest land is managed by BU as a plantation experimental base. In addition, a total of 132 graves owned by 57 households on the land are affected.

By December 2012, all 11 persons signed agreement with BU to terminate contracts of planting fruit trees on the land, and received a total compensation of CNY361,560. By November 2011, all 57 households moved the 132 graves out of the land, and received a total compensation of about CNY66,000.

There were 42 among 132 graves, involving 14 households, on the 150 mu land for Phase II, this proposed project. The affected households received a total compensation of CNY21,000, and moved out of the graves before November 2011. None of the contracted trees were located on the 150 mu land. In addition, BU has paid to Baise Forest Bureau a compensation of CNY2.20 million for re-vegetation fee in 2011.

Due to full public consultation and reasonable compensation, no complaints or appeals occurred during the LAR procedure and there are no problems remaining. The construction of Phase I are being implementing smoothly now.

This due diligence report (DDR) on the property and authorized use right of the land, compensation standards, disbursement procedures, agreement between BU and affected persons (APs) and interview with APs is prepared by BU.

#### 1. Introduction

#### 1.1 Project Description

- 1. Guangxi Zhuang Autonomous Region (GZAR) is one of the 12 less-developed provinces and autonomous regions in the west region of the People's Republic of China (PRC). Baise City is one of prefecture cities of GZAR and administers one district and 11 counties, including 10 national poverty alleviation counties. The city has a total population of 3.98 million with an area of 36,300 km<sup>2</sup>.
- 2. Baise University (BU) is the only comprehensive university in Baise City, which has offered multilevel vocational education. It not only has provided 30 undergraduate programs and 37 higher vocational education programs, but also sponsored Baise Vocational School (BVS) that provides vocational training for migrant workers and offers 7 secondary vocational education programs. In order to meet the need for vocational education development in Baise and GZAR, BU is constructing a new campus Chengbi Campus. Facilities of the proposed project will be constructed in Chengbi Campus as 2<sup>nd</sup> phase of the campus construction<sup>1</sup>. Chengbi Campus occupies a total land of 1,498 mu. The construction for 2<sup>nd</sup> phase will occupy a total land area of 150 mu out of 1,498 mu.
- 3. The proposed Guangxi Baise Vocational Education Development Project (Project) will be implemented in Baise University (BU), the implementing agency (IA) of the Project. The Project consists of four (4) components: (i) Component 1: TVET (technical and vocational education and training) Capacity Building; (ii) Component 2: Construction of New Chengbi Campus Phase II Facilities; (iii) Component 3: Promoting TVET Innovation; and (iv) Component 4: Project Management Support.
- 4. Components 1, 3 and 4 do not involve any land acquisition and resettlement (LAR), while Component 2 will be constructed in Chengbi Campus on an existing state-owned land of 150 mu that BU has the authorized right to use. Except for some natural trees and graves, no residential houses are on the land. Therefore, the Project will not involve any land acquisition (LA) and house demolition (HD). In addition, the 150 mu land didn't contain any fruit trees and moving graves was paid to affected persons (APs) by December 2012.
- 5. The Project is planned to commence from October 2014 and complete in December 2017. In accordance with ADB's Safeguard Policy Statement (2009) and its requirements for involuntary resettlement, this due diligence report on the LAR is prepared and submitted by BU to ADB for approval before project approval.

#### **1.2 Resettlement Due Diligence**

6. To review implementation procedures and process of LAR related to this Project and to ensure the legal rights of APs, BU conducted due diligence for the LAR with assistance of an independent resettlement specialist.

#### 1.2.1 Purpose of Due Diligence

7. A comprehensive review is needed for the LAR related to this Project to: (i) evaluate whether the LAR procedures and process are in accordance with Land Administration Law of the PRC, relevant resettlement and compensation regulations of Baise City; (ii) analyze and evaluate the procedures, implementation progress, impacts of the LAR, compensation delivered, and current situations of APs; and (iii) analyze and evaluate satisfaction of APs and any potential problems, and if so, propose recommended actions.

#### 1.2.2 Methods of Due Diligence

- 8. Two methods are adopted to carry out this due diligence, including (i) literature research and document review; and (ii) field survey and in-depth interview with APs. Relevant documents and materials are collected and reviewed and verified during the due diligence.
  - Documents collected during the due diligence include: project design document, project approval document, land approval document, permit for planning of construction land,

<sup>&</sup>lt;sup>1</sup> The 1<sup>st</sup> phase of the campus construction was commenced from November 2010 and is planned to end by 2014.

roster of affected persons who are compensated, as well as the resettlement agreements;

- Public participation information related to LAR: telephone, website, announcement for removing graves, newspaper information, etc.; and
- Interview: From January 13th to 25th, 2014, the due diligence group carried out interviews with key informants, including members of Baise University Chengbi Campus Planning and Construction Steering Group, Chengbi Campus land acquisition office, and APs.

#### **1.2.3 Contents of Due Diligence**

- 9. Following contents are planned to review before mobilizing the due diligence:
  - Land approval process
  - > Land acquisition and house demolition policies and their implementation
  - Progress of land acquisition, allocation of compensation funds, and compensation standards
  - Progress of house demolition, allocation of compensation funds, compensation standards and construction of new houses
  - > Income recovery, house rebuilding, and satisfaction of affected persons
  - > Compensation and resettlement of enterprises and institutions
  - Vulnerable groups
  - > Operation efficiency of resettlement implementation organization
  - > Public participation and consultation
  - Complaints and grievance.
- 10. After the due diligence was conducted, it is understood that (i) BU has the legal use right of the 1,498 mu state-owned land for Chengbi Campus since 1970s, (ii) there was no resident's house on the land, (iii) no subsequent LA nor HD were required, (iv) some fruit trees on Phase I land but not on Phase II land and graves were affected, so compensation for the trees and graves moving was paid to APs, and (vi) none of these APs are considered vulnerable groups.

#### 2. Project Land and Impact Scopes

#### 2.1 Project Land

- 11. The predecessor of Baise University is Baise Nationality Teachers' School. Baise Revolutionary Commission, the former local municipal government, allocated the land of Chengbi Campus to Baise Nationality Teachers' School on January 6, 1971 via Document Ref. No.: Baigezi [71]3 (Annex 1). The state-owned land use certificate for this land, located in Baise Town of Baise City, was issued to Baise Nationality Teachers' School on November 25, 1994 (Ref. No.: Baiguoyong [94] 04589). On July 30, 2003, Baise Nationality Teachers' School was merged into Youjiang Nationality Teachers' College. The use right of the land was transferred and certificated to Youjiang Nationality Teachers' College in April 5, 2004 (Ref. No.: Baiguoyong [2004] 00123). In February 2006, Youjiang Nationality Teachers' College was upgraded as Baise University (BU). Therefore, the land use right of Chengbi Campus belongs to BU. On March 11, 2010, the construction land planning permit for Chengbi Campus Expansion Project was approved (Ref. No.: 45100120100050), clarifying the land area as 1,498 mu. Then BU commenced the Phase I construction on Chengbi Campus in November 2010.
- 12. This Project is planned to be the Phase II construction of BU Chengbi Campus Expansion Project. It will occupy 150 mu out of the 1,489 mu land. The planning drawing of Chengbi Campus and scope of this Project is presented on Picture 2-1.



Picture 2-1: Chengbi Campus and Location of this Project

#### 2.2 Impact Scope

- 13. The land was not used and managed formally by BU before year 2000. It was mountainous land so some people planted some fruit trees, while others used it as grave land freely. In order to effectively manage the land and its ecological environment, Youjiang Nationality Teachers' College (the predecessor of BU) signed land use contracts with persons who planted fruit trees on the land in March 2000. A total of 181.2 mu of the 1,498 mu land was contracted to 11 persons. The remaining land is used as a vegetation education base by BU.
- 14. Based on the field survey, the 150 mu land to be used for this Project does not involve the

contracted land. However, there were 42 graves on the land. In fact, the compensation for these fruit trees and graves was conducted for the entire 1,498 mu of Chengbi Campus from November 2010, without distinguished lands for the phase I or phase II construction. To make comprehensive analysis and evaluation on the LAR impacts, the due diligence identified and analyzed impacts on the entire 1,498 mu land.

#### 2.2.1 Impacts on Fruit Growers

15. The BU Chengbi Campus Expansion Project affected the 181.20 mu contracted land, 15,281 fruit trees, and 11 persons who planted the fruit trees. The APs are from the staff of BU or local education bureau. They use their part-time to plant the trees for their health and recreation. The details are listed in Table 2-1.

| Туре                                  | Affected | Contracted | Affected    | Notes  |
|---------------------------------------|----------|------------|-------------|--|
|                                       | Person   | area       | fruit trees |  |
|                                       | (person) | (mu)       | (tree)      |  |
| BU staff                              | 4        | 84.8       | 5,898       | The earliest fruit tree was planted in   |
| Other<br>Education<br>Bureau<br>staff | 7        | 96.4       | 9,383       | 1987 and there was only one<br>species — chestnut tree. The latest<br>plantation time was 2005 and the<br>species include litchi, guava and<br>banana. |
| Total                                 | 11       | 181.2      | 15,281      |  |

Table 2-1: Statistics of Contracted Fruit Growers

#### 2.2.2 Impacts of Grave Removal on Households

16. A total of 57 persons are affected by the grave removal, including BU staff, other residents. A total of 132 graves are affected on the 1,498 mu land. The details are listed in Table 2-2. Based on the field survey, 14 households are affected by the Phase II construction due to the grave removal, involving 42 graves on the 150 mu. All the affected persons are urban residents, as shown in Table 2-3. All 132 graves were removed out of the 1,498 mu land before the due diligence was conducted.

| Project             | Types                    | Number    | Grave             | Number | Status  | Notes                                  |
|---------------------|--------------------------|-----------|-------------------|--------|---------|--|
| Name                |                          | (Persons) | type <sup>2</sup> |        |         |  |
| BU Chengbi          | School staff             | 6         | Bone<br>grave     | 19     | Removed | Based on the<br>records on the         |
| Campus<br>Expansion | Other urban<br>residents | 47        | Bone<br>grave     | 109    | Removed | gravestones, the oldest grave is       |
| Project             | Neighboring<br>residents | 4         | Bone<br>grave     | 4      | Removed | about 50 years and the latest one is 3 |
| Total               |                          | 57        |                   | 132    |         | years old.                             |

#### Table 2-2: Graves Removed for Baise University Chengbi Campus Expansion Project

| Table 2-3: Households Affected by Graves Removal for Guangxi Baise | Vocational Education |
|--|----------------------|
| Development Project  |                      |

| Project   | Types                    | Number    | Grave         | Number | Status  | Notes   |
|---|--------------------------|-----------|---------------|--------|---------|---|
| Name  |                          | (Persons) | type          |        |         |   |
| Guangxi   | School staff             | 6         | Bone          | 10     | Removed | Based on the  |
| Baise   | 501001 Stall             | 0         | grave         | 19     | Removed | records on the  |
| Vocational<br>Education<br>Development<br>Project | Other urban<br>residents | 8         | Bone<br>grave | 23     | Removed | gravestones, the<br>oldest grave is<br>about 21 years<br>and the latest one |
| Total   |                          | 14        |               | 42     |         | is 5 years old.   |

 $<sup>^{2}</sup>$  According to local custom, a corpse is burred for 2 or 3 years first, which is called wet graves. After 2 or 3 years, the corpse's bone will be took out and cleaned when the corpse is rotted. Then the bones will be put into a bones jar, and burred again, which is called bone graves.

#### 3. Resettlement Implementation

#### **3.1** Termination of Land Contracts

#### 3.1.1 Contracted Land and Contractors

- 17. The 181.2 mu land was contracted to 11 persons. The contract period is 20 years from 2000 to 2020. The contract stated that the contractors must plant fruit trees only. The contractors need to pay CNY20 per mu per year for the contracted land. The contractors shall return the land to BU without compensation for the land, but with compensation for ground attachment cost when the state (the land owner) and BU (the certified land user) requires to clears the land. One sample of the signed land leasing contract is shown in **Annex 2**.
- 18. Baise Municipal Government (BMG) approved the construction of Baise University Chengbi Campus in April 2009. BU started to conduct detail measure survey on the land including trees and graves from June 2009. By year 2009 when BU began to prepare the land for the project construction, the contractors had planted a total of 15,281 fruit trees. The details of contractors are shown in Table 3-1.

| Project name | Affected     | Employers of     | Plantation area | Number of     |  |
|--------------|--------------|------------------|-----------------|---------------|--|
|              | persons      | affected persons | (mu)            | trees planted |  |
|              |              | Baise University | 27.3            | 1,172         |  |
|              |              | Baise University | 17              | 855           |  |
|              |              | Baise University | 25              | 527           |  |
|              |              | Baise University | 15.5            | 3,344         |  |
|              |              | Baise education  |                 |               |  |
|              | Surname Li   | (administration) | 13.4            | 610           |  |
|              |              | institutions     |                 |               |  |
|              |              | Baise education  |                 |               |  |
|              | Surname Zhou | (administration) | 11              | 1,110         |  |
|              |              | institutions     |                 |               |  |
| BLI Chenghi  |              | Baise education  |                 |               |  |
| Campus       | Surname Qin  | (administration) | 10              | 1,445         |  |
| Expansion    |              | institutions     |                 |               |  |
| Project      | Surname Wu   | Baise education  |                 |               |  |
| Toject       |              | (administration) | 8               | 830           |  |
|              |              | institutions     |                 |               |  |
|              |              | Baise education  |                 |               |  |
|              | Surname Xie  | (administration) | 76              | 3,200         |  |
|              |              | institutions     |                 |               |  |
|              | Surname      | Baise education  |                 |               |  |
|              | Huang        | (administration) | 8               | 580           |  |
|              | ildang       | institutions     |                 |               |  |
|              | Surname      | Baise education  |                 |               |  |
|              | Huang        | (administration) | 70              | 1,608         |  |
|              | iluany       | institutions     |                 |               |  |
| Total        | 11           |                  | 181.2           | 15,281        |  |

#### Table 3-1: Details of Affected Persons of Contracted Land

#### 3.1.2 **Specific Implementation**

#### (1) Termination of Contract Agreements

19. BU decided in June 2009 to terminate the contract of planting fruit trees with the contractors. Since the land is state-owned land and BU has the legal rights to use the land, the utilization of the land does not involve land acquisition. Under the guidance of Baise Development and Reform Commission and Baise Land and Resources Bureau, BU started in June 2009 to post announcements on termination of the contracts on its website, notice boards, main entrance of the land and on the fruit trees. All contractors were informed through telephone and started to negotiate on compensation for affected trees. To protect the legal rights and interests of the fruit growers, BU entrusted Baise Price Appraisal Center on October 18, 2010 to evaluate the compensation rates and issued the rate evaluation report (Ref. No.: Baijiajianzi [2010]55), as shown in Picture 3-1. Baise Price Appraisal Center is a qualified organization for price evaluation, and its qualification certificate is shown in Picture 3-2.



Picture 3-1: Price Evaluation Report



Picture 3-2: Qualification Certificate of Baise Price Appraisal Center

20. In December 2012, all 11 contractors signed agreements with BU to terminate the contract of planting fruit trees.

#### (2) Implementation Organization and Its Duties

21. BU set up a steering group on June 15, 2009 to terminate the land contracts for the construction of Chengbi Campus. The steering group was headed by a vice president of BU and was composed of an office and three working group (See Picture 3-3): including a land reclamation clearance group, a verification group and a safeguard group. The duties of each working group are shown in Table 3-2.



Picture 3-3: Organization Structure of the Project Steering Group

| Table 2 2. Duties a | f Different Merking | Croups of | Changhi Compus | Drainet Stearing | Craum   |
|---------------------|---------------------|-----------|----------------|------------------|---------|
| Table 3-2. Duties 0 | Different working   | Groups or | Chengol Campus | Project Steering | j Group |

| Group Name              | Person-in-charge | Work Duties   |
|-------------------------|------------------|---|
| Land clearance<br>group | Nong Huaixian    | <ol> <li>Negotiate with contractors to terminate contract</li> <li>Negotiate with contractors on compensation issues</li> <li>Verify with contractors the land area and land-attached structure<br/>and organize both parties to confirm by signature</li> <li>Entrust an independent agency to evaluate the prices of<br/>land-attached structure</li> <li>Consulting with contractors over legal interpretations</li> </ol> |
| Verification group      | Nong Huaixian    | <ol> <li>Cooperate with the independent agency to conduct detail measure<br/>survey, calculate and verify the land-attached structures</li> <li>Organize the group members to verify the quantity in kind</li> </ol>  |
| Safeguard group         | Nong Yan         | <ol> <li>Ensure relevant policies and regulations</li> <li>Inform relevant participants for meetings</li> <li>Other issues</li> </ol>   |

#### (3) Work Process

22. The work of the steering group can be divided into three phases. The details are listed in Table 3-3.

| Time                             | Work Procedures  |
|----------------------------------|--|
| Before June 20, 2009             | <ol> <li>Different working groups and the lawyers collected and reviewed the contracts;</li> <li>Organized working meeting to prepare work measures and clarified the priorities;</li> <li>The land clearance group collected and distributed the contracts and relevant documents to other working groups to carry out their relevant work;</li> <li>Different working groups and the contractors conducted detail measure survey, calculated and verified the land-attached structures and fruit trees and made</li> </ol> |
|                                  | recording. The results were confirmed by both parities by signature.   |
| June 20, 2009 ~ June<br>26, 2009 | 1. Entrusted an independent agency to evaluate the prices of land-attached structures;   |
|                                  | 2. Different working groups discussed and proposed the compensation plan based on the evaluation;  |
|                                  | 3. BU consulted with the contractors and households affected by grave removal to determine the compensation plan.  |
| June 26, 2009 ~ July             | 1. Delivered the compensation plan agreed by both parties after consultation;  |
| 15, 2009                         | 2. Carried out the compensation work;  |
|                                  | 3. Terminated the contract agreements.   |

 Table 3-3: Timeframe of Different Working Groups

#### 3.2 Implementation of Grave Removal

#### 3.2.1 Affected Graves

23. Based on the field survey, the Chengbi Campus Expansion Project affected 57 households and 132 graves on the 1,498 mu land, including 14 households and 42 graves on the 150 mu land to be used for the phase II construction.

#### 3.2.2 Households Affected by Grave Removal

24. The 42 graves on the 150 mu land involved 14 households as presented in Table 3-4. All graves were removed by November 2011. Some AHs moved graves to their hometown while others relocated the graves on wasteland as permitted by local authorities.

| No.   | Affected<br>Person | Employer/Address   | Types of<br>grave | Number | Time of removal   |
|-------|--------------------|--|-------------------|--------|-------------------|
| 1     | Surname<br>Shen    | Baise Silkworm Egg Station                               | Bone grave        | 1      | November 10,2011  |
| 2     | Surname<br>Lin     | No. 29 Chengbei Road,<br>Youjiang District, Baise City   | Bone grave        | 12     | April 14, 2011    |
| 3     | Surname<br>Pan     | No. 11 Dongsun Road,<br>Youjiang District, Baise City    | Bone grave        | 4      | December 26, 2010 |
| 4     | Surname<br>Huang   | No. 7 Zhongshanyi Road,<br>Youjiang District, Baise City | Bone grave        | 1      | March 17, 2011    |
| 5     | Surname<br>Su      | Youjiang District Education<br>Bureau, Baise City        | Bone grave        | 1      | January 11, 2011  |
| 6     | Surname<br>Wei     | Baise Education Bureau                                   | Bone grave        | 1      | November 26,2011  |
| 7     | Surname<br>Zhao    | Baise Electrochemical Factory                            | Bone grave        | 2      | January 20, 2011  |
| 8     | Surname<br>Cai     | No. 51 Heping Street,<br>Youjiang District, Baise City   | Bone grave        | 1      | January 20, 2011  |
| 9     | Surname<br>Yan     | Baise University Staff                                   | Bone grave        | 2      | October 5, 2010   |
| 10    | Surname Li         | Baise University Staff                                   | Bone grave        | 5      | February 1, 2010  |
| 11    | Surname<br>Qin     | Baise University Staff                                   | Bone grave        | 3      | February 1, 2010  |
| 12    | Surname<br>Lu      | Baise University Staff                                   | Bone grave        | 1      | December 26, 2010 |
| 13    | Surname<br>Qin     | Baise University Staff                                   | Bone grave        | 6      | January 10, 2010  |
| 14    | Surname<br>Nong    | Baise University Staff                                   | Bone grave        | 2      | October 10, 2010  |
| Total | 14                 |  |                   | 42     |                   |

Table 3-4: Persons Affected by Grave Removal

#### 3.2.3 Specific Implementation

#### (1) Implementation Organization and Its Duties

25. BU established another steering group on October 20, 2009 responsible for the planning and construction of Chengbi Campus. This steering group was composed of three working groups: a

supervision group, a work group, and a land clearance and grave removal group. The work duties of different groups are listed in Table 3-5.

#### Table 3-5: Work Duties of Baise University Chengbi Campus Planning and Construction

| Group Name                                   | Person-in-charge                      | Work Duties   |
|--|---------------------------------------|---|
| Supervision group                            | Liang Wenhua (Deputy party secretary) | Responsible for the project supervision to ensure legitimate procedures, reasonable pricing, scientific progress and quality conformance                          |
| Work group                                   | Wei Zongfa (Vice president)           | Cooperate the developers to complete project proposal,<br>planning, feasibility study and comprehensive evaluation<br>so as to ensure smooth project construction |
| Land clearance and<br>grave removal<br>group | Qin Yibing                            | Coordinate the work related to land clearance and grave<br>removal in accordance with the need of project planning<br>and construction                            |

#### Steering Group

#### (2) Procedures of Grave Removal

26. The land clearance and grave removal group took following steps below to work on the grave removal:

> Post announcement on the university website, Youjiang Daily and the entrances to the project land.

- Survey and calculate the numbers of graves and keep a register.
- > Invite the affected household owners to confirm with the register.
- > Consult with affected households on compensation issues.

#### (3) Process of Grave Removal

- 27. To respect local customs and culture, Baise Civil Affairs Bureau and Baise Land and Resources Bureau provided policy guidance for the implementation of grave removal. BU also held several work meetings to discuss the compensation issues and reply to questions raised by the affected households.
- 28. According to the Provisional Methods on the Acquisition of Collective Land in Urban District of Baise City (Baizhengfa [2005]64)<sup>3</sup>, the affected persons will be compensated CNY 500.00 in cash in lump sum for each grave after removal. The compensation plan was understood and accepted by all the affected persons and no dispute arose during the process of grave removal. The grave removal was carried out by individual affected persons based on their specific needs. The new locations for resettled graves were also determined by the affected persons, and the government did not make unified arrangement for new location for grave removal. All affected persons were cooperative with BU after being informed to remove the graves out of the project land. By April 14, 2012 (after the Tomb-sweeping Festival), 14 households had removed all of their 42 graves.

<sup>&</sup>lt;sup>3</sup> Baise has no relevant policy on graves on state-owned land. Therefore, the project took above methods as reference.

#### 4. Compensation and Resettlement

#### 4.1 Compensation Standards

#### 4.1.1 Compensation standards for Fruit Trees

29. On October 18, 2010, BU entrusted Baise Price Appraisal Center to evaluate the compensation rates of fruit trees of 11 APs. The center is a qualified pricing evaluation agency in Baise City. The rates of fruit trees are determined based on the market value.

30. The rates and total prices for compensations have taken into consideration of tree species, time of plantation, quantity, diameter/height of trees, natural growth/grafting, and whether the trees have borne fruits, as shown in Picture 4-1.

| 1  |          |        |           | 价格         | 人证计算法     | 荧           |                          |            |    |
|----|----------|--------|-----------|------------|-----------|-------------|--------------------------|------------|----|
|    | 人;黄少龙    |        | 承包面       | i积: 27.3 亩 |           |             | 实际面                      | ī积: 27.3 ī | ī  |
|    | 品种       | 种植时间   | 数量<br>(株) | 胸径/株高      | 实生/<br>嫁援 | 是否进入<br>挂果期 | 认证单价 <sup>*</sup><br>(元) | 总金额<br>(元) | 备注 |
| 1  | 龙眼树 (石甲) | 1998年  | 22        | 头径 15cm    | 实生        | 挂果          | 60                       | 1320       |    |
| 2  | 扁桃树      | 2006年  | 2         | 头径 3cm     | 实生        | 否           | 10                       | 20         |    |
| 3  | 荔枝树      | 2006年  | 2         | 头径 3cm     | 实生        | 否           | 15                       | 30         |    |
| 41 | 沙田柚      | 1995年  | 41        | 头径 7cm     | 嫁接        | 挂果          | 50                       | 2050       |    |
| 5  | 芒果柯      | 1995 年 | 10        | 胸径 8cm     | 嫁接        | 挂果          | 50                       | 500        |    |
| 6  | 李果树      | 1995年  | 3         | 头径 8cm     | 实生        | 挂果          | 30                       | 90         |    |
| 7  | 番石榴 (泰祖) | 1995年  | 3         | 胸径 8cm     | 实生        | 挂果          | 15                       | 45         |    |
| 8  | 竹        | 1995年  | 工丛        |            | 实生        |             | 40                       | 40         |    |
| 9  | 西贡蕉      | 2001年  | 2         |            |           | 11-111      | 12                       |            |    |

Picture 4-1: Price Evaluation for Mr. Huang's Fruit Trees

#### 4.1.2 Compensation Standards for Grave Removal

31. According to the Article 20 of the Provisional Methods on the Acquisition of Collective Land in Urban District of Baise City (Baizhengfa [2005] 64), the following compensation standards applied for grave removing, as shown in Table 4-1. All the graves affected by this project are bone graves.

| Items              | Unit    | Compensation Standards |
|--------------------|---------|------------------------|
| Grave <sup>4</sup> |         |                        |
| 1. Permanent grave | CNY/set | 500.00                 |
| 2. Initial grave   | CNY/set | 1000.00                |

Table 4-1: Compensation Standards for Graves on the Project Area

#### 4.2 Cost Estimates of Local Grave Removal

32. Based on local economic development level, average income and current pricing level, costs of

<sup>&</sup>lt;sup>4</sup> According to local folk custom of Zhuang people, when a person died, he/she will be buried in a very simple wooden coffin. After two or three years, his/her body becomes putrid. Then his/her bone will be picked out of the coffin, and put into a bone jar, then buried again. The first grave is called as "meat grave" in Chinese, We call it as "Initial Grave". The second grave is called as "bone grave" in Chinese. We call it as "Permanent Grave".

grave removal mainly include: expense of new location, worker's expense, and other costs. General process of grave removal is as follows based on local customs:

> After the announcement on grave removal is posted, the family elders convene a meeting for all family members to discuss the grave removal. They generally invite a geomancer to choose a new location for the grave. If the new location belongs to a family member or relative, they do not need to pay for it, or gives some cigarette, wine or rice for them. If the new site is located to others, they need to pay an expense of CNY 300~500.

> After selecting the new site for grave, they need to hire someone to dig the grave. The family needs to prepare wreath and "paper money" and feast for family member and relatives. The removal process of bone grave in Baise city is shown in Picture 4-2.



Picture 4-2: Flow Chart of Grave Removal

33. Based on this process, the cost estimates of removing a grave are listed in Table 4-2.

| Components   | Average Cost | Percentage (%) |
|--|--------------|----------------|
| Labor Costs  |              |                |
| Geomancer  | 150          | 18.8           |
| Grave excavation and collect the bone <sup>1</sup> | 200          | 25.0           |
| Building new grave                                 | 100          | 12.5           |
| Material Costs                                     |              |                |
| New gravestone and script carving                  | 150          | 18.8           |
| New bone jar <sup>1</sup>                          | 50           | 6.3            |
| "Paper money", wreath and candles etc.             | 50           | 6.3            |
| Other Costs  | 100          | 12.5           |
| Total  | 800          | 100%           |

 Table 4-2: Cost Estimates of Grave Removal

Note: 1. It is for wet graves only.

34. Based on the cost estimates of local grave removal, for removing bone graves, total cost is about CNY 550. Therefore, the compensation of CNY500 can cover basic costs of the bone grave removal of the project.

#### 4.3 Resettlement Methods

#### 4.3.1 Resettlement of Contractors

- 35. All of 11 APs signed agreements with BU on April 19, 2012 to terminate their contracts. Both parties agreed that after the contracts are terminated, both parties can waive any potential responsibility for breaching a contract or compensation, and the contract persons are not allowed to claim any interests from BU in any reasons in the future. 11 APs were compensated in a total of CNY 361,559.87 for their fruit trees from January to December 2012. One sample signed agreement for termination of land leasing contract is shown in **Annex 3**.
- 36. During January 13~18, 2014, the due diligence group carried out a 5-day field survey and in-depth interview in the project area (The interviewed persons are listed in Annex 4 and Picture 4-3). Based on the due diligence, all of 11 APs are Baise residents. Mr. Huang Dongbian grew 543 chestnut trees from year 1987. Mr. Qin Jianxue and others started to grow scattered fruit trees on the land in 1996. All of them have formal work positions. They spend their spare time in growing fruit trees. Their primary goal was for personal leisure and entertainment and to protect the environment. After 2000 when they signed the contracts with BU, they started to expand their plantation. Since the leasing cost of land is very low (CNY20/mu/year), and their fruit trees such as mango, guava, pump and litchi are suitable for local climate and do not require much caring, their cost of growing fruit trees on per mu of land from seedling to bearing fruits ranges CNY 400~600. After the termination of their contracts, their lives and work are not impacted. It only changes their entertainment style during their spare time.

#### In-depth interview with contracted fruit growers:

37. Mr. Qin, 61 years old, a retired employee of BU: Mr. Qin started to cultivate the waste land and grew fruit trees from year 1992 and signed a 20-year contract with BU in 2000. Since he has accumulated rich plantation experiences, he grew more than 850 fruit trees over 20 species on his contracted land. The annual cost is about CNY 3,500, and the net income is about CNY 20,000. He received about 85,000RMB for tree compensation. He just saved the compensation in a bank. He has some regret for termination of the contract in advance and being not able to continue his growing, but as a retired staff of BU he receives a good pension, so he is supportive for the further development construction of BU. He can accept the compensation plan because his life will be better guaranteed if the university develops better (i.e., guarantees his welfare will increase).



Picture 4-3: Interview with Fruit Growers by Due Diligence Group

#### 4.3.2 Resettlement of Households Affected by Grave Removal

- 38. Based on the survey, Baise City does not have a public cemetery. Local residents choose the suburb wasteland as the grave site under the advice of geomancers and their own preference. Some choose to bury next to their late ancestors in their rural hometown. With the continuing expansion of urban development, it is frequently common to remove grave. 57 affected households were compensated by BU in a total of CNY 66,000 for removing 132 graves by April 2012.
- 39. During January 13~18, 2014, the due diligence group carried out a 5-day field survey and in-depth interview in the project area (The interviewed persons are listed in Annex 4 and Picture 4-4). Excerpts of the random in-depth interview with affected persons are as follows:

#### Interview 1: Mr. Qin, 61 years old, a retired worker of Baise University

40. I started to work for BU in 1991. The mountainous land lacked administration at that time and was not utilized. Some residents started to build graves on the land. Since 1993, I started to bury the bone ash of 5 family relatives on the land. I consulted the geomancer and he said the land to be a good place for burying bone ash. He agreed to remove all the graves of his relatives for the development of the university. After consulting the geomancer, he finally chose the pine forest behind the Baise Bus Station as the new sites of the graves. On a pre-determined day, he hired 3 workers for help to change the bone jars and remove to new site. He organized a feast for all relatives after the new graves were built. Since the new sites are waste land, owned by one of his good friends, he did not need to pay for them. The total costs of grave removal are about CNY 4,500, and he was totally compensated CNY 3,500 for grave removal. Since there is no uniform compensation standard for grave removal, he was basically satisfied with the compensation plan.

#### Interview 2: Mr. Li, 62 years old, a retired worker of Baise University

41. I was an employee of the school. Since the waste land was very close and there was no regulation that bans building graves on the land, I started to follow other residents to build graves on this piece of land. Back in the middle of 1990s, I buried my parents on the land. As the land will be used for further development of the university, I have removed the graves back to my hometown in Silin village in Tiandong County. The grave removal was mainly carried out by 3 brothers and me. The costs of grave removal mainly include transportation costs, gravestones, and the feast expense for relatives and friends. The total cost is about CNY 1,100. After the grave removal, I was compensated by the university CNY 1,000.

#### Interview 3: Mr. Li, 63 years old, a retired employee of Baise University

42. My family had 5 graves on the mountainous land, all being the bone graves. Since the geomancer advised that the land was good place, and I knew the land belongs to the school. I estimated at the time that there would be a public cemetery in Baise city when the land was used for school construction. I intended to build the graves there temporarily. I understand and support for the decision to remove the grave for further development of the university. After knowing the announcement for grave removal on January 8, 2010, I invited a geomancer and he advised me to choose a new site in Dongsun for the new grave. I bought a piece of collective waste land in Dongsun in February 2011 to bury the grave. Together with the land cost, I paid relatively high cost for the grave removal, and the compensation amount only cover basic costs. But it is better than none.

#### Interview 4: Mr. Qin, 59 years old, an in-service worker of Baise University

43. My family had 3 graves on the project land. Since the mountainous land lacks administration, I started to build grave on the land in 1994. After noticed the announcement to remove the grave, I went to register the grave to the office of general services in the university. I and the school staff went to confirm the grave. Afterward, I commenced to remove the graves. I invited a geomancer for advice to determine the new grave site and then hired workers for help to remove the grave. The whole process took me 3 days. After the grave removal, I started to claim the compensation from the university. It took about another one month. I got paid CNY 1,500 from the financial department on April 20, 2011. Since I have acquaintance who own the land on the opposite maintains, I removed the grave there. Since I did not pay for the land, the compensation amount can basically covered the cost of grave removal.

#### Interview 5: Mr. Zhang, a retired enterprise employee in Baise city

44. My parents were born in Hebei province and migrated to south parts of China under the call of the state decades ago. My father passed away in 1999. My friend advised to bury my father on the land as it was believed to be a good place. I was informed to remove the grave through telephone from Baise University staff. They advised me to meet at the school to discuss over compensation issues. I then invite a geomancer and removed the grave onto a wasteland next to the crematory. Since the land will be used for the school's further construction development, and we were compensated according to relevant laws and regulations, I accepted the compensation plan. However, I would like to suggest that Baise City set up a public cemetery in a timely manner to avoid further grave removal in the future.



Picture 4-4: Due Diligence Group Interviewed the Affected Persons

### 5. Participation and Consultations

45. During the whole process of land clearance, BU paid high attention to the participation and consultation of APs. It kept open mind for suggestions from APs and carefully discussed the work plan. It also entrusted an independent agency evaluate the compensation prices. These ensured the legitimate rights and interests of APs and to minimize the impacts on them as well as on other residents in the project area.

46. The project working groups have held several meetings and discussions to listen to suggestions and requirements of APs, and they also discussed together with the APs and the independent agency the compensation plans. The working groups have fully consulted with APs over the grave removal plan and the compensation standards. To make sure every AP be informed the grave removal, the working groups have taken the following measures: (i) put the removal announcement on the grave when they surveyed and registered the graves; (ii) post the announcement on the university website, notice boards and Youjiang Daily; (iii) put a notice board on the entrances of mountainous land and designated special staff at the entrances on the Tomb-sweeping Festival to inform affected persons over grave removal. The ways of information release are shown in Picture 5-1 and Picture 5-2. The process of public participation and consultations and information release are listed in Table 5-1 and Table 5-2.



Picture 5-1: Announcement Pasted on the Numbered Gravestone



Picture 5-2: Announcements Put on the Entrances of Mountainous Land

| Table | 5-1: F | Public | Part | icipatio | n |
|-------|--------|--------|------|----------|---|
|       |        |        |      |          |   |

| Time         | Contents                       | Participants   | Results of Discussion                                     | Implementation<br>Progress |
|--------------|--------------------------------|--|---|----------------------------|
| June 2009    | Project kick-off<br>meeting    | Staff from Baise municipal<br>government, project<br>working group, Baise<br>University, and legal<br>counsel etc. | Set up special working groups<br>and make work plans      | Completed                  |
| October 2009 | Survey on<br>physical quantity | Working group members  | Survey, calculate and register the fruit trees and graves | Completed                  |

| January 2010<br>~ March 2012 | Release<br>announcement                                      | Working group members  | Terminate the contract<br>agreements and release<br>announcement of grave<br>removal to affected persons on<br>through notice board,<br>newspaper, television and<br>telephone | Completed |
|------------------------------|--|--|--|-----------|
| 2010 ~ 2011                  | Consultation<br>meetings with<br>contracted fruit<br>growers | Staff from Baise<br>University and the<br>independent price<br>appraisal agency,<br>contracted fruit growers | All relevant parties meet to<br>discuss the compensation<br>plans and standards by fully<br>listening to the suggestions<br>and proposals of affected<br>persons               | Completed |
| 2010 ~ 2011                  | Consultation<br>meetings over<br>grave removal<br>issues     | Baise University staff and<br>the persons affected by<br>grave removal                                       | Inform the affected persons of<br>relevant policies on grave<br>removal and discuss with them<br>to finalize the compensation<br>plans   | Completed |
| March 2011 ~<br>January 2013 | Payment of<br>compensation<br>funds                          | Baise University staff,<br>contracted fruit growers<br>and the persons affected<br>by grave removal          | Pay compensations to the<br>persons affected by contracted<br>land and grave removal   | Completed |

#### Table 5-2: Announcements

| Time                         | Methods   | Objectives                                     | Contact  |
|------------------------------|---|--|--|
| June 2009 ~<br>November 2010 | Inform all affected<br>persons by releasing<br>information on Baise<br>University website,<br>notice board and<br>telephone | For contracted fruit growers                   | Baise University Land Clearance Working<br>Group, Baise University Chengbi Campus<br>Administration Committee Office<br>Mr. Zhao Tel: 0776-2940826 |
| January 2010                 | Youjiang Daily  | For households<br>affected by<br>grave removal | Baise University Chengbi Campus<br>Administration Committee Office<br>Mr. Zhao Tel: 0776-2940826   |
| March 2012                   | Youjiang Daily  | For households<br>affected by<br>grave removal | Baise University Chengbi Campus<br>Administration Committee Office<br>Mr. Zhao Tel: 0776-2940826   |
| March 2012                   | Youjiang Daily  | For households<br>affected by<br>grave removal | Baise University Chengbi Campus<br>Administration Committee Office<br>Mr. Zhao Tel: 0776-2940826   |

## 6. Conclusions

#### 6.1 Conclusions

- 47. BU has owned the title to use the land since year 1971. In April 2009, BU was approved by Baise Municipal Government to develop Chengbi Campus. BU started to terminate the fruit tree contracts and clear the land in June 2009. On March 11, 2010, BU was granted the planning permit for its Chengbi Campus Expansion Project (Ref. No.: 45100120100050). The total area for construction land is 1,498 mu. The Phase I construction project started in November 2010. This Project is the Phase II construction and will involve 150 mu out of 1,498 mu land. The Chengbi Campus Expansion Project affected 11 contracted tree growers, 15,281 fruit trees; and 57 households, removal of 132 graves. This Project only affected 14 households and 42 graves on the 150 mu land; no fruit trees had been on this land.
- 48. To respect local customs and mitigate loss of APs, sufficient time for APs to arrange their work and remove graves were provided. BU started the procedures in advance to prepare the land for clearance. It had terminated all the contracts and completed the compensation process as of December 2012. A total CNY 361,559.87 was paid to the APs. All the graves were removed as of April 2012, and a total CNY 66,000 had been paid. Among which, CNY 21,000 was paid to 14 affected households for the grave removing under this Project.
- 49. During the whole process, Baise Municipal Government, and BU followed relevant national laws and local regulations. They also respected local customs and paid full attention to the suggestions and requirements of APs. The whole land clearance and resettlement process was fully understood and supported by APs, which ensure the smooth progress of the project construction. There are no remaining issues and no further actions are required.

#### Annexes

- Annex 1: Notice on Allocating Houses and Production Base of Baise Prefecture Work-Study School to Baise Teachers School
- Annex 2: Land Leasing Contract
- Annex 3: Agreement on Termination of Land Leasing Contract
- Annex 4: Question List of Interview with Affected Persons
- Annex 5: Compensation Rates for Affected Trees

Annex 1: Notice on Allocating Houses and Production Base of Baise

Prefecture Work-Study School to Baise Teachers School

原材料出处百足专达革基公 未经本馆 1971 全宗号 不得擅自么 目录号 39 從 号 業巻号 12 48-49 百色市档案镇档案材料 之间10年 百色市有案馆档案材 2010年1月12日 百色专区 革命委員会文件 百革字(71) 3 号 高 最 指示 -4 教育要革命 关于把百色专区半农半读学校房屋 和生产基地拨给百色师范学校的通知 根据我专区教育事业发展的需要,专区革委已决定百色师范从今 年春季开始招生。为了全面落实毛主席光辉的《五、七指示》,"使受 教育者在德育、智育、体育几方面都得到发展, 成为有社会主义觉悟 . 1 .



#### (Translation)

## Baise Revolutionary Commission Ref.: BGZ (71) 3

## Notice on Allocating Houses and Production Base of Baise Prefecture Work-Study School to Baise Teachers School

According to the need of education development of Baise Prefecture, this Commission has approved Baise Teachers School to start enrollment from the spring semester. In order to carry out Chairman Mao's "May-Seventh" Instructions that "All educatees should be cultivated morally, intellectually and physically so that they can become the educated labors who have the sound socialist consciousness", it is resolved that the houses and production base (including the land, fruits trees and forest thereof) of Baise Prefecture Work-Study School shall be transferred and allocated to Baise Teachers School. All these properties shall be administrated by Baise Teachers School from January of the current year. Other properties shall remain under the administration of Baise Prefecture Work-Study School. Upon receipt of this Notice, both Schools shall designate special personnel for the said hand-over.

Issued by: Baise Revolutionary Commission (Sealed) Date of Issuance: January 6, 1971

C.C. to: .....

(Original copy was attested by Baise Archives on January 12, 2010)

#### **Annex 2: Land Leasing Contract**

|              | 11 11 |
|--------------|-------|
| 档号           | 序号    |
| 2000 -X201-0 | 5 66  |

## 山地承包合同

发包方(称甲方):百色地区民族师范学校

承包方: (称乙方) 梁 元 責 甲方农场位于原雷达站坡脚及澄碧河水库旧排灌渠七洞口水沟 至河口一段水沟两侧坡地为甲方农场用地。为了加快农场建设,进 一步提高经济效益,甲方决定将农场划地分片对外承包。现甲、乙 双方就承包一事达成以下条款,共同遵照执行。

一、甲方将农场坡地东从七洞口起西至洞口下方山塘首北侧坡 地划分子乙方,由乙方承包种植经济林、(以果树林为主,其它农 作物间种为次)经双方实地丈量共计**发生(14)**((15**5**))

二、承包期从二000年至=0=0年共大年。

三、乙方每年每亩坡地向甲方交纳承包金20元,共计**为和**和2222

四、承包期内乙方所属的坡地在2003年前必需全部种植以果树林为主的经济林木,同时可多项发展立体种养,所有投资由乙方自行解决。乙方所承包的山地经营管理权属乙方,所有收益亦归属乙方。 为是 我这个好生地,205 代代 是 五 学 4

五、承包期内双方不得单方中途终止协议,如单方违约需赔偿 另一方,经有关部门裁定的全部经济损失的2倍。如乙方不按时交 费,限期一个月内甲方收回承包地。承包期满后土地上所属植物等 乙方无偿转给甲方乙方有优先续约的权利。

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六、有关水、电,甲方应提供方便。 七、甲方有承担维护乙方权益义务。 八、乙方在承包期内必需遵守国家的环境保护法、野生动物保 护法、森林法、水资源保护、防火护林等各种法规。如违法乙方承 担全部责任。乙方承包期间发生伤亡事故或意外事故甲方不负任何 责任。 九、乙方承包期间必须遵守甲方的有关治安管理规定和计划生 育条例,遵守农场基地承包人员责任公约。 十、以上条款经双方签字后生效,承包期满足 方有续订合同优先权,如有其它未及之处,双方 本合同一式两份,甲、乙双方各执一份。 甲方:百色地区民族师范学校 经办人: 日子毛 时海 乙方:梁元青 (签字盖章) 二000年三月 B 1000 🛛 5014 04/10 11:53 EVX 01118849289

#### Land Leasing Contract

Lessor (Party A): Baise Prefecture Nationality Teachers School Lessee (Party B: Liang Yuanqing (I.D. Number: 452626196808213594)

The land on the foot of the former Radar Station and the land on both sides of the ditch between Qidongkou of former drainage canal of Chengbihe reservoir and the river mouth are the land of the farm of Party A. In order to promote the economic development of the farm of Party A, Party A decides to divide the farmland for leasing out. Both Party A and Party B agrees the following terms and conditions upon the leasing out of the farmland.

- I. Party A agrees to lease out the following land of the farm to Party B: land on the north side from Qidongkou in the east to the lower pond of Dongkou in the west. Party B shall rent this land for growing economic forest (mainly of fruit forest and supplemented by other crops). The total area of the land certified by both Parties is 15.5 (fifteen point five) mu.
- II. The leasing period is 20 (twenty) years from 2000 to 2020.
- III. Party B shall pay to Party A leasing rent at the rate of CNY20/mu each year. The annual leasing rent is CNY310 (Three hundred and ten) and which shall be paid by Party B to Party A by end of January of each year.
- IV. Within the leasing period but before the year of 2003, Party B shall, at his own costs, complete the cultivation of economic trees mainly of fruit trees but supplemented by stereo cultivation and breeding on the leased land. Party B shall be entitled to the management, operation as well as the economic yields of the leased land. In case land acquisition is required by the government, Party B shall unconditionally return the leased land to Party A at no costs.
- V. Within the validity of the leasing period, either Party shall not be allowed unilaterally terminate this Contract without the consent of the other Party. Any Party in violation of the Contract shall make compensation to the other Party at 2 (two) times of the economic losses certified by concerned department. If Party B fails to pay the leasing rent to Party A on time or fails again within one extended month, Party A shall be entitled to retrieve the leased land. Upon expiration of this Contract, all the plants grown on the leased land shall belong to Party A at no costs, and Party B shall have the priority in extension of leasing Contract.
- VI. Party A shall provide necessary conveniences in connection of water and electricity.
- VII. Party A shall have the rights in safeguarding the rights and interests of Party B.
- VIII. During the leasing period, Party B shall obey all relevant laws and regulations including but not limited to the laws and regulations in environmental protection wild animals protection, forest protection and water resources protection etc. Party B shall take all responsibilities that are generated from any violations of such laws and regulations. Party B shall take all responsibilities for any damages, deaths or accidents during the leasing period. Party A shall have no responsibilities thereto.
- IX. During the leasing period, Party B shall abide by the relevant regulations on public security and birth control, as well as observe the regulations that are binding on all

lessees of the farm.

- X. The Leasing Contract shall come into effect upon signatures of both Party A and Party B, and shall expire upon completion of the leasing period. Upon expiration of the Contract, Party B shall have the priority in extension of the leasing Contract with Party A. Any additional issues arising from implementation of this Contract shall be resolved through mutual negotiation.
- XI. This Contract is made in duplicates. Both Party A and Party B shall have one copy.

Party A: Baise Prefecture Nationality Teachers School (signature and sealed)

Party B: Liang Yuanqing (signature)

Date: March 1, 2000

#### **Annex 3: Agreement on Termination of Land Leasing Contract**

## 关于提前回收澄碧校区承包土地 解除山地承包合同的协议书

甲方: 百色学院

乙方: 梁元青

甲方将位于原百色地区民族师范学校(2003年划归百色学院) 的土地于 2000 年 3月 1日发包给乙方用于种植果树。因国家建 设需要, 百色市人民政府决定进行百色学院澄碧校区扩建工程建 设,并于 2010 年 11 月 8 日举行了开工典礼。鉴于乙方承包土地 在扩建工程范围之内,为不影响国家建设,甲乙双方签订的《山 地承包合同书》需提前终止。百色学院澄碧校区扩建工程对发展 百色高等教育推动百色市经济发展具有重要的战略意义,甲乙双 方对此均达成共识,现经协商一致,就山地承包合同解除及补偿 相关事宜自愿达成如下协议:

一、山地承包合同的解除

中乙双方同意解除于2000年<u>3</u>月<u></u>日签订的《山地承 包合同书》。

二、乙方承包土地面积、承包费及果树的数量等情况

1、甲方发包给乙方的土地面积为<u>15.5</u>亩,承包费为<u>310</u>元 /年,乙方已交至2006年,共计<u>1860</u>元(2007年以后缓交)。

2、甲乙双方经清点确认,乙方在承包土地种植的各类果树总数为<u>3344</u>棵(株、从),具体见附后详单。

三、甲方支付乙方经济补偿款的依据和数额

1、甲方对发包给乙方承包经营的土地依法享有国有土地使用 权,该土地不属于农民集体所有,因此,甲方回收承包土地不属 于征地,不能直接适用国家有关征地补偿标准进行补偿。由于国 家对此并无相关法律直接调整,也未制定有具体的补偿标准,甲 方参照百色市百政发(2001)144 号《百色市征用农民集体所有

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土地及地上方苗和的直边补偿标准的规定3,站合甲方的线济状况。 基甲刀在该求但会同中的收益,乙力受益情况确定补偿数额。

2、甲方根据以上市标准确定前支付乙方补偿费为人限重

15377.56 To-

3. 甲方定至2011年 月 日前一次性付清龄乙万。

四,关于补偿款的领取和承包土地的移变

1.乙方应当提照本协议第三条设定的时间到甲方财务处装取 升给款项, 遗历的, 不要申甲方的 开工建设,

2. 乙方应当在我到甲方补偿款后 5 打伤自己断防承包提出的建 就物包把上的布物,现有的果被及休水等不断固长加处理;与承望山,埋 起变任甲方。逾期的。甲方有初处胃承包地下的任何期着物,冰 包她由即方接管处理

五、合同解除后的法律后果

本协议举行后, 甲乙双方就承包山地的法律权利义务关系除止, 甲方按照本协议规定向乙方支付补偿费用。除此之外, 双对 可不负违约或赔偿之责任, 乙方不能以任何理由再向甲方提出其 他权利请求。

六、合同的生效及其他

1. 本协议原用乙双方等学级能带情况效。

2. 本协议 式评价, 甲方顶三份, 些方抗一作。


#### (Translation)

# Agreement on Termination of Land Leasing Contract in Chengbi Campus

# Party A: Baise University Party B: Liang Yuanqing

Party A leased out the farmland of the former Baise Prefecture Nationality Teachers School (incorporated with Baise University in 2003) to Party B on 3 March 2000 for cultivation of fruit trees. Due to project development, the Baise Municipal Government plans to launch the expansion project of Chengbi campus of Baise University, for which, the project commencement ceremony was held on 8 November 2010. Considering that the leased land by Party B is located within the scope of the expansion project, in order to facilitate the project construction, both Party A and Party B are aware of the strategic significance of the expansion project in promoting the higher education and economic development of Baise city, after discussion, both Party A and Party B mutually agree to terminate the Land Leasing Contract upon the following terms and conditions on termination and compensation.

## I. Termination of Land Leasing Contract

Both Party A and Party B mutually agree to terminate the Land Leasing Contract signed by both Parties on 1 March 2000.

## II. Land area, leasing rent and quantity of fruit trees

- 1. The total area of the land leased to Party B by Party A is 15.5 mu, the leasing rent is CNY310/year. Party B had paid the leasing rent to Party A till 2006 for a total amount of CNY1,860.00 (No payment was made after 2007).
- 2. Both Party A and Party B have verified at site total quantity of the fruit trees grown on the leased land. The total quantity of fruit trees of various varieties cultivated by Party B is 3,344 pieces as shown in the attached table.

## III. Basis and amount of compensation to Party B by Party A

- 1. Party A has the entitlements of use rights of the state-owned land that was leased to Party B. The leased land does not belong to farmer's collective land. Therefore, the retrieving of the leased land by Party A shall not be deemed as land acquisition, and so the compensation standards of the government for land acquisition shall not be applicable to such land-retrieving. Due to the fact that relevant regulations or adjustment for such compensation of the government are not available, both Party A and Party B mutually agree that the compensations shall be made with reference to *Compensation Rates for Acquisition of Collective Land, Land Attachments and Young Crops in Baise City* (Ref. BZF(2001)144) as well as according to the financial situation of Party A and the benefits both Party A and Party B that are generated from the land leasing.
- 2. Based on the above principle, Party A shall pay a total compensation of CNY15,377.56 to Party B.
- 3. Party A shall pay to Party B the above amount of compensation before \_\_/ \_\_/2011 (day/month/year) at one time.

## IV. Payment of compensation and hand-over of leased land

1. Party B shall sign to receive the said compensation at the financial office of Party A

before the date specified in Clause 3 of Section III of this Agreement, or otherwise such shall not affect the commencement of the project of Party A.

2. Within 5 (five) days after receiving compensation made by Party A, Party B shall demolish structures or attachments on the leased land. The existing growing fruit trees shall not be cut down and shall be hand over to Party A along with the leased land. In case Party B fails to demolish these structures or attachments within the specified period, Party A shall take over the land and have the rights for disposal of any attachments thereof.

## V. Legal binding on termination of Land Lease Contract

Upon effectiveness of this Agreement, all legal bindings respectively on Party A and Party on as arising from the previous Land Lease Contract shall be waived off and Party A shall pay the specified compensation to Party B timely pursuant to this Agreement. In addition, after making compensation, either party shall not be deemed as in breach of the Land Lease Contract and shall not lodge any claims against the other Party. Party B shall not lodge any other claims against Party A at any reasons.

## VI. Effectiveness of Agreement and others

- 1. This Agreement shall become effective upon being signed or sealed by both Parties.
- 2. This Agreement is made in quadruplicate, Party A shall hold three copies, Party B shall hold one copy.

Party A: Baise University (signature and sealed)

Party B: Liang Yuanqing (signature)

Date: February 6, 2012

# Annex 4: Question List of Interview with Affected Persons (For

# contracted fruit growers)

- 1. In what manner did you first know the contracted land to be reclaimed before the contracted period?
- 2. What kinds of fruit trees do you grow on the contracted land?
- 3. How much did you earn from the contracted land?
- 4. Are you satisfied with the measurement of physical quantities?
- 5. Are you satisfied with the compensation plans for early termination of contract agreement?
- 6. Are you satisfied with the compensation plans for the land-attached structures?
- 7. Did you participate in the consultation process of the compensation plans?
- 8. Are you satisfied with the implementation of the compensation policies?
- 9. How did you express your opinions in the process of agreement termination and claiming for compensations?
- 10. Are you satisfied with your current living status?

#### Question List of Interview with Affected Persons (For households affected by grave removal)

- 1. In what manner did you first know the information to remove the graves?
- 2. When did you build the graves on the project land?
- 3. What do you think about the grave removal?
- 4. What are the local customs for grave removal?
- 5. What is the process of grave removal?
- 6. How much did you spend for grave removal?
- 7. Are you satisfied with the compensation policies for grave removal?
- 8. Are you satisfied with the implementation of the compensation policies?
- 9. How did you express your opinions in the process of grave removal?
- 10. Are you satisfied with your current living status?

|     |               |               | Diameter/ |        | Linit Drive |
|-----|---------------|---------------|-----------|--------|-------------|
| No. | Name          | Planting Year | height    | Mature | Unit Price  |
|     |               |               | (cm)      |        | (yuan)      |
| 1   | Guava         | 2000          | 7/3       | Yes    | 10          |
| 2   | Guava         | 1997          | 20        | Yes    | 15          |
| 3   | Guava         | 2000          | 8/2.2     | Yes    | 15          |
| 4   | Guava         | 2002          | 8.5/3.5   | Yes    | 15          |
| 5   | Mango         | 1995          | 14        | Yes    | 50          |
| 6   | Mango         | 2003          | 2         | No     | 18          |
| 7   | Mango         | 1997          | 7         | Yes    | 50          |
| 8   | Mango         | 2002          | 9/2.6     | Yes    | 30          |
| 9   | Chestnut      | 2003          | 6/3.5     | No     | 15          |
| 10  | Chestnut      | 1996          | 35        | Yes    | 60          |
| 11  | Chestnut      | 2003          | 6/2.1     | Yes    | 20          |
| 12  | Pomelo        | 1999          | 15        | Yes    | 60          |
| 13  | Pomelo        | 2003          | 9/2.3     | No     | 15          |
| 14  | Pomelo        | 2001          | 10/4.2    | Yes    | 40          |
| 15  | Banana        | 2004          | -         | Yes    | 80          |
| 40  | Chicken       | 0000          |           | N      | 0           |
| 10  | Banana        | 2003          | -         | res    | 9           |
| 17  | Cattle Banana | 2003          | -         | Yes    | 9           |
| 18  | Sweet Peach   | 2003          | 6/3.5     | No     | 13          |
| 19  | Sweet Peach   | 2004          | 3         | No     | 13          |
| 20  | Sweet Peach   | 2003          | 8/2.9     | Yes    | 20          |
| 21  | Sweet Peach   | 2001          | 15/4      | Yes    | 18          |
| 22  | Yellow Fruit  | 2000          | 6/2.7     | Yes    | 30          |
| 23  | Yellow Fruit  | 2004          | 9/3       | Yes    | 20          |
| 24  | Yellow Fruit  | 2001          | 10/2.9    | Yes    | 30          |
| 25  | Carambole     | 2000          | 7/3       | Yes    | 30          |
| 26  | Carambole     | 1998          | 26        | Yes    | 40          |
| 27  | Carambole     | 1999          | 20/2-3    | Yes    | 40          |

# Annex 5: Compensation Rates for Affected Trees



# Consultant's Report

# Supplementary Appendix 5 Poverty and Social Analysis

Project Number: 47009 / TA 8448-PRC September 2014

# People's Republic of China: Guangxi Baise Vocational Education Development Project

Asian Development Bank

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### I. INTRODUCTION

1. This report proposes the poverty and social analysis (PSA) and social development strategies for the Guangxi Baise Vocational Education Development Project (the project), which will be financed by Asian Development Bank (ADB). The implementation period of the project will be five years of 2015–2019.

2. A PSA has been made to examine the opportunities for the project to address social, poverty, gender and ethnic minority (EM) issues that either support or prevent multilevel technical and vocational education and training (TVET) in Baise from fulfilling its potential contribution to sustainable development. Based on findings from the PSA, the social development strategy is proposed with findings and recommendations from related assessments on teacher training and curriculum development, school-industry relations, combination of the local employment market, and regional cooperation with the Greater Mekong Subregion (GMS).

3. Some social, poverty, and gender targets have been proposed and included in Section VII of this PSA, i.e. Social Action Plan (SAP) and Gender Action Plan (GAP). They are also incorporated into the Design and Monitoring Framework (DMF), presented as Appendix 1 to the Draft Final Report.

#### II. PROJECT SUMMARY

4. The project prepared for ADB financing is described according to its long-term impact, midterm outcome and near-term outputs, which are supported by a number of activities to ensure the goals of the project are eventually met and sustained.

#### A. Impact, Outcome, and Outputs

5. The **impact** of the proposed project will be economic development and industrial transformation of Baise Municipality. The **outcome** will be a high quality, flexible, and responsive MLT system developed which meets industry needs.

6. The proposed project is organized into four outputs: (i) TVET quality improved and capacity developed; (ii) Chengbi campus constructed and environmental sustainability promoted; (iii) TVET innovation and relevance promoted; and (iv) project implementation management.

#### B. Implementing Arrangements

7. The Baise Municipal Government (BMG) will be the Executing Agency (EA) for the project. The BMG has set up an inter-agency Baise Project Leading Group, who will guide, supervise and provide coordination support for the implementation of the project. The Baise Project Management Office (PMO) has been established at the Baise Development and Reform Commission (BDRC). The PMO will be responsible for the day-to-day operation and coordination during project preparation and implementation. The project implementing agency (IA) is BU. BVS, as a secondary vocational school under BU, will be involved in the project as well.

#### III. METHODOLOGIES AND WORK DONE

8. The scope of the PSA covers the social areas affected by the project directly and indirectly. The objectives of the PSA are to optimize the project design through social considerations in order to produce maximum social benefits, and to ensure the social dimensions are fully incorporated into the project final design. The PSA will pay particular attention to the ADB's over-arching objective of poverty alleviation, gender, EM, and related social issues, and identify the ways related to social considerations in which the project can improve the enrollment, in-school education, and employment of local TVET students in the project area in both the short-term and long-term.

9. In order to (i) achieve the objectives of the PSA, (ii) have a better understanding of specific socioeconomic situations, (iii) facilitate analysis of the outcomes of the Project on local social development, and (iv) develop a reasonable assessment, various approaches and methodologies are used throughout the whole process of the impact assessment study, including:

- (i) Desk review;
- (ii) Field observations;
- (iii) Key informant interviews;
- (iv) Focus group discussions; and
- (v) Discussions with other team members of the PPTA, executing agency, implementing agency (IA) and design institute.

10. **Desk review.** The consultants have carefully reviewed the project relevant policies, project background documents, research documents, statistical books and websites of the PRC, Guangxi and Baise, the feasibility study report (FSR) of the project, as well as reports prepared for other ADB funded TVET projects, in particular the Shanxi and Nanning TVET projects in the PRC. Reports and documents provided by key government agencies and the IA were also carefully reviewed.

11. **Key informant interviews.** In total 35 people from 8 key government agencies and the IA were interviewed and consulted once or more times in March and May 2014 to get the first-hand and secondary information, which is exceptionally helpful in understanding the baseline data, government policies and project design needs, and estimating the project impact and benefits related to social development, education, poverty alleviation, and EM and women development. The agencies interviewed include (i) BU and BVS; (ii) Baise Education Bureau (BEB); (iii) Baise Science and Technology Bureau; (iv) Baise Civil Affairs Bureau; (v) Baise Human Resources and Social Security Bureau (HRSSB); (vi) Baise Ethnic Affairs Commission; and (vii) Baise China Women's Federation.

12. **Focus group discussion (FGDs).** Two rounds of FGDs were conducted. A total of eleven FGDs were made with the 38 students and 25 teachers of BU and BVS, as the direct

affected persons, to understand the baseline of poverty, gender and EM, their attitudes towards the project and expectation for the project. These FDGs included the groups with different participants of (i) BU undergraduates, male group, female group, mixed group, and ethnic minority group; (ii) BVC male group, female group, mixed group, Zhuang, Man and Yao peoples; (iii) BVS female group, mixed group, all Zhuang people; (iv) BU teachers, female group, mixed group, ethnic minority group; (vi) teachers and leaders of Baise Agriculture Vocational School and Guangxi Youjiang Business School for Nationalities.

13. In addition, the PPTA team held many meetings and discussions for the project preparation to consult the TVET system design, potential impacts, FSR, environment impact assessment, land acquisition and resettlement due diligence, etc. with the EA, IA, Baise and GZAR relevant government departments. More than 100 people were consulted during the PPTA preparation.

#### IV. PROJECT AREA PROFILE

#### A. General

14. Guangxi Zhuang Autonomous Region (GZAR) is located in the southern part of the PRC and bordered by Yunnan Province to the west, Guizhou Province to the north, Hunan Province to the northeast, and Guangdong Province to the southeast. It is also bounded by Vietnam in the southwest. With the capital city in Nanning, it covers 236,700 km<sup>2</sup> and consists of 14 prefecture-level cities and 7 county-level cities. **Figure 1** shows the location of the GZAR.



Figure 1: Location of GZAR in the PRC

15. The project is located in Baise City, the biggest city in GZAR. As shown in **Figure 2**, Baise is located in northwestern GZAR bordering the provinces of Guizhou and Yunnan and the

country of Vietnam. Baise has a total land area of 36,300 km<sup>2</sup>. It administers 1 district (Youjiang) and 11 counties, and 2 street administration offices and 133 towns.



Figure 2: Location of Baise City in GZAR

#### B. Population

16. GZAR had a total population of 52.40 million in 2012, among which 46.82 million are permanent resident population. <sup>1</sup> Among the total population, nearly 80.20% was rural population, much higher than the national average of 47.43%. In addition, about 47.35% of the total population was female, close to that the national average of 48.75%. It is an area with many EM peoples living there, including Zhuang, Yao, Miao, Dong, Mulam, Maonan, Hui, Jing, Yi, Shui and Gelao, and many other smaller EM population groups. GZAR has the largest EM population in the country, which accounted for 37.18% of the region's permanent resident population, much higher than the national average level of 8.4%. The single largest minority group is the Zhuang minority group, representing 31.39% of the region's total population in 2010. It is also the EM group with the largest population in the country.<sup>2</sup> See **Table 1** for details.

|                  | National |                | Gu     | angxi          | Baise  |                |  |
|------------------|----------|----------------|--------|----------------|--------|----------------|--|
| Item             | Number   | Percentage     | Number | Percentage     | Number | Percentage     |  |
| Total population | 135,404  | -              | 5,240  | -              | 409    | -              |  |
| Urban            | 71,182   | 52.57 <b>%</b> | 1,027  | 19.80 <b>%</b> | 50     | 12.13 <b>%</b> |  |
| Rural            | 64,222   | 47.43%         | 4,166  | 80.20 <b>%</b> | 359    | 87.87%         |  |
| Male             | 69,395   | 51.25 <b>%</b> | 2,759  | 52.65 <b>%</b> | 211    | 51.73%         |  |
| Female           | 66,009   | 48.75 <b>%</b> | 2,481  | 47.35 <b>%</b> | 197    | 48.27%         |  |

| Table 1: Population of Project | : Area in 2012 | (10,000 | persons) |  |
|--------------------------------|----------------|---------|----------|--|
|--------------------------------|----------------|---------|----------|--|

<sup>1</sup> Source: Guangxi Statistics Yearbook 2013.

<sup>2</sup> Source: The government website: http://www.gxzf.gov.cn/zjgx/gxrw/qhrk/201402/t20140211\_428687.htm

| Ethnic Minority | 11,379 | 8.40% | 1,988 | 37.94 <b>%</b> | 354 | 86.69% |
|-----------------|--------|-------|-------|----------------|-----|--------|
|-----------------|--------|-------|-------|----------------|-----|--------|

Source: China Statistic Yearbook 2013, Guangxi Statistic Yearbook 2013 and Baise Statistic Yearbook 2012 (containing data for 2012).

17. The project city of Baise had a total population of 4.09 million by the end of 2012, among which 3.51 million were permanent resident population. The proportion of urban population was only 12.13%, much lower than the national average (52.57%) and some lower than the GZAR average (19.80%). The proportion of female was close to that of the country and GZAR. Same as GZAR, it is dominated by EM people, which accounted for about 86.70% of the total population. The single largest minority group is also the Zhuang minority group, representing 78.64% of the region's total population, more than double of that of the Region.

#### C. Economic and Social Profile

18. GZAR is one of the 12 less-developed provinces and autonomous regions in the western part of the PRC. As shown in **Table 2**, in 2012, Guangxi's gross domestic product (GDP) was CNY1,303.51 billion, ranking at 18<sup>th</sup> among 31 provincial-level administrations<sup>3</sup> in the PRC, but its per capita GDP was only CNY27,952, ranking only at 27<sup>th</sup>. As for the proportions of the three industries, Guangxi has an obviously higher proportion of primary industry (agriculture) and much lower proportion of tertiary industry (transportation, services, etc.) compared with the national average level.

19. Baise City is one of the 14 national intensively poverty-stricken areas of the PRC. Compared with Guangxi average level, Baise City had an even lower per capita GDP, being CNY21,282, ranking at only 10<sup>th</sup> at among 14 cities of GZAR, being 76% of the GZAR average and less than half of that of Fangchenggang City as the top one. Baise's GDP was CNY75.5 billion, ranking at 6<sup>th</sup> among GZAR. The proportions of the primary, secondary and tertiary industries of Baise are 18.2%, 58.4% and 27.0%, respectively. Obviously, that of the tertiary industry is much lower than the national average level and ranked as last but one in GZAR.

|          | Gross               |                  | Per Capita |                    |       |                   |       |              |  |
|----------|---------------------|------------------|------------|--------------------|-------|-------------------|-------|--------------|--|
| Area     | Domestic<br>Product | Primary Industry |            | Secondary Industry |       | Tertiary Industry |       | GDP<br>(CNY) |  |
| National | 518,942.1           | 52,373.6         | 10.1%      | 235,162.<br>0      | 45.3% | 231,406.<br>5     | 44.6% | 38,420       |  |
| Guangxi  | 13,035.1            | 2,047.2          | 15.7%      | 5675.3             | 43.5% | 4615.3            | 35.4% | 27,952       |  |
| Baise    | 755.2               | 137.1            | 18.2%      | 414.2              | 54.8% | 203.9             | 27.0% | 21,282       |  |
| Nanning  | 2,503.2             | 323.0            | 12.9%      | 960.7              | 38.4% | 1,219.5           | 48.7% | 37,016       |  |
| Liuzhou  | 1,820.6             | 147.4            | 8.1%       | 1,147.4            | 63.0% | 525.9             | 28.9% | 47,795       |  |
| Guilin   | 1,485.0             | 271.8            | 18.3%      | 697.5              | 47.0% | 515.7             | 34.7% | 30,849       |  |

#### Table 2: Economic Sectors in Project Area, 2012 (CNY100 million)

<sup>3</sup> Not including Taiwan, Hong Kong and Macao.

|                   | Gross               |            | Per Capita |           |          |             |         |              |
|-------------------|---------------------|------------|------------|-----------|----------|-------------|---------|--------------|
| Area              | Domestic<br>Product | Primary II | ndustry    | Secondary | Industry | Tertiary II | ndustry | GDP<br>(CNY) |
| Wuzhou            | 832.6               | 104.8      | 12.6%      | 525.2     | 63.0%    | 202.5       | 24.3%   | 28,523       |
| Beihai            | 630.1               | 127.4      | 20.2%      | 303.7     | 48.0%    | 199.0       | 31.6%   | 40,372       |
| Fangcheng<br>gang | 444.0               | 61.2       | 13.8%      | 233.6     | 53.0%    | 149.3       | 33.6%   | 50,302       |
| Qinzhou           | 691.3               | 166.8      | 24.1%      | 289.2     | 42.0%    | 235.4       | 34.1%   | 22,147       |
| Guigang           | 679.2               | 148.7      | 21.9%      | 273.4     | 40.0%    | 257.1       | 37.9%   | 16,281       |
| Yulin             | 1,102.1             | 229.2      | 20.8%      | 482.3     | 44.0%    | 390.5       | 35.4%   | 19,822       |
| Hezhou            | 394.2               | 85.4       | 21.7%      | 183.5     | 47.0%    | 125.3       | 31.8%   | 19,922       |
| Hechi             | 492.7               | 126.3      | 25.6%      | 174.3     | 35.0%    | 192.0       | 39.0%   | 14,472       |
| Laibin            | 514.3               | 127.0      | 24.7%      | 236.1     | 46.0%    | 151.2       | 29.4%   | 24,183       |
| Congzuo           | 530.5               | 142.9      | 26.9%      | 217.0     | 41.0%    | 170.6       | 32.2%   | 26,288       |

Source: China Statistic Yearbook 2013, Guangxi Statistic Yearbook 2013 and Baise Statistic Yearbook 2012 (containing data for 2012).

20. As presented in **Table 3**, Youjiang District, as the urban area of Baise City, has the highest per capita GDP of CNY43,767 among all counties/districts in 2012. It is the only district/county in Baise that has a per capita GDP higher than the national average of CNY38,420. Tiandong County is ranked at 2<sup>nd</sup> with a per capita GDP of CNY31,041, higher than the provincial average in addition to Youjiang District. The other ten counties all have a much lower per capita GDP, especially Napo, Lingyun, Leye and Xilin, whose numbers were just somewhat above CNY10,000.

|          | Gross               | Of which         |       |                    |       |                   |       |               |
|----------|---------------------|------------------|-------|--------------------|-------|-------------------|-------|---------------|
| Area     | Domestic<br>Product | Primary Industry |       | Secondary Industry |       | Tertiary Industry |       | GDP<br>(yuan) |
| Youjiang | 1,659,869           | 205,500          | 12.4% | 960,579            | 57.9% | 493,790           | 29.7% | 43,767        |
| Tianyang | 696,051             | 197,099          | 28.3% | 304,280            | 43.7% | 194,672           | 28.0% | 21,999        |
| Tiandong | 1,120,902           | 215,990          | 19.3% | 665,485            | 59.4% | 239,427           | 21.4% | 31,041        |
| Pingguo  | 1,119,459           | 126,411          | 11.3% | 779,636            | 69.6% | 213,412           | 19.1% | 25,463        |
| Debao    | 513,272             | 86,789           | 16.9% | 316,201            | 61.6% | 110,282           | 21.5% | 17,072        |
| Jingxi   | 1,031,050           | 129,010          | 12.5% | 700,356            | 67.9% | 201,684           | 19.6% | 20,468        |
| Napo     | 155,867             | 57,267           | 36.7% | 28,678             | 18.4% | 69,922            | 44.9% | 10,053        |
| Lingyun  | 199,967             | 58,790           | 29.4% | 80,060             | 40.0% | 61,117            | 30.6% | 10,651        |
| Leye     | 150,844             | 50,379           | 33.4% | 41,333             | 27.4% | 59,132            | 39.2% | 10,036        |

Table 3: Economic Sector of District/Counties of Baise City, 2012 (CNY10,000)

| Tianlin | 271,728 | 105,296 | 38.8% | 72,814  | 26.8% | 93,618  | 34.5% | 11,986 |
|---------|---------|---------|-------|---------|-------|---------|-------|--------|
| Xilin   | 148,085 | 63,312  | 42.8% | 27,868  | 18.8% | 56,904  | 38.4% | 10,559 |
| Longlin | 429,796 | 84,253  | 19.6% | 210,128 | 48.9% | 135,415 | 31.5% | 12,400 |

Source: Baise Statistic Yearbook 2012.

21. Baise used to have ten out its twelve counties/districts being national level povertystricken counties and the rest two of Youjiang District and Tianyang County being regional level poverty-stricken counties/districts. According to the latest information, only nine out of twelve counties are now national level poverty-stricken counties, including Jingxi, Debao, Napo, Tiandong, Leye, Lingyun, Tianlin, Longlin and Xilin<sup>4</sup>. The per capita incomes and expenditure by urban and rural households are shown in **Table 4**. It can be seen that the per capita disposable income of urban households in Baise are obviously lower than the average level of the country and GZAR. The income and expenditure of rural households in Baise are both lower than that of the national average, but higher than the GZAR average. The Engel coefficients of urban and rural households in Baise are both higher than the national and GZAR average level. Rural people are obviously less well off than urban people, since the rural income and living expenditures are only about two fifth of those of urban households.

|          | Urb                                | an Households                            |                           | Rural Households            |                                     |                      |  |  |  |  |  |
|----------|------------------------------------|--|---------------------------|-----------------------------|-------------------------------------|----------------------|--|--|--|--|--|
| Area     | Per capita<br>disposable<br>income | Per capita<br>consumption<br>expenditure | Engel<br>coeffi-<br>cient | Per capita<br>net<br>income | Per capita<br>living<br>expenditure | Engel<br>coefficient |  |  |  |  |  |
| National | 24,565                             | 16,647                                   | 36.2%                     | 7,917                       | 5,908                               | 39.3%                |  |  |  |  |  |
| GZAR     | 21,243                             | 14,244                                   | 39.0%                     | 6,008                       | 4,878                               | 42.8%                |  |  |  |  |  |
| Baise    | 19,561                             | 12,327                                   | 40.0%                     | 7,135                       | 4,977                               | 45.8%                |  |  |  |  |  |

Table 4: Per Capita Incomes and Expenditures in Project Area, 2012 (CNY, %)

Source: China Statistic Yearbook 2013, Guangxi Statistic Yearbook 2013 and Baise Statistic Yearbook 2012.

22. **Table 5** and **Table 6** provide the baseline data on poor people, or "*Dibao*", with their income lower than the minimum living standard (MLS) in Baise City. Each district/county sets its own MLS according to their economic development status and financial income. These MLSs were just raised in 2013. It is highest in Tiandong County both for urban population (CNY376/month or CNY4,512/year) and for rural population (CNY2,165/year), and lowest in Napo both for urban population (CNY250/month or CNY3,000/year) and for rural population (CNY1,200/year). By February 2014, a total of 657,656 people (16.33%) live below the local MLSs, with 39,810 urban population (7.54%) and 617,846 rural population (17.65%). The local MLSs for rural areas are all much lower than the national standard of CNY2,300. Even so, the poverty rate in the rural areas of Baise is still higher than the national average of 13.40%.

<sup>&</sup>lt;sup>4</sup> Source: http://www.gov.cn/gzdt/2012-03/19/content\_2094524.htm.

| Area     | Urban<br>Population | Dibao<br>Households | Dibao<br>Population | % of Dibao<br>Population | MLS<br>(CNY/month) | Subsidy Provided<br>This Month<br>(CNY/person) |
|----------|---------------------|---------------------|---------------------|--------------------------|--------------------|--|
| Youjiang | 106,749             | 1,860               | 3,890               | 3.64%                    | 350                | 209.65   |
| Tianyang | 41,901              | 629                 | 1,233               | 2.94%                    | 300                | 210.55   |
| Tiandong | 57,475              | 1,805               | 3,700               | 6.44%                    | 376                | 209.03   |
| Pingguo  | 92,731              | 1,848               | 4,115               | 4.44%                    | 350                | 230.90   |
| Debao    | 33,616              | 1,355               | 2,564               | 7.63%                    | 320                | 205.76   |
| Jingxi   | 70,000              | 2,118               | 4,879               | 6.97%                    | 300                | 205.50   |
| Napo     | 20,126              | 1,342               | 3,051               | 15.16%                   | 250                | 205.56   |
| Lingyun  | 21,096              | 2,235               | 4,604               | 21.82%                   | 300                | 205.00   |
| Leye     | 18,000              | 1,200               | 2,334               | 12.97%                   | 300                | 245.00   |
| Tianlin  | 24,426              | 1,720               | 2,680               | 10.97%                   | 273                | 205.00   |
| Xilin    | 28,808              | 2,160               | 4,692               | 16.29%                   | 360                | 220.00   |
| Longlin  | 13,048              | 1,260               | 2,068               | 15.85%                   | 300                | 270.00   |
| Total    | 527,976             | 19,532              | 39,810              | 7.54%                    |                    |  |

Table 5: Urban Poor People Statistics in Baise (Feb. 2014)

MLS = minimum living standard Source: The Baise Civil Affairs Bureau

# Table 6: Rural Poor People Statistics in Baise (Feb. 2014)

| Area     | Rural<br>Population | Dibao<br>Households | Dibao<br>Population | % of Dibao<br>Population | MLS<br>(CNY/year) | Subsidy Provided<br>(CNY/year) |
|----------|---------------------|---------------------|---------------------|--------------------------|-------------------|--------------------------------|
| Youjiang | 209,219             | 6,351               | 20,287              | 9.70%                    | 1,930             | 1,057                          |
| Tianyang | 309,889             | 14,306              | 46,445              | 14.99%                   | 1,920             | 1,015                          |
| Tiandong | 379,405             | 21,791              | 71,200              | 18.77%                   | 2,165             | 1,014                          |
| Pingguo  | 417,271             | 14,892              | 44,480              | 10.66%                   | 1,800             | 1,159                          |
| Debao    | 333,286             | 15,186              | 48,526              | 14.56%                   | 1,800             | 1,008                          |
| Jingxi   | 574,983             | 36,214              | 105,209             | 18.30%                   | 1,450             | 1,022                          |
| Napo     | 188,346             | 12,901              | 47,481              | 25.21%                   | 1,200             | 1,011                          |
| Lingyun  | 197,977             | 7,819               | 25,226              | 12.74%                   | 1,900             | 1,056                          |
| Leye     | 157,000             | 8,375               | 26,500              | 16.88%                   | 1,320             | 1,008                          |
| Tianlin  | 229,344             | 27,901              | 49,120              | 21.42%                   | 1,986             | 1,008                          |
| Xilin    | 363,196             | 27,017              | 107,528             | 29.61%                   | 1,435             | 1,008                          |
| Longlin  | 140,999             | 16,572              | 25,844              | 18.33%                   | 1,400             | 1,008                          |
| Total    | 3,500,915           | 209,325             | 617,846             | 17.65%                   |                   |                                |

MLS = minimum living standard

Source: The Baise Civil Affairs Bureau

23. Over the past seven years, Baise has emerged as a new economic growth pole in GZAR focused on four base industries of aluminum processing, agriculture, tourism, and regional trade and logistics. Bordering with Vietnam, Baise is also an important gateway to countries of the Association of Southeast Asian Nations (ASEAN) and GMS.

#### D. Baise Education

24. By 2012, Baise has 1,307 primary schools with 328,778 students and 16,678 teachers. There are 173 junior middle schools with 134,867 students and 7,879 teachers, and 22 senior middle schools with 54,886 students and 2,799 teachers. There are 22 secondary vocational schools (SVSs), with 55,369 students and 1,425 teachers. There are six colleges and universities, with 27,949 students and 1,340 teachers.<sup>5</sup> Since Youjiang Medical University for Nationalities is managed directly by GZAR, BU can be seen as the only university in Baise. See **Table 7** for the detailed name of the universities, colleges and SVSs in Baise.

| Level                          | No. | School Name  | Administration Agency  |  |  |  |  |  |
|--------------------------------|-----|--|------------------------|--|--|--|--|--|
| Linivoreity                    | 1   | Baise University   | Jointly by BEB and GED |  |  |  |  |  |
| University                     | 2   | Youjiang Medical University for Nationalities                        | By GED                 |  |  |  |  |  |
|                                | 1   | Baise Vocational College   | By BEB                 |  |  |  |  |  |
| Vacational Collago             | 2   | Guangxi Senior Pre-school College, Pingguo<br>campus                 | By GED                 |  |  |  |  |  |
| vocational College             | 3   | Guangxi Engineering Vocational College                               | By GED                 |  |  |  |  |  |
|                                | 4   | Guangxi Peixian International Vocational<br>College                  | By GED                 |  |  |  |  |  |
|                                | 1   | Guangxi Youjiang Business School for<br>Nationalities                | By GED                 |  |  |  |  |  |
|                                | 2   | Guangxi Baise Agricultural Vocational School                         | By GED                 |  |  |  |  |  |
|                                | 3   | Baise Vocational School  | By BEB                 |  |  |  |  |  |
|                                | 4   | Secondary Vocational School under Baise<br>Vocational College        | By BEB                 |  |  |  |  |  |
|                                | 5   | Baise Industrial Secondary Specialized School<br>for Nationalities   | By BEB                 |  |  |  |  |  |
|                                | 6   | Baise Health School for Nationalities                                | By BEB                 |  |  |  |  |  |
| O                              | 7   | Baise Mechanic and Electronic School                                 | By BEB                 |  |  |  |  |  |
| Secondary Vocational<br>School | 8   | Baise Industrial Vocational School of the China<br>Democratic League | By BEB                 |  |  |  |  |  |
|                                | 9   | Baise Financial Vocational School                                    | By BEB                 |  |  |  |  |  |
|                                | 10  | Baise Engineering Vocational School                                  | By BEB                 |  |  |  |  |  |
|                                | 11  | Baise Youjiang District Vocational School                            | By DEB                 |  |  |  |  |  |
|                                | 12  | Tianyang County Vocational School                                    | By CEB                 |  |  |  |  |  |
|                                | 13  | Tiandong County Vocational School                                    | By CEB                 |  |  |  |  |  |
|                                | 14  | Pingguo County Vocational School                                     | By CEB                 |  |  |  |  |  |
|                                | 15  | Debao County Vocational School                                       | By CEB                 |  |  |  |  |  |
|                                | 16  | Jingxi County Vocational School                                      | By CEB                 |  |  |  |  |  |
|                                | 17  | Napo County Vocational School  | By CEB                 |  |  |  |  |  |

#### Table 7: List of TVET Schools in Baise Municipality

<sup>&</sup>lt;sup>5</sup> Source: Baise Statistic Yearbook 2012.

| 18 | Lingyun County Vocational School | By CEB |
|----|----------------------------------|--------|
| 19 | Tianin County Vocational School  | By CEB |
| 20 | Leye County Vocational School    | By CEB |
| 21 | Longlin County Vocational School | By CEB |
| 22 | Xilin County Vocational School   | By CEB |

BEB = Baise Education Bureau; CEB = Education Bureau; County DEB = District Education Bureau; GED = Guangxi Education Department;

Source: Data provided by BU.

25. Migrant worker short-time training is also provided in Baise, which is managed by the Baise HRSSB. Local SVSs and various town/township adult culture and technical central schools work as the bases for training of adults on weekends, holidays and nights. Baise is a major labor output city, with many local laborers going to Guangdong, Zhejiang, Fujian, Jiangsu, Beijing, Tianjin, and etc. for working. The total number of migrant workers of Baise going outside in January to May of 2014 is 45,577<sup>6</sup>. Accordingly, two types of practical technical training are provides: (i) rural laborer transferring training, 102,500 person times in 2013, which makes them capable enough to find a migrant job such as vehicle driving, electric welding and etc.; (ii) rural practical technology such as farm work and domestic poultry, 268,000 person times in 2013, which is mainly targeted at at-home women. The training is free and minor living subsidies are provided to the trainers, e.g. CNY10 per day. The BEB does not have specialized funds for this; instead, the funds come from a dozen of government departments in Baise, including the Poverty Alleviation Office (PAO), HRSSB, Government Organization Department, Party Branch Secretary Training, Scientific Bureau, Women's Federation, etc. The PAO also organizes some higher level training with certificates issued, which takes around three months and a subsidy of about CNY1,500 is provided to the trainers...

## V. PFOFILE OF PROJECT TVET INSTITUTIONS

26. The section presents the general profile of the project TVET institutions, e.g. BU and BVS. The general situation of other TVET institutions in Baise is also provided for reference.

#### A. Baise University

#### 1. General

27. BU is a full-time integrated university targeted for local vocational education. It is located in the urban area of the city. It was set up in 1938 and named as Guangxi Tianxi Normal School. After continuous operation of about 70 years, it was renamed as BU and upgrade to a university in 2006. The university has two campuses, namely Donghe and Chengbi, covering a total existing area of 1,915 mu (1.277 km<sup>2</sup>). Part of the Chengbi campus construction is under the proposed project.

28. **Education programs.** BU currently provides the following programs:

i) **UG education**, which takes four years with a bachelor degree awarded;

<sup>&</sup>lt;sup>6</sup> Source: The Municipal Employment Service Center.

- ii) **VC education**, which takes three years except for the major of "Elementary School Education" that takes only two years, with a college degree awarded;
- iii) **Pre-UG program**, under which students enrolled by other universities take oneyear senior high school courses in BU to get better prepared for future UG education<sup>7</sup>;
- iv) Adult continuing education program for correspondence students, which takes two and half years. They only come to the campus for short-term in-class study during the winter and summer holidays, and study at home at other time. After graduation, adult education certificates will be awarded; and
- v) Foreign student education focused on Chinese language or Chinese culture. No degree certificate is awarded to these students. The study period is flexible, ranging from half year to two years; and so is the class form, which could be one-to-one or special groups teaching or joining an existing class in the middle of the course if being Chinese proficient. Existing foreign students come from Thailand, Laos and the United States. BU is actively promoting the foreign student education, and has just entered into an agreement with Laos to enroll over 100 students each year from 2014 with degree certificate issued.

29. **Institutional structure.** BU possesses 13 departments and schools, including 10 departments for both UGs and VC students, the Business School only for VC students, the Pre-UG School, and the Teaching and Research Department on the Ideological Political Theories Courses that is responsible for giving ideological and political classes for all students. In addition, it has an adult continuing education school, a subsidiary high school and a secondary vocational school, i.e. BVS. BU does not have a school board. Its senior leader team consists of eight persons, including the Party secretary, president, deputy Party secretary, and five deputy presidents. All of them are male. Currently, there is no any board for school-enterprise partnership. The departments themselves enter into some cooperation agreements with relevant enterprises for cooperation in teaching, professional probation, testing and practicing, and employment.

#### 2. Students

30. **Student composition.** As shown in **Table 8**, BU has 10,518 full-time students in total by October 2013, including 8,054 UGs, 2,052 VC students, and 412 pre-UGs. The total number of UGs and VC students is 10,106. The total number of UGs is almost four times of that of VC level. The total student number of BU is showing an increasing trend. In addition, it has 2,690 adult UG correspondence students, 2492 adult VC correspondence students, and 3 full-time foreign students by October 2013. The gender, ethnic and *hukou*<sup>8</sup> disaggregated numbers of the students are provided in later sections on poverty, gender and ethnic minority analysis.

<sup>&</sup>lt;sup>7</sup> The pre-UG program will be further described in detail in the section on ethnic minority analysis.

<sup>&</sup>lt;sup>8</sup> Hukou is a residency registration certificate in the PRC, category in urban or rural residency.

| Grada | Underg             | raduates           | VC Studente | Pro undorgraduatos | Total  |
|-------|--------------------|--------------------|-------------|--------------------|--------|
| Grade | Normal             | Тор-ир             |             | Fle-undergraduates | Total  |
| 2013  | 2,524              |                    | 847         | 412                | 3,783  |
| 2012  | 2,019              |                    | 581         |                    | 2,600  |
| 2011  | 1,565              | 169                | 624         |                    | 2,358  |
| 2010  | 1,637              | 140                |             |                    | 1,777  |
| Total | 8054 (including 30 | 9 top-up students) | 2,052       | 412                | 10,518 |

|  | Table 8: | Full-time | Student | Distribution | of BU |
|--|----------|-----------|---------|--------------|-------|
|--|----------|-----------|---------|--------------|-------|

Source: Data provided by BU.

31. **Top-up mechanism.** "Top-up" here refers to the mechanism that students continuing to study at a higher level, i.e. from secondary vocational education (SVE) to VC, or from VC to UG level. Among the 8,054 UGs listed in the table above, 309 students, about 9.7% of the total number of third and fourth grade students, are utilizing the "top-up" mechanism. Under this mechanism, 5% of VC students in each major can have the opportunity to enter the third year of UG after three years courses in VC. For VC students that meet some basic criterions such as never taking make-up examination, having obtained the certificate in TEM-8<sup>9</sup> and the first grade computer certificate, their total scores will be ranked, with the top 5% students eligible for top-up. If anyone of them voluntarily gives up, the next placed student will substitute. VC students can choose the same or similar majors for top-up. BU is cooperating with a dozen of universities or colleges of same level inside GAZR for receiving and exchanging VC students for such further UG education. Among the 309 top-up students, only 61 (20%) are from BU itself while the rest 248 (80%) come from other VCs.

32. **Major configuration.** BU has 35 UG specialties and 38 advanced vocational programs, which cover 8 disciplines such as economics, law, education, literature, science, engineering, management science, and art. See for the detailed list of majors. The detailed list of the majors is presented in **Table 9**. It can be seen from the table that, for UG education, the major of Fashion and Costumes Design is the only major that has not started enrollment yet due to inadequacy of teachers and practicing places around. But it is planned to have new students from 2014 autumn. Some majors are quite new with enrollment started just from 2013. These majors include Internet of Things Engineering, Visual Communication Design, and Product Design. As for the VC majors, 14 out of 38 majors don't have students in 2013 for the following reasons:

 Eight majors of Tea Art, Computer Network Technology, Computer Multimedia Technology, Investment Promotion Management, Procurement and Supply Management, Secretary, Social Work, Applied English, and Applied Vietnamese

<sup>&</sup>lt;sup>9</sup> TEM is the test for English majors, consisting of TEM-8 (higher level) and TEM-4 (lower level).

are not timely reformed and have a low social recognition, making them not attractive enough for students;

- (ii) Three majors of Applied Chemical Technology, Computer Network Technology, and Communication Technology are also covered under the UG program. Candidate students think it is not qualified enough if just getting VC level training in these areas, so they are reluctant to choose these majors; and
- (iii) For the rest three majors of Physical Education, Musical Education, and Art Education, it is comparatively easier for students with art/sport talents to get an access to the UG program, so they normally do not choose VC level majors. They are also covered under the UG program of BU, which BU pays much more attention to.

| _  |     |   |      | UG Leve      | el            |               |               | VC Level      |     |  |      |              |               |               |               |
|--|-----|---|------|--------------|---------------|---------------|---------------|---------------|-----|--|------|--------------|---------------|---------------|---------------|
| Department<br>Name   |     | Major Name                                    | YOE  | Total<br>No. | Grade<br>2013 | Grade<br>2012 | Grade<br>2011 | Grade<br>2010 |     | Major Name                             | YOE  | Total<br>No. | Grade<br>2013 | Grade<br>2012 | Grade<br>2011 |
| 1. Chinese   | 1)  | Chinese Language<br>and Literature            | 2006 | 581          | 195           | 128           | 147           | 111           | 1)  | Chinese Language                       | 2006 | 231          | 101           | 99            | 31            |
| Department   | 2)  | Cross-Border Chinese                          | 2007 | 175          | 62            | 33            | 36            | 11            | 2)  | News Editing and Production            | 2006 | 36           |               | 16            | 20            |
|  |     | Language                                      | 2007 | 175          | 02            | 55            | 50            | 44            | 3)  | Secretary                              | 2005 |              |               |               |               |
|  | 3)  | Humanity Education                            | 2012 | 140          | 87            | 53            |               |               | 4)  | General Liberal Arts Education         | 2005 | 243          | 93            | 62            | 88            |
| 2. Politics  |     |   |      |              |               |               |               |               | 5)  | Legal Secretary                        | 2008 | 46           |               | 15            | 31            |
| and Law<br>Department                                      | 4)  | Ideological and<br>Political Education        | 2006 | 284          | 146           | 38            | 41            | 59            | 6)  | Housekeeping Service<br>Management     | 2010 | 14           |               |               | 14            |
|  |     |   |      |              |               |               |               |               | 7)  | Social Work                            | 2005 |              |               |               |               |
|  | 5)  | International Business and Trade              | 2009 | 261          | 57            | 96            | 57            | 51            | 8)  | Construction Engineering<br>Management | 2011 | 140          | 43            | 53            | 44            |
| 3. Economic  | 6)  | Project Management                            | 2008 | 687          | 87            | 113           | 224           | 263           |     |  |      |              |               |               |               |
| s and<br>Management<br>Department                          | 7)  | Marketing                                     | 2008 | 201          | 47            | 41            | 60            | 53            |     |  |      |              |               |               |               |
|  | 8)  | Financial Management                          | 2009 | 499          | 96            | 145           | 118           | 140           | 9)  | Project Costing                        | 2013 | 48           | 48            |               |               |
|  | 9)  | Tourism Management                            | 2007 | 284          | 51            | 64            | 82            | 87            |     |  |      |              |               |               |               |
|  | 10) | ) Project Costing                             | 2012 | 107          | 107           |               |               |               |     |  |      |              |               |               |               |
| 4. Foreign   | 11) | ) English                                     | 2006 | 497          | 114           | 132           | 122           | 129           | 10) | ) English Education                    | 2005 | 111          | 29            | 26            | 56            |
| Language   | 12  | ) Thai  | 2010 | 135          | 35            | 31            | 29            | 40            | 11) | ) Applied English                      | 2005 |              |               |               |               |
| Department   | 12, | ) mai   | 2010 | 100          |               | 01            | 20            | 10            | 12) | ) Applied Vietnamese                   | 2005 |              |               |               |               |
| 5 Mathemati  | 13) | ) Math and Applied<br>Math                    | 2006 | 294          | 95            | 89            | 39            | 71            | 13) | ) Computer Application<br>Technology   | 2005 | 12           |               |               | 12            |
| cs and<br>Computer   | 14) | ) Communication<br>Engineering                | 2011 | 125          | 46            | 39            | 40            |               | 14) | ) Computer Network<br>Technology       | 2005 |              |               |               |               |
| Computer<br>Information 19<br>Engineering<br>Department 10 | 15) | ) Computer Science<br>and Technology          | 2006 | 404          | 119           | 105           | 104           | 76            | 15) | ) Computer Multimedia                  | 0005 |              |               |               |               |
|  | 16) | ) Internet of Things<br>Engineering           | 2012 | 83           | 83            |               |               |               |     | Technology                             | 2005 |              |               |               |               |
| 6. Physics and   | 17) | ) Material Molding and<br>Control Engineering | 2012 | 74           | 38            | 36            |               |               | 16) | ) Mold Design and Production           | 2011 | 10           |               |               | 10            |
| and<br>Communicati 18<br>on                                | 18) | ) Metal Material<br>Engineering               | 2008 | 207          | 51            | 42            | 46            | 68            | 17) | ) Material Engineering<br>Technology   | 2008 | 25           |               |               | 25            |

# Table 9: List of Majors of BU

|   |   |   |                          | UG Leve      | el            |               |               | VC Level      |                                    |  |      |              |               |               |               |
|---|---|---|--------------------------|--------------|---------------|---------------|---------------|---------------|------------------------------------|--|------|--------------|---------------|---------------|---------------|
| Department<br>Name                                |   | Major Name  | YOE                      | Total<br>No. | Grade<br>2013 | Grade<br>2012 | Grade<br>2011 | Grade<br>2010 |                                    | Major Name                                       | YOE  | Total<br>No. | Grade<br>2013 | Grade<br>2012 | Grade<br>2011 |
| Engineering<br>Department                         | 19)   | Electrical<br>Engineering and<br>Automation             | 2011                     | 145          | 56            | 43            | 46            |               | 18)                                | Mechatronics Technology                          | 2009 | 18           | 18            |               |               |
|   | 20) Electronic<br>Information<br>Engineering 2007 320 85 86 52 97 19) |   | Communication Technology | 2006         |               |               |               |               |                                    |  |      |              |               |               |               |
|   | 21)   | Physics   | 2006                     | 115          | 38            | 30            | 26            | 21            | 20)                                | Electronic Information<br>Engineering Technology | 2005 | 49           | 11            | 16            | 22            |
|   | 22)   | Chemistry   | 2009                     | 165          | 52            | 38            | 33            | 42            | 21)                                | ) Industrial Analysis and<br>Examination         |      | 13           |               |               | 13            |
|   | 23)   | Biotechnology   | 2007                     | 269          | 103           | 87            | 44            | 35            | 22)                                | Food Nutrition and Testing                       | 2009 | 19           |               |               | 19            |
| 7. Chemistry<br>and Life<br>Science<br>Department | 24)   | Material Chemistry                                      | 2011                     | 134          | 54            | 50            | 30            |               | 23) Applied Chemical<br>Technology |  | 2005 |              |               |               |               |
|   | 25)   | Chemical<br>Engineering and<br>Techniques               | 2007                     | 338          | 98            | 107           | 44            | 89            | 24)                                | Tea art  | 2011 |              |               |               |               |
|   | 26)   | Food Science and<br>Engineering                         | 2012                     | 80           | 40            | 40            |               |               |                                    |  |      |              |               |               |               |
|   | 27)   | Physical Education                                      | 2007                     | 361          | 119           | 97            | 72            | 73            |                                    |  |      |              |               |               |               |
| Education<br>Department                           | 28)   | Social Physical<br>Education Guidance<br>and Management | 2009                     | 113          | 38            | 20            | 30            | 25            | 25)                                | Physical Education                               | 2006 |              |               |               |               |
|   | 29)   | Musical<br>Performance                                  | 2007                     | 205          | 66            | 60            | 51            | 28            | 26)                                | Musical Education                                | 2005 |              |               |               |               |
|   | 30)   | Art Design;*<br>Environmental<br>Design                 | 2008<br>2012             | 275<br>45    | 0<br>48       | 101           | 82            | 92            |                                    |  |      |              |               |               |               |
| 9. Arts 3<br>Department                           | 31)   | Visual<br>Communication<br>Design                       | 2012                     | 45           | 45            |               |               |               | 27)                                | Art Education                                    | 2006 |              |               |               |               |
|   | 32)   | Product Design  | 2012                     | 42           | 42            |               |               |               | 1                                  |  |      |              |               |               |               |
| 5<br>(3)  | 33)   | Fashion and<br>Costumes Design                          | 2012                     | 0            |               |               |               |               |                                    |  |      |              |               |               |               |
| 10. Educati<br>on Science                         | 34)   | Pre-School<br>Education                                 | 2009                     | 145          | 42            | 39            | 42            | 22            | 28)                                | Pre-School Education                             | 2001 | 543          | 223           | 201           | 119           |

|                    |                                    |      | UG Leve      | el            |               |               |               | VC Level |   |      |              |               |               |               |
|--------------------|------------------------------------|------|--------------|---------------|---------------|---------------|---------------|----------|---|------|--------------|---------------|---------------|---------------|
| Department<br>Name | Major Name                         | YOE  | Total<br>No. | Grade<br>2013 | Grade<br>2012 | Grade<br>2011 | Grade<br>2010 |          | Major Name  | YOE  | Total<br>No. | Grade<br>2013 | Grade<br>2012 | Grade<br>2011 |
| Department         | 35) Elementary School<br>Education | 2010 | 216          | 82            | 36            | 37            | 61            | 29)      | Elementary School<br>Education (two-year<br>program)        | 2013 | 100          | 100           |               |               |
|                    |                                    |      |              |               |               |               |               | 30)      | Financial Insurance   | 2008 | 49           | 27            |               | 22            |
|                    |                                    |      |              |               |               |               |               | 31)      | International Business<br>(Customs Declaration<br>Practice) | 2008 | 23           |               |               | 23            |
|                    |                                    |      |              |               |               |               |               | 32)      | International Business                                      | 2008 | 19           | 19            |               |               |
| 11. Busines        |                                    |      |              |               |               |               |               | 33)      | Investment Promotion<br>Management                          | 2006 |              |               |               |               |
| s School           |                                    |      |              |               |               |               |               | 34)      | Procurement and Supply<br>Management                        | 2006 |              |               |               |               |
|                    |                                    |      |              |               |               |               |               | 35)      | Estate Management   | 2008 | 18           | 18            |               |               |
|                    |                                    |      |              |               |               |               |               | 36)      | Tourism Management  | 2005 | 12           | 12            |               |               |
|                    |                                    |      |              |               |               |               |               | 37)      | Hotel Management  | 2005 | 19           | 19            |               |               |
|                    |                                    |      |              |               |               |               |               | 38)      | Computerized Accounting                                     | 2005 | 254          | 86            | 93            | 75            |
|                    | Total                              |      | 8,054        | 2,524         | 2,019         | 1,734         | 1,777         |          | Total   |      | 2052         | 847           | 581           | 624           |

YOE = Year of Establishment

Note: \* The major of "Art Design" was set up in 2008, and it was divided into three majors of "Environment Design", "Visual Communication Design" and "Product Design" since 2012. The existing "Environment Design" major is seen as the original "Art Design" major, so they are put in the same cell.

Source: Data provided by BU.

33. For UG program, the top five majors in terms of student number are: (i) Project Management, with 687 students; (ii) Chinese Language and Literature, with 581 students; (iii) Financial Management, with 499 students; (iv) English, with 497 students; and (v) Computer Science and Technology, with 404 students.

34. For VC program, the top five majors in terms of student number are: (i) Pre-School Education, with 543 students; (ii) Computerized Accounting, with 254 students; (iii) General Liberal Arts Education, with 243 students; iv) Chinese Language, with 231 students; and (v) Construction Engineering Management, with 140 students.

35. Out of the 35 UG major, 17 ones, almost half, have top-up students, as shown in **Table 10**. The Project Management major is most popular, with 158 top-up students, accounting for 51.1% of the total top-up students of 309. The next one is Financial Management, with 53 top-up students, accounting for 17.2% of the total. The third one is Marketing, with 20 top-students, accounting for 6.5% of the total. These three majors also have the highest proportion of top-up students among the majors' total students of Grade 2011 and 2010. The other majors have much smaller proportions.

|      | Malaa                                 | Grade  | e 2011 | Grade  | e 2010 | Subto  | al of 2011 | and 2010    | 0/              |
|------|---------------------------------------|--------|--------|--------|--------|--------|------------|-------------|-----------------|
| INO. | Major                                 | Normal | Top-up | Normal | Top-up | Normal | Top-up     | % of Top-up | % of All Top-up |
| 1    | Project Management                    | 145    | 79     | 184    | 79     | 329    | 158        | 48.0%       | 51.1%           |
| 2    | Financial Management                  | 83     | 35     | 122    | 18     | 205    | 53         | 25.9%       | 17.2%           |
| 3    | Marketing                             | 42     | 18     | 51     | 2      | 93     | 20         | 21.5%       | 6.5%            |
| 4    | Chinese Language and Literature       | 139    | 8      | 106    | 5      | 245    | 13         | 5.3%        | 4.2%            |
| 5    | Ideological and Political Education   | 35     | 6      | 54     | 5      | 89     | 11         | 12.4%       | 3.6%            |
| 6    | Electronic Information Engineering    | 47     | 5      | 92     | 5      | 139    | 10         | 7.2%        | 3.2%            |
| 7    | Chemical Engineering and Techniques   | 41     | 3      | 84     | 5      | 125    | 8          | 6.4%        | 2.6%            |
| 8    | Biotechnology                         | 43     | 1      | 30     | 5      | 73     | 6          | 8.2%        | 1.9%            |
| 9    | English                               | 119    | 3      | 127    | 2      | 246    | 5          | 2.0%        | 1.6%            |
| 10   | Metal Material Engineering            | 44     | 2      | 65     | 3      | 109    | 5          | 4.6%        | 1.6%            |
| 11   | Musical Performance                   | 51     |        | 23     | 5      | 74     | 5          | 6.8%        | 1.6%            |
| 12   | Tourism Management                    | 81     | 1      | 84     | 3      | 165    | 4          | 2.4%        | 1.3%            |
| 13   | International Business and Trade      | 55     | 2      | 49     | 2      | 104    | 4          | 3.8%        | 1.3%            |
| 14   | Electrical Engineering and Automation | 44     | 2      |        |        | 44     | 2          | 4.5%        | 0.6%            |
| 15   | Chemistry                             | 31     | 2      | 42     |        | 73     | 2          | 2.7%        | 0.6%            |
| 16   | Pre-school education                  | 40     | 2      | 22     |        | 62     | 2          | 3.2%        | 0.6%            |
| 17   | Computer Science and Technology       |        |        | 75     | 1      | 75     | 1          | 1.3%        | 0.3%            |
|      | Total                                 | 1040   | 169    | 1210   | 140    | 2250   | 309        | 13.7%       |                 |

Table 10: Distribution of Top-up Students in BU

Source: Data provided by BU.

36. Students select their major before they enter into the school by reading the enrollment guide published by BU or the school website to understand the development direction, main

courses, special feature and employment potential of the major. Then on the first date of entering school, they can learn more by orientation presentations provided by the department heads or chiefs of teaching and research offices. If they think the major is not suitable for them, they can apply for a major change. In recent three years, about 200 students (around 8%) every year changed their majored after entering school and about 10 students did so after one year's study.

37. **Student origin.** The student origins by major of UGs of BU in the time of enrollment are presented in **Table 11**. It can be seen that in the recent years, local students from Baise only account for a small proportion. Most students, about 80%, come from other cities inside GZAR. The rest ranging from 4% to 13% come from places outside GZAR, including Guizhou (1.60%), Fujian (1.43%), Shanxi (1.19%), Hebei (1.14%), Gansu (1.14%), Jiangxi (1.08%), Hunan (0.98%), Yunnan (0.87%), Jiangsu (0.73%), Hainan (0.72%), Henan (0.59%), Sichuan (0.53%), Chongqing (0.46%), Jilin (0.41%), Shaanxi (0.37%), Hubei (0.18%), Anhui (0.10%), Ningxia (0.10%), and Liaoning (0.07%). The proportion of students from outside of GZAR keeps at a low level, indicating that BU is still not nationally famous enough to attract students from all over the country.

38. The student origins by major of VC students of BU in the time of enrollment are presented in **Table 12**. Unlike the UGs, VC students are all from the Region, i.e. Baise and other 13 cities in the Region. The proportion of students from Baise keeps rising, from about 36% in 2011 to 44% in 2013.

|                                    |                                   | 2013  |       |       |         |       | 2     | 012   |         | 2011  |       |       |         | 2010  |       |       |         |
|------------------------------------|-----------------------------------|-------|-------|-------|---------|-------|-------|-------|---------|-------|-------|-------|---------|-------|-------|-------|---------|
| Dept.                              | Major                             | Tatal | G     | ZAR   | Outside | Tatal | GZ    | AR    | Outside | Tatal | GZAR  |       | Outside | Tatal | GZAR  |       | Outside |
|                                    |                                   | Iotai | Baise | Other | GZAR    | Iotai | Baise | Other | GZAR    | Total | Baise | Other | GZAR    | Total | Baise | Other | GZAR    |
| Chinoso                            | Chinese Language and Literature   | 203   | 22    | 160   | 21      | 139   | 15    | 103   | 21      | 157   | 11    | 121   | 25      | 121   | 12    | 105   | 4       |
| Chinese                            | Cross-Border Chinese Language     | 80    | 3     | 71    | 6       | 38    | 0     | 30    | 8       | 38    | 1     | 28    | 9       | 50    | 9     | 36    | 5       |
| Politics and                       | Humanity Education                | 101   | 6     | 89    | 6       | 59    | 2     | 53    | 4       |       |       |       |         |       |       |       |         |
| Law                                | Ideological & Political Education | 169   | 15    | 150   | 4       | 42    | 3     | 35    | 4       | 44    | 5     | 35    | 4       | 59    | 4     | 50    | 5       |
|                                    | International Business and Trade  | 48    | 5     | 39    | 4       | 106   | 2     | 97    | 7       | 66    | 2     | 50    | 14      | 62    | 4     | 50    | 8       |
|                                    | Project Management                | 93    | 9     | 80    | 4       | 117   | 3     | 99    | 15      | 157   | 6     | 120   | 31      | 199   | 8     | 165   | 26      |
| Economics                          | Marketing                         | 53    | 3     | 37    | 13      | 55    | 1     | 41    | 13      | 59    | 2     | 47    | 10      | 66    | 1     | 56    | 9       |
| ano<br>Management                  | Financial Management              | 94    | 6     | 83    | 5       | 149   | 4     | 134   | 11      | 89    | 4     | 74    | 11      | 130   | 9     | 109   | 12      |
|                                    | Tourism Management                | 50    | 2     | 42    | 6       | 88    | 1     | 74    | 13      | 100   | 2     | 84    | 14      | 106   | 16    | 72    | 18      |
|                                    | Project Costing                   | 98    | 5     | 87    | 6       |       |       |       |         |       |       |       |         |       |       |       |         |
| Foreign                            | English                           | 121   | 4     | 102   | 15      | 157   | 5     | 137   | 15      | 136   | 7     | 112   | 17      | 143   | 12    | 116   | 15      |
| Language                           | Thai                              | 46    | 1     | 39    | 6       | 38    | 1     | 31    | 6       | 40    | 1     | 34    | 5       | 51    | 2     | 47    | 2       |
| Math and                           | Math and Applied Math             | 100   | 10    | 85    | 5       | 106   | 14    | 84    | 8       | 49    | 3     | 40    | 6       | 88    | 17    | 64    | 7       |
| Computer                           | Communication Engineering         | 50    | 0     | 42    | 8       | 48    | 2     | 37    | 9       | 52    | 3     | 43    | 6       |       |       |       |         |
| Information                        | Computer Science & Technology     | 144   | 10    | 118   | 16      | 134   | 1     | 116   | 17      | 135   | 2     | 111   | 22      | 99    | 18    | 47    | 34      |
| Engineering                        | Internet of Things Engineering    | 94    | 2     | 87    | 5       |       |       |       |         |       |       |       |         |       |       |       |         |
|                                    | Material Molding & Control        | 50    | 3     | 45    | 2       | 44    | 0     | 40    | 4       |       |       |       |         |       |       |       |         |
| Physics and                        | Metal Material Engineering        | 50    | 6     | 40    | 4       | 50    | 4     | 43    | 3       | 54    | 10    | 38    | 6       | 72    | 26    | 46    | 0       |
| Communicati<br>on<br>Engineering E | Electrical Engineering & Auto.    | 50    | 4     | 44    | 2       | 53    | 2     | 49    | 2       | 59    | 2     | 51    | 6       |       |       |       |         |
|                                    | Electronic Info. Engineering      | 90    | 2     | 81    | 7       | 101   | 6     | 90    | 5       | 53    | 0     | 44    | 9       | 105   | 9     | 83    | 13      |
|                                    | Physics                           | 66    | 9     | 54    | 3       | 40    | 1     | 36    | 3       | 32    | 2     | 28    | 2       | 31    | 4     | 23    | 4       |

# Table 11: Origin Disaggregated UG Enrollment Numbers of BU

|   |                                 |       | 2     | 2013  |         | 2012  |       |       | 2011    |       |       |       | 2010    |       |       |       |         |
|---|---------------------------------|-------|-------|-------|---------|-------|-------|-------|---------|-------|-------|-------|---------|-------|-------|-------|---------|
| Dept.                                     | Major                           | Total | G     | ZAR   | Outside | Total | GZ    | AR    | Outside | Total | GZAR  |       | Outside | Total | GZ    | 'AR   | Outside |
|   |                                 | Total | Baise | Other | gzar    | Total | Baise | Other | GZAR    | TOLAI | Baise | Other | GZAR    | TOLAT | Baise | Other | GZAR    |
| Chemistry<br>and Life<br>Science<br>Dept. | Chemistry                       | 50    | 8     | 38    | 4       | 43    | 1     | 38    | 4       | 37    | 3     | 30    | 4       | 48    | 4     | 40    | 4       |
|   | Biotechnology                   | 132   | 8     | 118   | 6       | 113   | 4     | 101   | 8       | 50    | 5     | 39    | 6       | 38    | 2     | 34    | 2       |
|   | Material Chemistry              | 71    | 6     | 61    | 4       | 64    | 1     | 59    | 4       | 39    | 5     | 30    | 4       |       |       |       |         |
|   | Chemical Engineering & Tech.    | 130   | 8     | 114   | 8       | 129   | 2     | 119   | 8       | 49    | 0     | 38    | 11      | 101   | 8     | 77    | 16      |
|   | Food Science and Engineering    | 49    | 5     | 42    | 2       | 45    | 1     | 40    | 4       |       |       |       |         |       |       |       |         |
| Physical                                  | Physical Education              | 121   | 39    | 72    | 10      | 101   | 4     | 91    | 6       | 76    | 23    | 49    | 4       | 76    | 25    | 51    | 0       |
| Education                                 | Social Physical Education       | 39    | 7     | 27    | 5       | 21    | 4     | 15    | 2       | 35    | 4     | 27    | 4       | 27    | 8     | 16    | 3       |
|   | Musical Performance             | 69    | 11    | 29    | 29      | 63    | 0     | 15    | 48      | 54    | 8     | 3     | 43      | 31    | 8     | 11    | 12      |
| Arte                                      | Art Design/Environmental Design | 47    | 3     | 11    | 33      | 117   | 1     | 46    | 70      | 93    | 8     | 27    | 58      | 95    | 13    | 24    | 58      |
| AI IS                                     | Visual Communication Design     | 49    | 4     | 23    | 22      |       |       |       |         |       |       |       |         |       |       |       |         |
|   | Product Design                  | 47    | 3     | 25    | 19      |       |       |       |         |       |       |       |         |       |       |       |         |
| Education                                 | Pre-School Education            | 48    | 5     | 40    | 3       | 42    | 16    | 26    | 0       | 46    | 16    | 30    | 0       | 30    | 12    | 18    | 0       |
| Science                                   | Elementary School Education     | 90    | 6     | 80    | 4       | 46    | 1     | 40    | 5       | 52    | 6     | 46    | 0       | 65    | 10    | 52    | 3       |
| Total Number                              |                                 | 2792  | 240   | 2255  | 297     | 2348  | 102   | 1919  | 327     | 1851  | 141   | 1379  | 331     | 1893  | 241   | 1392  | 260     |
|   | % of the Grade Total            |       | 9%    | 81%   | 11%     |       | 4%    | 82%   | 14%     |       | 8%    | 75%   | 18%     |       | 13%   | 74%   | 14%     |

Note: The numbers of students in this table are those enrolled by BU. They are different from the at-school student numbers included in Table 9, because only about 80% enrolled students will finally come to register at school. About 20% students are not coming mostly because they are not satisfied with the accepting university and would like to repeat the third year in the senior middle school to enter a better university. Another reason is that freshmen are allowed to change their majors after the orientation if they think the current majors are not what they want.

Source: Data provided by BU.

| Dept.                            | Major                              | Grade | Total | Baise | Nanning | Liuzhou | Guilin | Wuzhou | Beihai | Qinzhou | FCG | Guigang | Yulin | Hechi | Hezhou | Laibin | Congzuo |
|----------------------------------|------------------------------------|-------|-------|-------|---------|---------|--------|--------|--------|---------|-----|---------|-------|-------|--------|--------|---------|
|                                  |                                    | 2013  | 111   | 33    | 6       | 1       | 5      | 7      | 0      | 4       | 8   | 18      | 7     | 11    | 2      | 1      | 8       |
|                                  | Chinese Language                   | 2012  | 111   | 38    | 2       | 2       | 3      | 8      | 1      | 14      | 3   | 18      | 14    | 5     | 0      | 1      | 2       |
| Chinaga                          |                                    | 2011  | 42    | 10    | 0       | 0       | 0      | 2      | 0      | 8       | 1   | 4       | 8     | 8     | 0      | 0      | 1       |
| Chinese                          | News Editing and                   | 2012  | 19    | 6     | 3       | 0       | 0      | 0      | 1      | 0       | 0   | 2       | 1     | 2     | 0      | 2      | 2       |
|                                  | Production                         | 2011  | 30    | 12    | 2       | 2       | 2      | 0      | 1      | 1       | 0   | 4       | 2     | 0     | 0      | 3      | 1       |
|                                  | Secretary                          | 2012  | 18    | 6     | 2       | 3       | 1      | 2      | 1      | 0       | 0   | 1       | 1     | 0     | 1      | 0      | 0       |
|                                  |                                    | 2013  | 106   | 36    | 3       | 2       | 3      | 1      | 1      | 10      | 3   | 13      | 9     | 16    | 3      | 2      | 4       |
|                                  | General Liberal Arts<br>Education  | 2012  | 71    | 20    | 4       | 1       | 0      | 1      | 1      | 6       | 4   | 14      | 7     | 8     | 3      | 0      | 2       |
|                                  |                                    | 2011  | 86    | 18    | 6       | 1       | 1      | 6      | 0      | 4       | 3   | 24      | 11    | 7     | 3      | 1      | 1       |
| Politics and<br>Law              | Logal Socratary                    | 2012  | 18    | 13    | 1       | 0       | 0      | 0      | 0      | 1       | 0   | 0       | 1     | 1     | 0      | 1      | 0       |
| Lun                              | Legar Secretary                    | 2011  | 46    | 17    | 6       | 1       | 2      | 3      | 1      | 2       | 1   | 6       | 2     | 2     | 0      | 2      | 1       |
|                                  | Housekeeping Service               | 2012  | 20    | 12    | 5       | 0       | 1      | 0      | 0      | 0       | 0   | 1       | 0     | 1     | 0      | 0      | 0       |
|                                  | Management                         | 2011  | 28    | 6     | 3       | 0       | 1      | 0      | 1      | 2       | 0   | 7       | 5     | 1     | 1      | 1      | 0       |
|                                  | Construction                       | 2013  | 51    | 25    | 4       | 0       | 2      | 1      | 1      | 4       | 1   | 3       | 1     | 6     | 0      | 1      | 2       |
| Economics                        | Engineering 2                      | 2012  | 66    | 33    | 4       | 2       | 2      | 2      | 1      | 1       | 0   | 10      | 3     | 2     |        | 4      | 2       |
| Management                       | Management                         | 2011  | 58    | 23    | 5       | 0       | 3      | 3      | 0      | 2       | 1   | 4       | 5     | 6     | 2      | 3      | 1       |
|                                  | Project Costing                    | 2013  | 54    | 10    | 6       | 1       | 1      | 1      | 0      | 3       | 3   | 9       | 5     | 4     | 3      | 4      | 4       |
|                                  |                                    | 2013  | 34    | 10    | 4       | 0       | 6      | 2      | 0      | 0       | 1   | 2       | 4     | 2     | 0      | 0      | 3       |
| Foreign                          | English Education                  | 2012  | 34    | 4     | 6       | 0       | 0      | 5      | 0      | 3       |     | 7       | 5     | 2     | 0      | 1      | 1       |
| Lunguage                         |                                    | 2011  | 72    | 20    | 8       | 3       | 1      | 3      | 2      | 7       | 1   | 11      | 7     | 5     | 1      | 1      | 2       |
| Math &<br>Computer               | Computer Application<br>Technology | 2011  | 26    | 10    | 3       | 1       | 1      | 0      | 0      | 0       | 0   | 5       | 1     | 4     | 0      | 1      | 0       |
|                                  | Mold Design and                    | 2012  | 18    | 7     | 4       | 0       | 0      | 1      | 0      | 2       | 0   | 2       | 1     | 0     | 0      | 1      | 0       |
|                                  | Production                         | 2011  | 19    | 3     | 6       | 0       | 0      | 0      | 1      | 2       | 0   | 2       | 0     | 5     | 0      | 0      | 0       |
|                                  | Material Engineering               | 2011  | 33    | 21    | 2       | 0       | 0      | 0      | 1      | 0       | 0   | 1       | 4     | 2     | 0      | 0      | 2       |
| Physics and                      | Electronic Information             | 2013  | 30    | 14    | 1       | 1       | 1      | 1      | 0      | 1       | 0   | 2       | 1     | 2     | 0      | 3      | 3       |
| Physics and<br>Communicati<br>on | Engineering                        | 2012  | 22    | 5     | 3       | 0       | 1      | 1      | 2      | 1       | 0   | 4       | 4     | 1     | 0      | 0      | 0       |
|                                  | Technology                         | 2011  | 25    | 8     | 3       | 0       | 2      | 2      | 1      | 2       | 0   | 4       | 1     | 1     | 1      | 0      | 0       |
|                                  |                                    | 2013  | 26    | 9     | 1       | 1       | 4      | 0      | 1      | 2       | 2   | 1       | 1     | 1     | 0      | 1      | 2       |
|                                  | Mechatronics                       | 2012  | 19    | 8     | 3       | 0       | 1      | 1      | 0      | 1       | 0   | 0       | 2     | 1     | 1      | 1      | 0       |
|                                  | recimology                         | 2011  | 18    | 8     | 3       | 0       | 1      | 1      | 1      | 0       | 0   | 2       | 1     | 0     | 1      | 0      | 0       |

# Table 12: Origin Disaggregated VC Student Numbers of BU

| Dept.         | Major   | Grade | Total | Baise | Nanning | Liuzhou | Guilin | Wuzhou | Beihai | Qinzhou | FCG  | Guigang | Yulin | Hechi | Hezhou | Laibin | Congzuo |
|---------------|---|-------|-------|-------|---------|---------|--------|--------|--------|---------|------|---------|-------|-------|--------|--------|---------|
| Chemistry and | Industrial Analysis and<br>Examination          | 2011  | 18    | 6     | 1       | 0       | 3      | 0      | 1      | 2       | 0    | 0       | 2     | 1     | 0      | 2      | 0       |
| Life Science  | Food Nutrition and<br>Testing                   | 2011  | 29    | 6     | 4       | 0       | 2      | 1      | 0      | 1       | 1    | 2       | 4     | 6     | 0      | 2      | 0       |
|               |   | 2013  | 237   | 111   | 3       | 18      | 4      | 3      | 6      | 9       | 2    | 14      | 24    | 0     | 19     | 4      | 20      |
| Education     | Pre-School Education                            | 2012  | 237   | 105   | 14      | 3       | 2      | 3      | 9      | 4       | 4    | 17      | 24    | 32    | 4      | 3      | 13      |
| Science       |   | 2011  | 189   | 74    | 9       | 3       | 9      | 1      | 3      | 5       | 3    | 22      | 20    | 18    | 4      | 4      | 14      |
|               | Elementary School<br>Education                  | 2013  | 100   | 63    | 4       | 2       | 0      | 0      | 1      | 0       | 1    | 1       | 1     | 1     | 0      | 0      | 26      |
|               | Financial Insurance                             | 2013  | 33    | 22    | 0       | 0       | 0      | 2      | 0      | 0       | 0    | 6       | 0     | 3     | 0      | 0      | 0       |
|               |   | 2011  | 42    | 9     | 3       | 1       | 1      | 1      | 1      | 6       | 1    | 6       | 3     | 2     | 1      | 5      | 2       |
|               | International Business                          | 2013  | 25    | 6     | 4       | 0       | 1      | 0      | 0      | 0       | 1    | 3       | 3     | 3     | 0      | 1      | 3       |
|               | International Business<br>(Customs Declaration) | 2011  | 35    | 12    | 1       | 2       | 4      | 1      | 2      | 1       | 0    | 2       | 5     | 3     | 0      | 0      | 2       |
| Business      | Computerized 201                                | 2013  | 98    | 63    | 3       | 2       | 0      | 2      | 2      | 3       | 2    | 0       | 4     | 6     | 0      | 3      | 8       |
| School        |   | 2012  | 105   | 66    | 5       | 1       | 2      | 3      | 4      | 4       | 2    | 6       | 5     | 2     | 1      | 3      | 1       |
|               | , accurring                                     | 2011  | 101   | 59    | 7       | 2       | 2      | 0      | 1      | 4       | 3    | 9       | 3     | 4     | 0      | 6      | 1       |
|               | Estate Management                               | 2013  | 32    | 12    | 3       | 0       | 1      | 1      | 2      | 1       | 0    | 2       | 1     | 5     | 2      | 0      | 2       |
|               | Tourism Management                              | 2013  | 20    | 7     | 1       | 2       | 1      | 0      | 2      | 0       | 0    | 0       | 1     | 5     | 0      | 1      | 0       |
|               | Hotel Management                                | 2013  | 42    | 18    | 3       | 0       | 0      | 1      | 1      | 3       | 0    | 3       | 4     | 0     | 2      | 2      | 5       |
|               | •   | 2013  | 999   | 439   | 46      | 30      | 29     | 22     | 17     | 40      | 24   | 77      | 66    | 65    | 31     | 23     | 90      |
| G             | Grade Total                                     | 2012  | 758   | 323   | 56      | 12      | 13     | 27     | 20     | 37      | 13   | 82      | 68    | 57    | 10     | 17     | 23      |
|               |   | 2011  | 897   | 322   | 72      | 16      | 35     | 24     | 17     | 49      | 15   | 115     | 84    | 75    | 14     | 31     | 28      |
|               |   | 2013  |       | 43.9% | 4.6%    | 3.0%    | 2.9%   | 2.2%   | 1.7%   | 4.0%    | 2.4% | 7.7%    | 6.6%  | 6.5%  | 3.1%   | 2.3%   | 9.0%    |
| % o           | f Grade Total                                   | 2012  |       | 42.6% | 7.4%    | 1.6%    | 1.7%   | 3.6%   | 2.6%   | 4.9%    | 1.7% | 10.8%   | 9.0%  | 7.5%  | 1.3%   | 2.2%   | 3.0%    |
|               |   | 2011  |       | 35.9% | 8.0%    | 1.8%    | 3.9%   | 2.7%   | 1.9%   | 5.5%    | 1.7% | 12.8%   | 9.4%  | 8.4%  | 1.6%   | 3.5%   | 3.1%    |

FCG = Fangchenggang City Note: The Secretary major and Mold Design and Production major enrolled some students in 2012, but only a few students got registered, so they changed to other majors. So Table 9 do not have at-school students in 2012 in these two majors. Source: Data provided by BU.

39. **Enrollment outreach program.** The enrollment outreach program in 2013 covered the whole GZAR, unlike previous years when only a few cities with good students were covered. Promotional materials are printed and distributed to all middle schools of GZAR and some schools in other provinces. BU also invites the leaders and teachers of over 20 middle schools to come to BU for promotion. Some advertisements are made on newspaper and website. The outreach program is neutral and general. It does not promote male or female participation in non-traditional sectors. No different levels of TVET pathways are introduced, and no information provided on various forms of job opportunities linked with the levels of pathways available for both male and female students. Students choose their majors mainly based on their parents' desire and personal interest.

40. **Graduation and Employment. Table 13** shows employment of BU's UGs in the last three years. It can be seen that BU enjoys a comfortable upward trend in its graduate employment. In 2013, the total number of graduates are 2,383, including 1,564 UGs and 819 VC students. By 27 August 2013, 1,468 UGs and 762 VC students found a job. The overall employment rate is 93.5%, and about 80% of these graduates found their jobs in GZAR. Starting salaries are about CNY2,000.

| Year | Employment Rate | Employed in GZAR | Employed outside<br>GZAR | Average Starting<br>Payment (CNY) |
|------|-----------------|------------------|--------------------------|-----------------------------------|
| 2013 | 93.9%           | 79.3%            | 20.7%                    | 2000                              |
| 2012 | 92.8%           | 80.8%            | 19.2%                    | 2000                              |
| 2011 | 92.3%           | 85.9%            | 14.1%                    | 2000                              |

Table 13: UG Level Graduates Employment of BU

Source: Data provided by BU.

41. **Table 14** shows employment of BU's VC graduates in the last three years. An average employment rate of 93.7% is found in the VC graduates in BU over the last three years, with over 90 % of these graduates locally employed in GZAR. Starting salaries are at the same level as those UGs. This points to the fact that BU VC graduates have been enjoying a fairly good job market, a strong justification for BU to further develop its VC education.

| Year | Employment Rate | Employed in GZAR | Employed outside<br>GZAR | Average Starting<br>Payment (CNY) |
|------|-----------------|------------------|--------------------------|-----------------------------------|
| 2013 | 93.04%          | 97.33%           | 2.67%                    | 2000                              |
| 2012 | 94.33%          | 93.78%           | 6.22%                    | 2000                              |
| 2011 | 93.90%          | 95.68%           | 4.32%                    | 2000                              |

Table 14: VC Level Graduate Employment of BU

Source: Data provided by BU.

- 42. **Career counseling.** BU currently provides the following career counseling activities:
  - i) Special course named as "Career Life Planning and Employment" is lectured for freshmen, which lasts for a semester; and
  - ii) Employment guidance workshops, once or twice a year, provided by enterprise and company representatives or special experts for the third and fourth year students.

43. Such counselling is targeted at all students, not specifically for female or EM students.

44. The school provides one or two workshops for about 300 student leaders (including those from the school student union, department student unions, and class leaders) on leadership and management skills. No gender disaggregated numbers are available.

45. **Tracer study on employment.** BU used to do very limited work on graduate employment tracer studies. There were some irregular data collections, e.g. during anniversary activities. It has just realized the importance of tracer study to get the feedback on its teaching and training and so as to improve the teaching quality. The "Temporary Measures on BU Graduates' Employment Quality Follow-up Investigation" (the Measures) was just issued by BU on 15 April 2014. The document requires that graduate employment investigation is done once per year since 2014, based on the feedback of which the employers' database and graduates' and employers, and interviews will be utilized.

46. Every department will be responsible for collecting the first-hand data via correspondence, network, fax, telephone and field visits, etc. and prepare an annual report. The Enrollment and Employment Office will be responsible for collecting the reports from the departments and finally develop a summarized report for the school leaders.

47. Such follow-up investigation is required to be done three times in five years of graduation, with 80% graduates covered in the first time, 70% covered in the second time, and 60% covered in the third time, respectively.

48. The contents to be covered by the investigation include:

- The overall assessment of the employers on the BU graduates covering morality, professional knowledge, business capability, and work performance, etc. Stories of excellent graduates will be particularly collected;
- (ii) The employment status of BU graduates, including the problems encountered, and comments and suggestions on BU's curriculum design, teaching contents, teaching resources, pedagogy, management mode and study support services, etc.;
- (iii) Information on the rate of jobs matching the major, job reliability, promotion rate, enterprise satisfaction rate, income rate, and etc.;
- (iv) The social assessment on the graduates from new majors;

- (v) Demand trend of employers on BU's graduates (major configuration) and their quality requirements for the graduates; and
- (vi) The general assessment and satisfaction rate of employers and BU graduates on BU's schooling level and the graduate guidance work.

49. Later on 14 May 2014, the implementation program for implementing the Measures in 2014 was issued. It requires to make the investigation on all students graduated in 2011 to 2013 and their employers, with a minimum coverage of 80% for graduates and 60% for employers. Every employer that has three and above BU graduates must be covered. The work is divided into three stages: (i) preparation and planning during 1 May to 10 May 2014; (ii) follow-up investigation during 12 May to 12 July 2014; and (iii) statistics analysis, database update, and preparation of reports.

50. The tracer study mechanism to be implemented by BU from this year, however, only collect gender and *hukou* information and will not include ethnicity data. No gender and social analysis is required.

#### 3. Teachers

51. **Teacher Composition.** BU currently has 627 staff members, including 399 specialized teachers, 180 administrative staff, and 48 logistic workers<sup>10</sup>, and 100 some external teachers for the areas in shortage of teachers (English, EM music instruments, etc.). Among the 180 administrative staff, 113 take both teaching and administrative roles with teaching certificates, while 67 are full-time administrative staff. Therefore, there are a total of 512 teachers inside BU. Among them, 74 hold dual qualifications, accounting for 14.5%. More analysis below will be focused on the specialized teachers.

52. **Teachers age range.** In 2014, 122 of all BU teachers are aged below 30 years, accounting for 23.8%; 209 teachers are 31-40 years old, accounting for 40.8%;127 teachers are between 41-50, accounting for 24.5%; 49 teachers are aged between 51-60, accounting for 9.6%; and 5 teachers aged over 60 years old, accounting for 1%. The data above shows that BU teachers mainly range from below 30 to 50 years old. Of these, the age range of 31-40 dominates as it accounts for 40%.

|      | <30 | 31-40 | 41-50 | 51-60 | >60 | Total |
|------|-----|-------|-------|-------|-----|-------|
| 2012 | 122 | 172   | 111   | 21    | 1   | 427   |
| 2013 | 142 | 194   | 124   | 42    | 5   | 507   |
| 2014 | 122 | 209   | 127   | 49    | 5   | 512   |

| Table 15 | : Age | Range | of | BU | Teachers |
|----------|-------|-------|----|----|----------|
|----------|-------|-------|----|----|----------|

Source: data provided by BU.

53. **Teachers' academic titles.** As shown in **Table 16**, in 2014, 109 teachers have no academic title of any sort, accounting for 21.3%; 54 teachers hold a junior title, accounting for

<sup>&</sup>lt;sup>10</sup> Not including 200~300 workers who are not receiving remuneration from BU, e.g. those employed by the cafeterias.

10.5%; 219 teachers hold a middle title, accounting for 42.8%; 99 persons hold an associate professor title, accounting for 19.3%, and 31 persons are professors, accounting for 6.1%. The data shows that about 20% of BU teachers do not hold any title at all, while 40% of the teachers have a middle title, the highest percentage of all. From 2013 to 2014, the non-title holders were reduced by 20 persons, middle title holders increased by 11 persons, 9 more teachers got an associate professor title and 4 more professors were added. This shows an increasing trend in title holders.

|      | None | Junior | Middle | Associate Prof | Prof. | Total |
|------|------|--------|--------|----------------|-------|-------|
| 2012 | 110  | 57     | 172    | 71             | 17    | 427   |
| 2013 | 129  | 53     | 208    | 90             | 27    | 507   |
| 2014 | 109  | 54     | 219    | 99             | 31    | 512   |
|      |      |        |        |                |       |       |

| Table 16: Academic | Title Formation | of BU Teachers |
|--------------------|-----------------|----------------|
|--------------------|-----------------|----------------|

Source: data provided by BU.

54. **Teachers' academic background.** As shown in **Table 17**, in 2014, 3 teachers have a background of college and lower education, accounting for 0.6%; 218 teachers have an UG background, accounting for 42.6%; 277 teachers have a Master's degree, accounting for 54.1%; and 14 teachers have a Ph. D degree, accounting for 2.75%.

| Table 17: A | cademic | Background | of BU | Teachers |
|-------------|---------|------------|-------|----------|
|-------------|---------|------------|-------|----------|

|      | College and below | Bachelor | Master | Ph. D | Total |
|------|-------------------|----------|--------|-------|-------|
| 2012 | 3                 | 205      | 210    | 9     | 427   |
| 2013 | 3                 | 218      | 272    | 14    | 507   |
| 2014 | 3                 | 218      | 277    | 14    | 512   |

Source: data provided by BU.

55. **Staff training**. The training activities of BU with statistical record in 2013 are shown in **Table 18.** In 2013, BU teacher training is focused on pedagogy training and online distance training.

| No. | Training Content   | Time                   | Trainees No. | Location |
|-----|--|------------------------|--------------|----------|
| 1   | Lecture on applied talents cultivation and pedagogy reform                                   | 4 hours                | 375          | BU       |
| 2   | Class on improving teachers pedagogy   | 24 hours               | 6            | Nanning  |
| 3   | Distance training of China E-learning Academy for<br>Education Leadership and Administration | 1,135 hours on average | 200          | On-line  |
| 4   | Lecture on effective pedagogy and teaching arts  | 4 hours                | 376          | BU       |
| 5   | Lecture on class preparation and teaching plan development                                   | 4 hours                | 376          | BU       |
| 6   | Lecture on ideological education   | 4 hours                | 376          | BU       |
| 7   | Lecture on classroom instruction   | 4 hours                | 376          | BU       |
| 8   | Orientation training for new teachers  | 48 hours               | 55           | BU       |

#### Table 18: Staff Training Activities in BU (2013)

Source: Data provided by BU.

56. In terms of leadership training, BU provides an annual training class of three days for middle-level leaders, including the heads and deputy heads of each administration departments and academic departments) on leadership, management skills, and national policies. No disaggregated data is available for such training.

57. So far, no international study tour is implemented. There is no systematic plan on domestic study tours, either. The departments, once having such a need, will send an application by themselves to the school leaders for review and approval. There is no any criterion on the selection of the tour members or gender proportions.

58. Industry visits are currently organized by the teaching department themselves without an overall plan. No relevant statistics is collected. No job assignments and training attachment to enterprises are conducted.

#### 4. Development Plan

59. **Enrollment plan. Table 19** shows the development plan of BU for all types of students. UG students and VC students are the main focus of development of the university, which are expected to reach 12,500 and 3,500 by 2019, with an increase of 55% and 71%, respectively compared with those in 2013. Full-time foreign students are expected to have a sharp increase in the next few years, and reach 600 by 2019 since BU is starting to enter agreements for foreign student cultivation with boarding countries, such as Laos. The scale of adult students and pre-UG students will keep at a stable level. All types of students with a total number of 21,600 will benefit from the project by 2019 through improved campus, curriculum reform, regional cooperation, and school-enterprise partnership.

| Level             | Students in School |        |        |        |        |        |        |        |        |
|-------------------|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                   | 2011               | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   |
| UG students       | 6,350              | 6,947  | 8,054  | 8,777  | 9,843  | 10,774 | 11,300 | 12,000 | 12,500 |
| VC students       | 2,293              | 2,035  | 2,052  | 2,428  | 2,847  | 3,000  | 3,000  | 3,100  | 3,500  |
| Pre-UG students   |                    |        | 412    | 500    | 500    | 500    | 500    | 500    | 500    |
| Adult UG students | 2,319              | 2,544  | 2,690  | 2,067  | 2,500  | 2,500  | 2,500  | 2,500  | 2,500  |
| Adult VC students | 1,062              | 2,012  | 2,492  | 2,406  | 2,000  | 2,000  | 2,000  | 2,000  | 2,000  |
| Foreign students  | 8                  | 14     | 3      | 8      | 100    | 200    | 300    | 500    | 600    |
| Total             | 12,032             | 13,552 | 15,703 | 16,186 | 17,790 | 18,974 | 19,600 | 20,600 | 21,600 |

 Table 19: Development Plan of BU by 2019

Source: Data provided by BU.

60. **Teacher development plan**. To match the student development, BU will increase its number of specialized teachers to 1,000, and administrative staff and logistic workers<sup>11</sup> to 300 by 2019. All these 1,300 persons will benefit from the project through improved teaching and training facilities and capacity building programs, etc.

<sup>&</sup>lt;sup>11</sup> Not including those providing paid services, such as staff of the cafeterias.
61. **School-enterprise partnership development plan**. It is expected that the four majors to be piloted for school-enterprise partnership, including aluminum advanced processing, project management, art design, and pre-school, will each have 10 enterprise partners on average. So a total of 40 enterprises will benefit from the school-enterprise partnership programs to be undertaken under the project.

# B. Baise Vocational School

#### 1. General

62. BVS, an independent legal entity, is a secondary vocational school. It is sponsored by BU and administered by the BEB. It is also a vocational training institute jointly designated by the Baise HRSSB and Baise Finance Bureau. Covering about 0.33 km<sup>2</sup>, it is currently located in the west Chengbi Campus of BU, next to the new east Chengbi Campus under construction. Due to the limitation of space for both teaching buildings and dormitories (8-10 persons a room), the school currently maintains a small-scale enrollment.

- 63. Education program. BVS currently provides two types of education program:
  - i) Full-time SVE, which takes three years to complete, including two years' learning in campus and one year's practicing outside campus. The students can choose to continue VC study in the same major either after the second year is ended or after graduation at the end of the third year. Most students choose the latter since they appreciate the practicing experience. If they want to continue VC study, the students need to send an application to one of a dozen of designated colleges<sup>12</sup> in GZAR and normally they can all be enrolled without taking any academic test. Some colleges may have some extra test, such as Guangxi College for Pre-school Education on piano and dancing skills. A new policy has been issued that from next year, about 10% top SVE students can enter UG program in the designated universities<sup>13</sup> inside GZAR with the president's recommendation letter.
  - ii) Adult continuing secondary education program for correspondence students, which takes two years. They only come to the campus for short-term in-class study during the winter and summer holidays, and study at home at other time. After graduation, secondary adult education certificates will be awarded; and
  - iii) Migrant worker short-term training, covering both migrant workers and urban unemployed persons. The program includes two types of rural laborer transferring training and rural practical technology training. BVS first gets the qualification approval from the Baise HRSSB, and then it contacts the local village/township governments, who will organize trainees at the age of 16 to 50 (for men) or 48 (for women). The training is provided locally and lasts for 15 days, including 5 days' classroom training and 10 days' practicing. Normally, a batch will include about 100

<sup>&</sup>lt;sup>12</sup> BU is not qualified as an UG level university.

<sup>&</sup>lt;sup>13</sup> It is not sure BU will be included at this stage.

students divided into two classes. After the courses, they need to take an examination and get a national vocational certificate if pass the examination.

64. **Institutional structure.** BVS is a quite small school with limited number of students and teachers, so the institutional structure is quite simple. There is no department. The senior leader is only one person, i.e. the president.

65. **Campus movement.** BVS plans to move to the existing Donghe Campus of BU during July 2014 after part of BU students move to the newly established Chengbi Campus. Three existing teaching buildings will be provided to BVS after maintenance and upgrade, together with necessary piano rooms and dancing rooms. A total of 300 dormitory beds will be reserved for BVS students, with 7 persons in a room with a separate toilet. If more enrollment is realized, BVS will ask BU to provide more. After the movement, the original West Chengbi Campus of BVS will be used as the teaching staff's living area, where dormitories for new and young teachers, living apartments for specially invited teachers, and staff entertainment activities are located.

#### 2. Students

66. **Major and student composition.** Currently, only two majors of BVS have SVE students in school, i.e. pre-school education and computer application. Current SVE students consist of three grades including the entrance years of 2011, 2012 and 2013, with a total number of 329 persons, as shown in **Table 20**. Students of Grade 2011 are working on real workshops now. It can be seen that the pre-school education major is the dominant major of the school, with its students accounting for 93% of the total of the school. In addition, it has enrolled adult students for continuous education of 0, 517 and 855 in 2013, 2012 and 2011, respectively. As for migrant worker training, about 1,187, 1,278, and 1,221 persons are covered in 2013, 2012 and 2011, respectively. The training areas include child-care workers, house-keeping servers, and restaurant servers. Our PSA analysis will focus on the full time students.

| Major                | 2013 | 2012 | 2011 | Subtotal | % of Total |
|----------------------|------|------|------|----------|------------|
| Pre-school Education | 84   | 93   | 129  | 306      | 93%        |
| Computer Application |      |      | 23   | 23       | 7%         |
| Total                | 84   | 93   | 152  | 329      |            |

 Table 20: Current SVE Student Composition in BVS

Source: Data provided by BVS.

67. **Student origin.** The students of BVS all comes from the city, as shown in **Table 21**. Nearly all district and counties are covered, except Napo County, where no enrollment outreach program was recorded. Only 10% of students are from the urban area of Youjiang, indicating almost 90% of students come from rural areas of Baise.

|          | Grade      | 2013      | Grade      | 2012      |            | Grade     | 2011     |             |       | % of          |
|----------|------------|-----------|------------|-----------|------------|-----------|----------|-------------|-------|---------------|
| Area     | Pre-school | Education | Pre-school | Education | Pre-school | Education | Computer | Application | Total | % of<br>Total |
|          | No.        | %         | No.        | %         | No.        | %         | No.      | %           |       |               |
| Youjiang | 5          | 6.0%      | 11         | 11.8%     | 16         | 10.9%     | 0        | 0.0%        | 32    | 10%           |
| Tianyang | 2          | 2.4%      | 3          | 3.2%      | 9          | 6.1%      | 0        | 0.0%        | 14    | 4%            |
| Tiandong | 5          | 6.0%      | 6          | 6.5%      | 11         | 7.5%      | 0        | 0.0%        | 22    | 7%            |
| Pingguo  | 0          | 0.0%      | 8          | 8.6%      | 0          | 0.0%      | 0        | 0.0%        | 8     | 2%            |
| Debao    | 5          | 6.0%      | 2          | 2.2%      | 0          | 0.0%      | 3        | 60.0%       | 10    | 3%            |
| Jingxi   | 5          | 6.0%      | 33         | 35.5%     | 23         | 15.6%     | 0        | 0.0%        | 61    | 19%           |
| Napo     | 0          | 0.0%      | 0          | 0.0%      | 0          | 0.0%      | 0        | 0.0%        | 0     | 0%            |
| Lingyun  | 3          | 3.6%      | 0          | 0.0%      | 10         | 6.8%      | 0        | 0.0%        | 13    | 4%            |
| Leye     | 25         | 29.8%     | 10         | 10.8%     | 21         | 14.3%     | 0        | 0.0%        | 56    | 17%           |
| Tianlin  | 10         | 11.9%     | 16         | 17.2%     | 16         | 10.9%     | 2        | 40.0%       | 44    | 13%           |
| Longlin  | 19         | 22.6%     | 2          | 2.2%      | 5          | 3.4%      | 0        | 0.0%        | 26    | 8%            |
| Xilin    | 5          | 6.0%      | 8          | 8.6%      | 36         | 24.5%     | 0        | 0.0%        | 49    | 15%           |
| Total    | 84         | 100.0%    | 93         | 100.0%    | 147        | 100.0%    | 5        | 100.0%      | 329   |               |

Table 21: Student Origin in BVS

Source: Data provided by BVS.

68. **Enrollment outreach.** Due to space limitation, BVS used to do limited outreach program. Not all counties in the City were covered. Considering this year it will move to Donghe Campus of BU, the teaching and living space can be greatly improved. Therefore, BVS is now working hard to attract more students by going to the middle schools of every county for promotion in each class, including schools in the remote and boundary areas. It is planned to make enrollment for two new majors (Marketing and Hotel Management) this year in addition to the traditional major of Pre-school Education.

69. **Graduation and Employment:** As mentioned before, the students learn basic and technical knowledge in school for the first two years, while in the third year, they go to enterprises or real workshops to develop their skill and competency in real work environment. Most practicing opportunities are provided by the school, except for those who can find a good place for practicing by themselves. Most of them can stay at the practicing agency for formal work if they want after the practicing is finished, so BVS collect employment information just after they go to the practicing places from the beginning of the third year.

70. The existing teachers of BVS are new and just started to work here since 2013. The graduation and employment data of the past years are not available now due to inadequate data transfer and computer system upgrade. According to President Cai, the BVS graduates fall short of demand, and they can easily find a job. Therefore, no employment guidance is conducted.

71. What BVS has now is only the information of Grade 2011. There are the 121 graduates, including 116 from the Pre-school Education major and 5 from the Computer Application major. All students have found a practicing unit and regarded as employed with an overall employment rate of 100%. Students of the Computer major are working in factories or enterprises, while all

students of pre-school education select working in kindergartens as teachers, or in music and dancing troupes. The average level of salary is CNY1,500 right after graduation. Some of students may switch to doing own small business, running own small kindergartens, selling clothes or etc. according to the informant interview.

72. Among the 121 graduates, 15 students, accounting for 12.4%, have decided to continue VC education since September 2014 in three colleges of Guangxi College for Pre-school Education, Liuzhou Teacher's College, and Guangxi Modern Vocational College. This proportion is low mainly because most students are from poor families and need to earn money as soon as possible to ease the financial burden of their parents. These students are all female, with 13 being Zhuang and 2 being Han.

73. Since the current employment of BVS students is generally of a lower level, it would be beneficial that the school can provide some career planning guidance to make them realize a better career path.

74. Tracer study on employment. Currently, BVS does not implement tracer study.

#### 3. Teachers

75. BVS has 13 specialized teachers and 5 logistic workers due to small enrollment scale. All the specialized teachers are taking administration tasks as well. All of them are young and just joined the school last year. BVS is also inviting BU teachers and some outside teachers, such as kindergarten principals, to provide professional lectures.

76. The teachers have limited training opportunities since they are busy with teaching and school administration. No study tour, either domestic or international, is available. It is wished that more training opportunities could be provided to them via the project to cover both professional, management and psychological areas.

# 4. Development Plan

77. **Table 22** shows the development plan of BVS for full-time SVE students, adult continuing secondary education students, and migrant workers. As a result of new campus construction, the number of SVE students is expected to be increased gradually and finally keep a stable level of 1,500 students. The scale of adult continuing secondary education is expected to remain at a low level since there is no strong demand. The scale of migrant workers will also keep at a stable level of around 1,300 people. So it is estimated that after the project is completed in 2019, 1,500 SVE students, 500 adult SVE students, and 1,300 migrant workers will be benefited.

| Loval                                | Students in School |      |      |      |      |       |       |       |       |  |
|--------------------------------------|--------------------|------|------|------|------|-------|-------|-------|-------|--|
| Level                                | 2011               | 2012 | 2013 | 2014 | 2015 | 2016  | 2017  | 2018  | 2019  |  |
| SVE students                         | 451                | 442  | 329  | 277  | 484  | 1,000 | 1,350 | 1,500 | 1,500 |  |
| Adult continuing secondary education | 855                | 517  | 0    | 500  | 500  | 500   | 500   | 500   | 500   |  |

| Table 22: Development | Plan of | BVS | by | 2019 |
|-----------------------|---------|-----|----|------|
|-----------------------|---------|-----|----|------|

Source: Data provided by BVS.

#### C. Secondary Vocational Education in Other Schools

78. As mentioned earlier in FGD work, we interviewed the Baise Agricultural Vocational School and Guangxi Youjiang Business School for Nationalities. The following relevant features are identified and summarized here to have a better understanding of BU and BVS under the general context of TVET in Baise City.

- The schools provide both SVE and adult continuing secondary education. The SVE is full-time with three years courses. In the first two years, students study in school, while during the third year they work in real workshop as professional practice.
- ii) Baise Agricultural Vocational School has about 2,000 students, while Guangxi Youjiang Business School for Nationalities has about 3,000 students. All SVE students are from junior middle schools. More than half of the students are from rural areas of counties of Baise City or the near counties of Yunnan or Guizhou Provinces.
- iii) Most students are from poor or low-income households. Employment is their main motivation to study in vocational school. Another reason they choose vocational school is due to no tuition and more chances to receive different student subsidies.
- iv) Students select majors or specialties based on their employment expectation and traditional jobs dominated by male or female. For example, female students account for about 25% in animal husbandry and veterinary majors, nearly 100% in tourism and fashion design, 0% in automobile repair and maintenance, 50% in computer, less than 10% in electronics and electric instruments, and more than 95% in preschool education, etc.
- v) No schools have majors or courses specially designed to attract female students or ethnic minority students to be enrolled in vocational schools.
- vi) About 10-15% students have dropped from schools during the three years courses. The main reason is low study capability, and difficulty to pass necessary examinations. Another reason for few students is poor family condition. They left school once they can work somewhere.
- vii) More than 90% students can achieve their first employment when graduating from school. The schools have the responsibility to assist and promote the students in employment.
- viii) About 15 to 20% students of Baise Agricultural Vocational School will continue their study by entering vocational colleges or taking correspondence courses. Most students do not like to enter vocational colleges due to high cost. About 4% students of Guangxi Youjiang Business School for Nationalities will enter vocational colleges, and 50% students have selected correspondence courses.

- ix) Teachers with dual professional certificates are very important for vocational education. About 80% teachers of Baise Agricultural Vocational School have the certificates, while in Guangxi Youjiang Business School for Nationalities, teachers with the certificates account for about one third. Teachers will achieve the certificate by training. The schools can support them in travel and lodging cost, but do not afford their training cost.
- x) Most of the teachers are from Baise City or GZAR.

# VI. POVERTY AND SOCIAL ASSESSMENT

79. This section presents the key PSA findings, which are used to design the project's social development strategies and consequent actions. The findings and relevant suggestions are presented according to poverty and affordability analysis, gender analysis, and EM analysis. Finally, the project beneficiaries are scoped and identified.

#### A. Poverty and Affordability Analysis

#### 1. Alleviation Programs in Baise TVET

80. **TVET education poverty alleviation programs**. The cost of higher education is often cited as a potential barrier for enrollment and source of additional hardship on families, especially lower income families who rely on higher education as a strategy for improved financial stability. To overcome such barrier, Baise City has implemented a series of senior TVET education poverty-alleviation programs and financing aiding policies as follows to ensure local poor students have the access to adequate senior TVET education:

- National fellowship. A national fellowship is provided for 20% of students, with an amount of CNY3,500 as first grade or CNY2,500 as second grade for both UGs and VC students;
- ii) School scholarship. Several types of scholarships are provided. One is the National Motivation Scholarship of CNY5,000 per year. Another is National Scholarship, which is CNY8,000 per year and provided to a very small number of excellent students. The third is the GZAR Government Scholarship, which is CNY5,000 and also provided to a small number of students. Students awarded with scholarships cannot enjoy the national fellowship;
- iii) Hometown-based student loan. Students can apply for student loan, no higher than CNY6,000 per year, at their hometowns via Guangxi Branch of China Development Bank. This level has remained same since 2009. Before 2013, any student can apply no matter whether she/he is from poor family. Now only poor students can apply for the loan. A market interest, about 5~6%, is applied for such loans. Students are required to pay back the principal in 14 years. No interest is

charged during the academic years; students need to pay interest from the second month after graduation. Students can pay back in advance anytime they want;

- iv) Entrance transportation subsidy for UGs. One-time subsidy is provided for poor freshmen for transportation from home to school, i.e. CNY400 for schools inside GZAR, CNY500 for places south of the Yangtze River, and CNY600 for places north of the Yangtze River. More than 1,100 students received such transportation subsidy;
- i) **Donations** by various foundations, enterprises and individuals, which is of a very small amount and is not stable;
- ii) **Tuition or loan compensation.** If students go to work at grass-root level in the 29 poverty-stricken cities or counties in GZAR, they can enjoy the higher one of tuition return or loan compensation. Such return, no more than CNY6,000 per year, will be done once a year, lasting for three consecutive years, provided that the student is still working there; and
- iii) **Part-time work provided in school**. Poor students will be given some opportunity of part-time work, such as in the librarian and cleaners. Such jobs are not many, and the remuneration is small in amount.

81. On the other hand, in order to attract more students, including students from poor families, to study in SVE, governments at different levels have taken many measures to support SVE students, including

- i) **Free tuition.** Since 2012 fall semester, all SVE students with a *hukou* of key national poor counties, boundary counties, and ethnic minority autonomous counties are exempted from tuitions, which covered all the nine national level poverty reduction counties of Baise. It is told by the key informant in the BEB that since this fall semester in 2014, all SVE students will be exempted from tuitions; the formal document is to be issued soon;
- National fellowship. A national fellowship of CNY750 is provided for each semester to 20% students to cover the living expenses such as dormitory charges, transport costs, etc. Those from exceptionally poor and boundary counties will not need to pay living expenses;
- iii) **GZAR scholarship.** This scholarship is CNY2,000 per year and covers a small number of students;
- iv) Implementation of national education driven poverty alleviation projects. (i) The <u>Baichuan Inspiration Class</u> was initiated by the West Development Department of State Council, Guangdong Baichuan Charity Foundation, GZAR Development and Reform Commission, and Baise Municipal Government in 15 July 2011 at Tiandong Vocational School in Baise. An amount of CNY10 million is used to

finance a targeted number of 1,500 students in three batches from poor families and ecologically vulnerable areas in Baise and surrounding cities to receive vocational education and then realize employment and settlement in urban area. The tuition is free, and each student is given a subsidy of CNY2,500/year for two years; those with excellent academic performance can enjoy a scholarship of CNY500. After three years' implementation, a total of 1,386 students were covered. Among the graduates of the first year, 42 students went to Beijing University of Applied Technology for further education, while others went to various aluminum enterprises for employment. It has been decided that the Baichuan Inspiration Class will be further implemented for another three years (2014-2016). (ii) The Girl Inspiration Class in Baise is the second Girl Inspiration Class in the country, which is initiated by the West Development Department of State Council and the National Training Center for Leaders from Poor Areas. It is implemented in Guangxi Youjiang Business School for Nationalities. The tuition, dormitory and textbooks are all free. Every student receives a subsidy of CNY4,000/year for two years and start practicing from the third year. The enrollment number is 350 in 2011, 400 in 2012 and 400 in 2013. (iii) The Boy Self-independence Class is initiated by the Baise Municipal Poverty Reduction Office and implemented in Guangxi Baise Agricultural School. Students from poor families are enrolled with CNY2,000 subsidy for living expenses provided every year. It was started in 2012 and has enrolled 550 students. Priority recommendation for employment will be provided for them after graduation. (iv) The 506 Vocational Education Poverty Reduction Class is initiated by the BEB, Municipal Poverty Reduction Office, and Vocational Education Center and implemented in Baise Financial Vocational School. A total of 1,500 students from 506 exceptionally poor families are enrolled for vocational education. A subsidy of CNY2,000 is provided for each student per year.

- v) **Donations** by various foundations, enterprises and individuals, which is not a big amount and is not stable;
- vi) **Part-time work provided in school**. Poor students will be given some opportunity of part-time work, such as in the librarian and cleaners. The remuneration is small in amount; and
- vii) **Subsidies for living cost** in different amounts from different counties to attract more students.

# 2. Poverty Status and Aid in BU

82. **Poverty baseline.** Since BU is located in a poor area, many students are from poor areas and mountainous areas. Among 10,106 in-school students in 2013, about 40%<sup>14</sup>, i.e. 4,006 students, are recognized as from poor families, including 3,182 UGs and 824 VC students.

<sup>&</sup>lt;sup>14</sup> This percentage is set by GZAR, and can cover those extremely poor students.

83. The major disaggregated residency baseline of UGs and VC students' enrollment are shown in **Table 23** and **Table 24**, respectively. Generally speaking, students from urban families are better-off than those from rural areas.

|           | 2013   |  |   | 2012   |   |   | 2011  |   |
|-----------|--|--|---|--|---|---|---|---|
| Urban     | Rural  | %of<br>Rural   | Urban   | Rural  | %of<br>Rural  | Urban   | Rural   | % of<br>Rural   |
| 32        | 39   | 55%  | 8   | 56   | 88%   | 6   | 33  | 85%   |
| 11        | 39   | 78%  | 2   | 41   | 95%   | 4   | 33  | 89%   |
| 45        | 85   | 65%  | 12  | 117  | 91%   | 37  | 12  | 24%   |
| 57        | 75   | 57%  | 20  | 93   | 82%   | 7   | 43  | 86%   |
| 16        | 33   | 67%  | 10  | 35   | 78%   |   |   |   |
| 31        | 59   | 66%  | 7   | 39   | 85%   | 3   | 49  | 94%   |
| 18        | 30   | 63%  | 7   | 35   | 83%   | 3   | 43  | 93%   |
| 35        | 59   | 63%  | 35  | 114  | 77%   | 18  | 71  | 80%   |
| 34        | 59   | 63%  | 26  | 91   | 78%   | 36  | 121   | 77%   |
| 21        | 27   | 56%  | 16  | 90   | 85%   | 18  | 48  | 73%   |
| 21        | 29   | 58%  | 19  | 69   | 78%   | 19  | 81  | 81%   |
| 18        | 35   | 66%  | 4   | 51   | 93%   | 7   | 52  | 88%   |
| 53        | 91   | 63%  | 25  | 109  | 81%   | 32  | 103   | 76%   |
| 33        | 67   | 67%  | 20  | 86   | 81%   | 8   | 41  | 84%   |
| 19        | 31   | 62%  | 8   | 40   | 83%   | 8   | 44  | 85%   |
| 7         | 32   | 82%  | 6   | 15   | 71%   | 8   | 27  | 77%   |
| 24        | 97   | 80%  | 14  | 87   | 86%   | 10  | 66  | 87%   |
| 19        | 27   | 59%  | 6   | 32   | 84%   | 4   | 36  | 90%   |
| 43        | 78   | 64%  | 24  | 133  | 85%   | 19  | 117   | 86%   |
| 13        | 37   | 74%  | 2   | 42   | 95%   |   |   |   |
| 15        | 35   | 70%  | 4   | 49   | 92%   | 8   | 51  | 86%   |
| 35        | 55   | 61%  | 17  | 84   | 83%   | 7   | 46  | 87%   |
| 15        | 35   | 70%  | 8   | 42   | 84%   | 6   | 48  | 89%   |
| 24        | 42   | 64%  | 9   | 31   | 78%   | 5   | 27  | 84%   |
| 16        | 31   | 66%  | 28  | 89   | 76%   | 33  | 60  | 65%   |
| 11        | 58   | 84%  | 24  | 39   | 62%   | 16  | 38  | 70%   |
| 42        | 59   | 58%  | 15  | 44   | 75%   |   |   |   |
| 56        | 113  | 67%  | 6   | 36   | 86%   | 4   | 40  | 91%   |
| 34        | 46   | 58%  | 6   | 32   | 84%   | 7   | 31  | 82%   |
| 67        | 136  | 67%  | 23  | 116  | 83%   | 23  | 134   | 85%   |
| 43        | 55   | 56%  |   |  |   |   |   |   |
| 35        | 59   | 63%  |   |  |   |   |   |   |
| 19        | 30   | 61%  |   |  |   |   |   |   |
| 10<br>978 | <b>১</b> ।<br>1814   | 65%  | <u>4</u> 11   | 1937   | 82%   | 356   | 1495  | 81%   |
|           | Urban<br>32<br>11<br>45<br>57<br>16<br>31<br>18<br>35<br>34<br>21<br>21<br>18<br>53<br>33<br>19<br>7<br>24<br>19<br>43<br>13<br>15<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>19<br>7<br>24<br>19<br>43<br>15<br>35<br>15<br>24<br>16<br>11<br>45<br>57<br>16<br>31<br>18<br>53<br>33<br>19<br>7<br>24<br>19<br>43<br>15<br>35<br>15<br>24<br>16<br>11<br>45<br>57<br>16<br>31<br>18<br>53<br>33<br>19<br>7<br>24<br>19<br>43<br>15<br>35<br>15<br>24<br>16<br>17<br>18<br>53<br>35<br>19<br>7<br>24<br>19<br>43<br>15<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>35<br>15<br>24<br>16<br>17<br>18<br>53<br>35<br>19<br>7<br>24<br>19<br>43<br>13<br>15<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>34<br>15<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>34<br>17<br>16<br>35<br>15<br>24<br>16<br>11<br>42<br>56<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>17<br>57<br>24<br>16<br>11<br>42<br>56<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>17<br>56<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>67<br>43<br>35<br>19<br>16<br>34<br>67<br>43<br>35<br>19<br>16<br>35<br>19<br>16<br>34<br>67<br>43<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>35<br>19<br>16<br>978 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      70%           35         55         61%           15         35         70% | 2013         % of<br>Rural         % of<br>Rural         Urban           32         39         55%         8           11         39         78%         2           45         85         65%         12           57         75         57%         20           16         33         67%         10           31         59         66%         7           18         30         63%         26           21         27         56%         16           21         27         56%         16           21         27         56%         16           21         27         56%         16           21         29         58%         19           18         35         66%         4           53         91         63%         25           33         67         67%         20           19         31         62%         8           7         32         82%         6           24         97         80%         14           19         35         70%         4           35 | 2013 $2012$ UrbanRural $% of$<br>RuralUrbanRural $32$ $39$ $55%$ $8$ $56$ $11$ $39$ $78%$ $2$ $41$ $45$ $85$ $65%$ $12$ $117$ $57$ $75$ $57%$ $20$ $93$ $16$ $33$ $67%$ $10$ $35$ $31$ $59$ $66%$ $7$ $39$ $18$ $30$ $63%$ $7$ $35$ $35$ $59$ $63%$ $26$ $91$ $21$ $27$ $56%$ $16$ $90$ $21$ $29$ $58%$ $19$ $69$ $18$ $35$ $66%$ $4$ $51$ $53$ $91$ $63%$ $25$ $109$ $33$ $67$ $67%$ $20$ $86$ $19$ $31$ $62%$ $8$ $40$ $7$ $32$ $82%$ $6$ $15$ $24$ $97$ $80%$ $14$ $87$ $19$ $27$ $59%$ $6$ $32$ $43$ $78$ $64%$ $24$ $133$ $13$ $37$ $74%$ $2$ $42$ $15$ $35$ $70%$ $8$ $42$ $24$ $42$ $64%$ $9$ $31$ $16$ $31$ $66%$ $28$ $89$ $11$ $58$ $84%$ $24$ $39$ $42$ $59$ $58%$ $15$ $44$ $56$ $113$ $67%$ $23$ $116$ $43$ $55$ $56%$ < | 2013         2012           Urban         Rural         % of<br>Rural         Urban         Rural         % of<br>Rural           32         39         55%         8         56         88%           11         39         78%         2         41         95%           45         85         65%         12         117         91%           57         75         57%         20         93         82%           16         33         67%         10         35         78%           31         59         66%         7         39         85%           34         59         63%         26         91         78%           21         27         56%         16         90         85%           21         29         58%         19         69         78%           33         67         67%         20         86         81%           33         67         67%         20         86         81%           19         31         62%         8         40         83%           19         27         59%         6         32         84% | 2013         2012         Image of Rural $\frac{\% of}{Rural}$ $\frac{Rural}{9}$ $\frac{\% of}{Rural}$ $\frac{1}{4}$ 32         39         55%         8         56         88%         6         6           11         39         78%         2         41         95%         4           45         85         65%         12         1117         91%         37           57         75         57%         20         93         82%         7           16         33         67%         10         35         83%         3           31         59         63%         35         114         77%         18           34         59         63%         26         91         78%         32           21         27         56%         16         90         81%         32 | 2013         2012         2011           Urban         Rural         % of<br>Rural         Urban         Rural         % of<br>Rural         Urban         Rural           32         39         55%         8         56         88%         6         33           11         39         78%         2         41         95%         4         33           45         85         65%         12         117         91%         37         12           57         75         57%         20         93         82%         7         43           16         33         67%         10         35         78%         3         49           18         30         63%         7         35         83%         3         43           35         59         63%         26         91         78%         36         121           21         27         56%         16         90         85%         18         48           21         29         58%         19         69         78%         19         113           33         67         67%         20         86 <td< td=""></td<> |

# Table 23: Major Disaggregated Residency Baseline of UG Enrollment of BU

Source: Data provided by BU.

# Table 24: Major Disaggregated Residency Baseline of VC Student Enrollment of BU

|   |       | 2013  |               |       | 2012  |               |       | 2011  |              |
|---|-------|-------|---------------|-------|-------|---------------|-------|-------|--------------|
| Major   | Urban | Rural | % of<br>Rural | Urban | Rural | % of<br>Rural | Urban | Rural | %of<br>Rural |
| Chinese Language                                | 26    | 85    | 77%           | 28    | 83    | 75%           | 4     | 38    | 90%          |
| News Editing and Production                     |       |       |               | 8     | 11    | 58%           | 10    | 20    | 67%          |
| Foreign-related Secretary                       |       |       |               | 5     | 13    | 72%           |       |       |              |
| General Liberal Arts<br>Education               | 31    | 75    | 71%           | 11    | 60    | 85%           | 16    | 70    | 81%          |
| Legal Secretary                                 |       |       |               | 7     | 11    | 61%           | 13    | 33    | 72%          |
| Housekeeping Service<br>Management              |       |       |               | 3     | 17    | 85%           | 5     | 23    | 82%          |
| Construction Engineering<br>Management          | 13    | 38    | 75%           | 13    | 53    | 80%           | 8     | 50    | 86%          |
| Project Costing                                 | 21    | 33    | 61%           |       |       |               |       |       |              |
| English Education                               | 7     | 27    | 79%           | 6     | 28    | 82%           | 11    | 61    | 85%          |
| Computer Application<br>Technology              |       |       |               |       |       |               | 3     | 23    | 88%          |
| Mold Design and Production                      |       |       |               | 3     | 15    | 83%           | 4     | 15    | 79%          |
| Material Engineering                            |       |       |               |       |       |               | 5     | 28    | 85%          |
| Electronic Information<br>Engineering           | 5     | 25    | 83%           | 6     | 16    | 73%           | 6     | 19    | 76%          |
| Mechatronics Technology                         | 10    | 16    | 62%           | 5     | 14    | 74%           | 5     | 13    | 72%          |
| Industrial Analysis and<br>Examination          |       |       |               |       |       |               | 0     | 18    | 100%         |
| Food Nutrition and Testing                      |       |       |               |       |       |               | 6     | 23    | 79%          |
| Pre-School Education                            | 38    | 199   | 84%           | 34    | 203   | 86%           | 22    | 167   | 88%          |
| Elementary School Education                     | 11    | 89    | 89%           |       |       |               |       |       |              |
| Financial Insurance                             | 7     | 26    | 79%           |       |       |               | 3     | 39    | 93%          |
| International Business                          | 8     | 17    | 68%           |       |       |               |       |       |              |
| International Business<br>(Customs Declaration) |       |       |               |       |       |               | 6     | 29    | 83%          |
| Computerized Accounting                         | 16    | 82    | 84%           | 18    | 87    | 83%           | 17    | 84    | 83%          |
| Estate Management                               | 8     | 24    | 75%           |       |       |               |       |       |              |
| Tourism Management                              | 5     | 15    | 75%           |       |       |               |       |       |              |
| Hotel Management                                | 14    | 28    | 67%           |       |       |               |       |       |              |
| Total   | 220   | 779   | 78%           | 147   | 611   | 81%           | 144   | 753   | 84%          |

Source: Data provided by BU.

84. **Tuition fee**. The tuitions for UGs and VC students show a slightly increasing trend in recent years. They are obviously raised by CNY500~2000 for different major from 2013. The current tuitions of each majors in 2013 is shown in **Table 25**. Art majors are most expensive, at CNY8,000 per year. Non-normal majors are higher than normal majors. The Elementary School Education major charges no tuition as it is to cultivate general teachers tailored for rural primary schools with all tuitions covered by the State. The charge for dormitories is from CNY400 to CNY800 for different conditions.

| Level | Category       | Major  | Tuition (CNY/yr) |
|-------|----------------|--|------------------|
|       | Art            | Musical Performance, Visual Communication Design,<br>Environmental Design, and Product Design  | 8,000            |
|       |                | Project Management, Financial Management, and Project Costing  | 4,300            |
|       |                | Biotechnology, Material Molding and Control Engineering, Material<br>Chemistry, Metal Material Engineering, Electrical Engineering and<br>Automation, Electronic Information Engineering, and<br>Communication Engineering   | 4,100            |
| UG    | Non-<br>normal | Social Physical Education Guidance and Management,<br>International Business and Trade, Marketing, Tourism<br>Management, Chinese Language and Literature, Cross-Border<br>Chinese Language, English, Thai, Math and Applied Math,<br>Computer Science and Technology, Chemical Engineering and<br>Techniques, Food Science and Engineering, Internet of Things<br>Engineering | 4,000            |
|       | Normal         | Ideological and Political Education, Humanity Education, Pre-<br>School Education, Elementary School Education, Physical<br>Education, Physics, Chemistry, Math and Applied Math (normal)  | 2,900            |
|       | Non-           | International Business, Financial Insurance, Estate Management,<br>Hotel Management, Tourism Management, Procurement and<br>Supply Management  | 4,800            |
| VC    | normal         | Computerized Accounting, Construction Engineering Management,<br>Electronic Information Engineering Technology, Mechatronics<br>Technology, Project Costing  | 5,000            |
|       |                | Elementary School Education  | Free             |
|       | Normal         | English Education, Chinese Language  | 2,500            |
|       |                | General Liberal Arts Education, Pre-School Education   | 2,500            |

| Table 25: | UG and | VC | tuitions | of | BU i | n 2013 |
|-----------|--------|----|----------|----|------|--------|
|           |        |    |          |    |      |        |

85. **Aid work.** Since the tuitions are at a high level for poor students in BU, BU has paid great attention to the financial aiding work and has established a three-level management system with leading groups. BU is specially implementing the following aiding programs:

 National fellowship. The number of students eligible for such fellowship is decided by the Ministry of Education. The basic requirements for application include: i) no more than two examination failures; and ii) having the poor student certificate. Interested students can fill in the application form first, and then classmates and teachers review and ranking are done in September. Finally, 40% of students will be recognized as poor students and divided into three grades: i) Grade A: Extremely poor, orphans, and single parented, ii) Grade B: ordinarily poor; and iii) poverty caused by incidents. Once the number of eligible students is decided in October, the fellowship will be given to students from Grade A first in November. Those poor students not coved will enjoy other types of aid. A total of 2,983 students get the national fellowship in 2013;

- ii) School scholarship. Three types of scholarships are provided in BU, including: (i) National Scholarship of CNY8,000 per year (16 students in 2013); (ii) the National Motivation Scholarship of CNY5,000 per year (325 students in 2013); and (iii) the GZAR Government Scholarship of CNY5,000 (62 students in 2013). The scholarships are closely related to the scores and overall performance of the students. Specifically, the National Scholarships are awarded only to those best performed students; while the other two scholarships are awarded to students both well performed and from poor families. According to the informant interview, those enjoying the National Scholarship are normally well-off and can buy computer or other study tools and afford extra training outside school;
- iii) Hometown-based student loan. This is most commonly used aid mechanism used in BU, with 4,236 students applying for such loan with an amount of CNY1,000 to CNY6,000 to cover their tuitions and/or living expenses;
- iv) **Tuition or loan compensation.** This has just been implemented for three years, covering 72, 62, and 99 students for the first, second and third year; and
- v) Part-time work provided in school. About 200 permanent part-time jobs are provided each year for poor students, with a remuneration of CNY5~6 per hour or CNY200~240 per month. In addition, there will be around 250 temporary jobs with the same level of remuneration.

86. The specific numbers of students enjoying the various aid mechanisms are shown in **Table 26**. The scholarships only cover a limited number of students. In contrast, the national fellowship and student loan work as the main tools for poor student aid. The total number of students enjoying the scholarships and fellowship is 3,386, accounting for 33.5% of the total. The total amount is CNY11.012 million. The number of students utilizing loan is 4,230, accounting for 41.9% of the total. The total amount of loan is CNY17.53 million. The proportion of female students getting scholarships and fellowship are as high as 70%~80%. That of the loan utilizing students is not available.

|   | Unit Amount  | Stude    | ent Numb | er          |     | % of Total |
|---|--------------|----------|----------|-------------|-----|------------|
| Aid Mechanism                             | (CNY/person) | Subtotal | Male     | Male Female |     | Students   |
| Total                                     |              | 10,106   |          |             |     |            |
| 1. No. of National Scholarship            | 8,000        | 16       | 4        | 12          | 75% | 0.16%      |
| 2. No. of National Motivation Scholarship | 5,000        | 325      | 69       | 256         | 79% | 3.22%      |
| 3. No. of GZAR Government Scholarship     | 5,000        | 62       | 14       | 48          | 77% | 0.61%      |
|   | 2,500        | 1,494    | 468      | 1,026       | 69% | 14.78%     |
| 4. No. of National Fellowship             | 3,500        | 1,489    | 429      | 1,060       | 71% | 14.73%     |
| 5. No. of Student Loan                    | ≪6,000       | 4,236    |          |             |     | 41.92%     |

# Table 26: Financial Aids of BU in 2013

Source: Data provided BU.

87. Students mainly rely on their parents' financial support for the living expenses, and most are also taking some temporary jobs found by themselves, such as distributing flyers, product promoting and home tutoring.

88. To conclude, as reflected by the key informant interviews and FGDs, poor students have no barrier to the TVET access in BU, thanks to the above-mentioned aid mechanisms.

#### 3. Poverty Status and Aid in BVS

89. As shown in **Table 27**, more than 90% students of BVS are from rural area in different counties of Baise Municipality, especially those from the Pre-school Education major. Household conditions of most students are not good. A tuition of CNY2,500 was charged before 2012. Since 2012, students don't need to pay any tuition during their study in BVS. However, they still need to face the cost for lodging and meals, transportation, textbooks and other daily necessities. Most of students select SVE in order to achieve employment early and reduce household life burden. It is one of the main reasons why most students select employment after graduate from BVS, rather than going to vocational college or university for further study. Even though some students like to continue their study, most of them select correspondence courses. In this way, they can work to earn money and study with spare time.

|                      | 2013  |       |               |       | 2012  |               | 2011  |       |               |
|----------------------|-------|-------|---------------|-------|-------|---------------|-------|-------|---------------|
| Major                | Urban | Rural | % of<br>Rural | Urban | Rural | % of<br>Rural | Urban | Rural | % of<br>Rural |
| Pre-school Education | 6     | 78    | 93%           | 8     | 85    | 91%           | 11    | 136   | 93%           |
| Computer Application |       |       |               |       |       |               | 1     | 4     | 80%           |
| Total                | 6     | 78    | 93%           | 8     | 85    | 91%           | 12    | 140   | 92%           |

| Table | 27: Maior | Disaggregated | Residency | Baseline | of BVC | Enrollment |
|-------|-----------|---------------|-----------|----------|--------|------------|
| TUDIC | 27. 1100  | Disaggiegatea | Residency | Daschine |        |            |

Source: Data provided by BVS.

90. In order to ensure all students can afford the living expenses, including CNY500/year for dormitory, CNY300/year for books and other daily expenses, BVS provides the following financial aid: (i) a national fellowship of CNY1,500 per year awarded to 20% students with both good performance and poverty background, which is expected to cover 100% students from this year; and (ii) GZAR scholarship of CNY2,000 given to 5~10% of best performed students (5 students in 2013). Students mainly rely on their parents' financial support for the living expenses, and most are also taking some temporary jobs found by themselves, such as distributing flyers and babysitting. To conclude, students who like to study in BVS have no financial barrier.

# 4. Key Recommendations for the Project

91. Based on the poverty and affordability analysis, the following action items have been incorporated into the social action plan and design and monitoring framework:

- To ensure students from low-income households to participate in TVET major reform;
- To prevent tuition and student fees from increasing as a result of the project, the loan agreement will include an assurance that prohibits students from bearing any of the project costs;
- To provide low-cost financing (such as subsidies, charity, etc.) to students from lowincome households to support their study in TVET; and
- To establish a scholarship mechanism with industry in combination between employment and financing support.

#### B. Gender Analysis

92. The gender analysis focused on female teachers and female students and building profiles that indicate their status, issues and perceptions of themselves, TVET, and the job market. Key survey results, disaggregated by gender, are presented. It's difficult not to compare results between male and female respondents, but the analysis resists doing so in most cases because the survey was not scientifically distributed or supervised to a degree that would make the results completely reliable, and yet the results do not indicate any abnormalities that would indicate they are invalid. Nevertheless, the results have largely helped to guide the focus group discussions, individual interviews, and comparative analysis with other findings and the TVET literature. These discussions illuminate much of the survey data.

# 1. Gender Profile in Baise City

93. Baise has 1.97 million of female population, accounting for about 48.3% of the total. According to the interview with the head of Baise Women Federation, the primary school dropout rate is 0.23% on average, while that of female students is 2%. The middle school dropout rate is 1.79% on average, while that of female student becomes 2.3%. Miao girls are special that they can get married as early as the age of 14 following the traditional practices. The

family awareness is changing now, with more and more proportions of females students in colleges and universities. They normally are more diligent than boys and get better scores.

94. The special programs to facilitate female student enrollment includes both the national level Spring Buds Program and the Girl Inspiration Class previously mentioned. The Spring Buds Program is aimed at helping those female dropouts due to family poverty return to school. It was initiated in 1989 by the China Children and Teenagers' Fund. Special schools are constructed and poor girls are funded to return to the school. Practical skill training is also provided.

95. As mentioned before, Baise is a major labor output city, with many local male laborers going to Guangdong and other places for working. Women mostly stay at home, working on crop farming and looking after old people and children. They have limited access to skill training.

96. Every level of government has a Women Federation agency with a female director. The Women Federation is working actively with the HRSSB and PAO to provide training to local women. The HRSSB is responsible for arrangement and the Women Federation is responsible for promotion and dissemination. Such training is faced with many difficulties, including limited financial resources and inadequate practicing centers. Each trainer is given a subsidy of only CNY300 to cover both meals and accommodation and even transportation. It is hoped that such training could be greatly improved to attract young laborers to come back to the hometowns for starting a business of their own or finding a good job. A strong demand for house-keeping is identified, which the Federation plans to do more training in this year together with other organizations since it has no funds.

# 2. Gender Baseline of BU

97. Clearly, female enrollment needs to improve in at least five of the eight institutions, but males should also be encouraged where their enrollment is also clearly lacking, namely tourism and logistics. The reasons behind the lack of male students needs further examined and incorporated into actions that this strategy recommends for improving gender balance in the TVET institutions while at the same time attracting more students.

98. **Students in school.** As shown in **Table 28**, among the 10,518 students in school by 2013, female students account for about 62%. The female proportion is particularly high for VC students, all around 75%. For UGs<sup>15</sup>, the proportion of female students is much lower and in a range of 55%~59%. The proportion of female pre-UGs is in between, being 61%. The proportion of female students is directly relevant with the major configuration. BU used to be a college famous for its teachers education majors. That's why it has more female-favored majors for VC level, including Chinese Language, Legal Secretary, English Education, Computerized Accounting, and Pre-school education. For UG level, more scientific and engineering majors are provided, which attract more male students.

<sup>&</sup>lt;sup>15</sup> The concept of "pre-UG" will be explained later in the EM analysis part.

| Grada Total No |           | Undergraduates |        |                | VC Students |        |                | Pre-undergraduates |        |                | Subtotal |        |                |
|----------------|-----------|----------------|--------|----------------|-------------|--------|----------------|--------------------|--------|----------------|----------|--------|----------------|
| Grade          | Total No. | Male           | Female | % of<br>Female | Male        | Female | % of<br>Female | Male               | Female | % of<br>Female | Male     | Female | % of<br>Female |
| 2013           | 3,783     | 1,031          | 1,493  | 59%            | 197         | 650    | 77%            | 159                | 253    | 61%            | 1,387    | 2,396  | 63%            |
| 2012           | 2,600     | 851            | 1,168  | 58%            | 134         | 447    | 77%            |                    |        |                | 985      | 1,615  | 62%            |
| 2011           | 2,358     | 766            | 968    | 56%            | 163         | 461    | 74%            |                    |        |                | 929      | 1,429  | 61%            |
| 2010           | 1,777     | 732            | 1,045  | 59%            |             |        |                |                    |        |                | 732      | 1,045  | 59%            |
| Total          | 10,518    | 3,380          | 4,674  | 58%            | 494         | 1,558  | 76%            | 159                | 253    | 61%            | 3,301    | 5,440  | 62%            |

Table 28: Enrollment of Female Students in BU

Source: Data provided by BU.

99. **Enrollment.** The major disaggregated baseline of enrollment of UGs and VC students are further shown in **Table 29** and **Table 30**.

|                                   |      | 2013   |                |      | 2012   |                |      | 2011   |                |
|-----------------------------------|------|--------|----------------|------|--------|----------------|------|--------|----------------|
| Major                             | Male | Female | % of<br>Female | Male | Female | % of<br>Female | Male | Female | % of<br>Female |
| Material Chemistry                | 41   | 30     | 42%            | 43   | 21     | 33%            | 28   | 11     | 28%            |
| Chemistry                         | 14   | 36     | 72%            | 13   | 30     | 70%            | 16   | 21     | 57%            |
| Chemical Engineering & Tech.      | 70   | 60     | 46%            | 69   | 60     | 47%            | 35   | 14     | 29%            |
| Biotechnology                     | 56   | 76     | 58%            | 52   | 61     | 54%            | 25   | 25     | 50%            |
| Food Science and Engineering      | 10   | 39     | 80%            | 13   | 32     | 71%            |      |        |                |
| Elementary School Education       | 11   | 79     | 88%            | 10   | 36     | 78%            | 10   | 42     | 81%            |
| Pre-School Education              | 1    | 47     | 98%            | 1    | 41     | 98%            | 0    | 46     | 100%           |
| Financial Management              | 21   | 73     | 78%            | 33   | 116    | 78%            | 17   | 72     | 81%            |
| Project Management                | 44   | 49     | 53%            | 57   | 60     | 51%            | 85   | 72     | 46%            |
| International Business and Trade  | 11   | 37     | 77%            | 42   | 64     | 60%            | 26   | 40     | 61%            |
| Tourism Management                | 12   | 38     | 76%            | 41   | 47     | 53%            | 33   | 67     | 67%            |
| Marketing                         | 24   | 29     | 55%            | 15   | 40     | 73%            | 28   | 31     | 53%            |
| Computer Science & Technology     | 92   | 52     | 36%            | 90   | 44     | 33%            | 94   | 41     | 30%            |
| Math and Applied Math             | 34   | 66     | 66%            | 44   | 64     | 59%            | 26   | 23     | 47%            |
| Communication Engineering         | 27   | 23     | 46%            | 30   | 18     | 38%            | 29   | 23     | 44%            |
| Social Physical Education         | 29   | 10     | 26%            | 18   | 3      | 14%            | 30   | 5      | 14%            |
| Physical Education                | 94   | 27     | 22%            | 85   | 16     | 16%            | 61   | 15     | 20%            |
| Thai                              | 6    | 40     | 87%            | 3    | 35     | 92%            | 6    | 34     | 85%            |
| English                           | 14   | 107    | 88%            | 17   | 140    | 89%            | 19   | 117    | 86%            |
| Material Molding & Control        | 42   | 8      | 16%            | 34   | 10     | 23%            |      |        |                |
| Electrical Engineering & Auto.    | 44   | 6      | 12%            | 48   | 5      | 9%             | 53   | 6      | 10%            |
| Electronic Info. Engineering      | 64   | 26     | 29%            | 64   | 37     | 37%            | 44   | 9      | 17%            |
| Metal Material Engineering        | 45   | 5      | 10%            | 40   | 10     | 20%            | 42   | 12     | 22%            |
| Physics                           | 44   | 22     | 33%            | 23   | 17     | 43%            | 16   | 16     | 50%            |
| Art Design/Environmental Design   | 21   | 26     | 55%            | 64   | 53     | 45%            | 42   | 51     | 55%            |
| Musical Performance               | 23   | 46     | 67%            | 14   | 49     | 78%            | 11   | 43     | 80%            |
| Humanity Education                | 30   | 71     | 70%            | 15   | 44     | 75%            |      |        |                |
| Ideological & Political Education | 40   | 129    | 76%            | 8    | 34     | 81%            | 17   | 27     | 61%            |
| Cross-Border Chinese Language     | 7    | 73     | 91%            | 6    | 32     | 84%            | 8    | 30     | 79%            |
| Chinese Language and Literature   | 33   | 170    | 84%            | 23   | 116    | 83%            | 28   | 129    | 82%            |
| Project Costing                   | 54   | 44     | 45%            |      |        |                |      |        |                |
| Internet of Things Engineering    | 49   | 45     | 48%            |      |        |                |      |        |                |
| Visual Communication Design       | 21   | 28     | 57%            |      |        |                |      |        |                |
| Product Design                    | 23   | 24     | 51%            |      |        |                |      |        |                |
| Total                             | 1151 | 1641   | 59%            | 1015 | 1335   | 57%            | 829  | 1022   | 55%            |

# Table 29: Major Disaggregated Gender Baseline of UGs Enrollment

Source: Data provided by BU.

|   |      | 2013   |                |      | 2012   |                |      | 2011   |                |
|---|------|--------|----------------|------|--------|----------------|------|--------|----------------|
| Major   | Male | Female | % of<br>Female | Male | Female | % of<br>Female | Male | Female | % of<br>Female |
| Chinese Language  | 52   | 52     | 50%            | 27   | 84     | 76%            | 8    | 34     | 81%            |
| News Editing and Production   |      |        |                | 3    | 16     | 84%            | 4    | 26     | 87%            |
| Foreign-related Secretary   |      |        |                | 6    | 12     | 67%            |      |        |                |
| General Liberal Arts Education  | 53   | 46     | 46%            | 23   | 48     | 68%            | 20   | 66     | 77%            |
| Legal Secretary   |      |        |                | 3    | 15     | 83%            | 12   | 34     | 74%            |
| Housekeeping Service<br>Management  |      |        |                | 18   | 2      | 10%            | 4    | 24     | 86%            |
| Construction Engineering<br>Management                                    | 19   | 30     | 61%            | 52   | 14     | 21%            | 37   | 21     | 36%            |
| Project Costing   | 28   | 21     | 43%            |      |        |                |      |        |                |
| English Education   | 16   | 17     | 52%            | 3    | 31     | 91%            | 4    | 68     | 94%            |
| Computer Application Technology   |      |        |                |      |        |                | 15   | 11     | 42%            |
| Mold Design and Production  |      |        |                | 13   | 5      | 28%            | 16   | 3      | 16%            |
| Material Engineering  |      |        |                |      |        |                | 25   | 8      | 24%            |
| Electronic Information Engineering  | 14   | 15     | 52%            | 19   | 3      | 14%            | 18   | 7      | 28%            |
| Mechatronics Technology   | 11   | 15     | 58%            | 15   | 4      | 21%            | 11   | 7      | 39%            |
| Industrial Analysis and Examination                                       |      |        |                |      |        |                | 12   | 6      | 33%            |
| Food Nutrition and Testing  |      |        |                |      |        |                | 8    | 21     | 72%            |
| Pre-School Education  | 85   | 138    | 62%            | 3    | 234    | 99%            | 2    | 187    | 99%            |
| Elementary School Education   | 18   | 75     | 81%            |      |        |                |      |        |                |
| Financial Insurance   | 10   | 21     | 68%            |      |        |                | 6    | 36     | 86%            |
| International Business<br>International Business (Customs<br>Declaration) | 6    | 18     | 75%            |      |        |                | 10   | 25     | 71%            |
| Computerized Accounting   | 33   | 62     | 65%            | 22   | 83     | 79%            | 14   | 87     | 86%            |
| Estate Management   | 14   | 17     | 55%            |      |        |                |      |        |                |
| Tourism Management  | 7    | 12     | 63%            |      |        |                |      |        |                |
| Hotel Management  | 17   | 22     | 56%            |      |        |                |      |        |                |
| Total   | 383  | 561    | 59%            | 207  | 551    | 73%            | 226  | 671    | 75%            |

#### Table 30: Major Disaggregated Gender Baseline of VC Student Enrollment

100. **Graduation and employment.** The gender disaggregated baseline of graduates/employment from each level of BU is shown in **Table 31**. The proportion of girls is much higher for VC students, close to 70%, than for UGs, close to 55%. In addition, it can be

seen that for both UGs and VC students, the employment rate of female students are higher than that of male students. The employment trend after one year is currently not available.

|                |       | 2013     |                    |       | 2012     |                    |       | 2011     |                    |
|----------------|-------|----------|--------------------|-------|----------|--------------------|-------|----------|--------------------|
|                | Total | Employed | Employment<br>Rate | Total | Employed | Employment<br>Rate | Total | Employed | Employment<br>Rate |
| Undergraduates | 1,564 | 1,468    | 93.9%              | 1,555 | 1,443    | 92.8%              | 1,391 | 1,288    | 92.6%              |
| Male           | 709   | 656      | 92.5%              | 713   | 647      | 90.7%              | 587   | 539      | 91.8%              |
| Female         | 855   | 812      | 95.0%              | 842   | 796      | 94.5%              | 804   | 749      | 93.2%              |
| % of female    | 54.7% | 55.3%    |                    | 54.1% | 55.2%    |                    | 57.8% | 58.2%    |                    |
| VC students    | 819   | 762      | 93.0%              | 829   | 782      | 94.3%              | 902   | 843      | 93.5%              |
| Male           | 260   | 237      | 91.2%              | 220   | 205      | 93.2%              | 249   | 231      | 92.8%              |
| Female         | 559   | 525      | 93.9%              | 609   | 577      | 94.7%              | 653   | 612      | 93.7%              |
| % of female    | 68.3% | 68.9%    |                    | 73.5% | 73.8%    |                    | 72.4% | 72.6%    |                    |

Table 31: Graduate Employment Data of Female Students in BU

101. The major disaggregated baseline of graduation and employment of the UGs and VC students are further shown in **Table 32** and **Table 33**, respectively.

|                                   | 2013      |         |         |          |         |         |          |                    |                   |
|-----------------------------------|-----------|---------|---------|----------|---------|---------|----------|--------------------|-------------------|
| Major                             | Total FPM |         | Male    |          |         | Female  |          |                    |                   |
|                                   | Rate      | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | % of Female<br>GDT | %of Female<br>EPM |
| Cross-Border Chinese Language     | 94.6%     | 5       | 3       | 60.0%    | 49      | 47      | 95.9%    | 90.7%              | 94.0%             |
| Chinese Language and Literature   | 94.3%     | 27      | 24      | 88.9%    | 78      | 76      | 97.4%    | 74.3%              | 76.0%             |
| Ideological & Political Education | 93.8%     | 16      | 15      | 93.8%    | 32      | 30      | 93.8%    | 66.7%              | 66.7%             |
| Project Management                | 93.3%     | 83      | 78      | 94.0%    | 52      | 48      | 92.3%    | 38.5%              | 38.1%             |
| Marketing                         | 95.3%     | 36      | 34      | 94.4%    | 28      | 26      | 92.9%    | 43.8%              | 43.3%             |
| International Business and Trade  | 93.8%     | 25      | 22      | 88.0%    | 39      | 38      | 97.4%    | 60.9%              | 63.3%             |
| Tourism Management                | 89.9%     | 23      | 20      | 87.0%    | 46      | 43      | 93.5%    | 66.7%              | 68.3%             |
| Financial Management              | 92.9%     | 28      | 24      | 85.7%    | 70      | 67      | 95.7%    | 71.4%              | 73.6%             |
| English                           | 95.3%     | 8       | 6       | 75.0%    | 98      | 95      | 96.9%    | 92.5%              | 94.1%             |
| Computer Science & Technology     | 93.3%     | 64      | 60      | 93.8%    | 26      | 24      | 92.3%    | 28.9%              | 28.6%             |
| Math and Applied Math             | 93.3%     | 31      | 29      | 93.5%    | 44      | 42      | 95.5%    | 58.7%              | 59.2%             |
| Metal Material Engineering        | 97.6%     | 63      | 59      | 93.7%    | 20      | 20      | 100.0%   | 24.1%              | 25.3%             |
| Electronic Info. Engineering      | 94.9%     | 56      | 53      | 94.6%    | 22      | 21      | 95.5%    | 28.2%              | 28.4%             |
| Physics                           | 87.5%     | 22      | 20      | 90.9%    | 10      | 9       | 90.0%    | 31.3%              | 31.0%             |
| Chemical Engineering & Tech.      | 98.8%     | 40      | 39      | 97.5%    | 45      | 43      | 95.6%    | 52.9%              | 52.4%             |
| Chemistry                         | 95.0%     | 13      | 13      | 100.0%   | 27      | 26      | 96.3%    | 67.5%              | 66.7%             |
| Biotechnology                     | 86.1%     | 20      | 19      | 95.0%    | 16      | 14      | 87.5%    | 44.4%              | 42.4%             |
| Musical Performance               | 93.2%     | 20      | 18      | 90.0%    | 39      | 38      | 97.4%    | 66.1%              | 67.9%             |
| Art Design                        | 94.1%     | 51      | 46      | 90.2%    | 67      | 64      | 95.5%    | 56.8%              | 58.2%             |
| Physical Education                | 91.3%     | 59      | 56      | 94.9%    | 10      | 8       | 80.0%    | 14.5%              | 12.5%             |
| Social Physical Education         | 96.0%     | 18      | 17      | 94.4%    | 7       | 6       | 85.7%    | 28.0%              | 26.1%             |
| Pre-School Education              | 93.1%     | 1       | 1       | 100.0%   | 28      | 26      | 92.9%    | 96.6%              | 96.3%             |
| Total                             |           | 709     | 656     | 92.5%    | 853     | 811     | 95.1%    | 54.6%              | 55.3%             |

# Table 32: Major Disaggregated Gender Baseline of UGs Employment

|                                   |           |         |         |          | 201     | 2       |          |                    |                   |
|-----------------------------------|-----------|---------|---------|----------|---------|---------|----------|--------------------|-------------------|
| Major                             | Total FPM |         | Male    |          |         | Female  |          |                    |                   |
|                                   | Rate      | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | % of Female<br>GDT | %of Female<br>EPM |
| Cross-Border Chinese Language     | 93.55%    | 16      | 14      | 87.5%    | 46      | 45      | 97.8%    | 74.2%              | 76.3%             |
| Chinese Language and Literature   | 91.55%    | 28      | 22      | 78.6%    | 140     | 133     | 95.0%    | 83.3%              | 85.8%             |
| Ideological & Political Education | 92.31%    | 13      | 10      | 76.9%    | 27      | 26      | 96.3%    | 67.5%              | 72.2%             |
| Tourism Management                | 92.66%    | 30      | 27      | 90.0%    | 80      | 75      | 93.8%    | 72.7%              | 73.5%             |
| Project Management                | 89.01%    | 47      | 42      | 89.4%    | 44      | 2       | 4.5%     | 48.4%              | 4.5%              |
| Marketing                         | 92.31%    | 46      | 41      | 89.1%    | 32      | 31      | 96.9%    | 41.0%              | 43.1%             |
| English                           | 93.33%    | 16      | 15      | 93.8%    | 133     | 120     | 90.2%    | 89.3%              | 88.9%             |
| Math and Applied Math             | 94.30%    | 32      | 29      | 90.6%    | 38      | 37      | 97.4%    | 54.3%              | 56.1%             |
| Computer Science & Technology     | 94.29%    | 41      | 36      | 87.8%    | 26      | 25      | 96.2%    | 38.8%              | 41.0%             |
| Physics                           | 93.55%    | 13      | 11      | 84.6%    | 18      | 18      | 100.0%   | 58.1%              | 62.1%             |
| Electronic Info. Engineering      | 94.67%    | 70      | 67      | 95.7%    | 15      | 15      | 100.0%   | 17.6%              | 18.3%             |
| Metal Material Engineering        | 89.80%    | 68      | 63      | 92.6%    | 30      | 25      | 83.3%    | 30.6%              | 28.4%             |
| Chemical Engineering & Tech.      | 90.00%    | 51      | 44      | 86.3%    | 29      | 29      | 100.0%   | 36.3%              | 39.7%             |
| Biotechnology                     | 95.83%    | 40      | 38      | 95.0%    | 32      | 32      | 100.0%   | 44.4%              | 45.7%             |
| Musical Performance               | 93.15%    | 22      | 20      | 90.9%    | 51      | 48      | 94.1%    | 69.9%              | 70.6%             |
| Art Design                        | 93.335    | 83      | 76      | 91.6%    | 67      | 64      | 95.5%    | 44.7%              | 45.7%             |
| Physical Education                | 93.33%    | 60      | 57      | 95.0%    | 15      | 13      | 86.7%    | 20.0%              | 18.6%             |
| Total                             |           | 676     | 612     | 90.5%    | 823     | 738     | 89.7%    | 54.9%              | 54.7%             |

|                                   |           |         |         |          | 201     | 1       |          |                    |                    |
|-----------------------------------|-----------|---------|---------|----------|---------|---------|----------|--------------------|--------------------|
| Major                             | Total FPM |         | Male    |          |         | Female  |          |                    |                    |
|                                   | Rate      | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | % of Female<br>GDT | % of Female<br>EPM |
| Cross-Border Chinese Language     | 84.0%     | 16      | 14      | 87.5%    | 65      | 63      | 96.9%    | 80.2%              | 81.8%              |
| Chinese Language and Literature   | 93.8%     | 51      | 48      | 94.1%    | 126     | 120     | 95.2%    | 71.2%              | 71.4%              |
| Ideological & Political Education | 96.6%     | 20      | 19      | 95.0%    | 39      | 38      | 97.4%    | 66.1%              | 66.7%              |
| Tourism Management                | 94.4%     | 35      | 31      | 88.6%    | 72      | 70      | 97.2%    | 67.3%              | 69.3%              |
| English                           | 90.3%     | 25      | 23      | 92.0%    | 170     | 153     | 90.0%    | 87.2%              | 86.9%              |
| Computer Science & Technology     | 88.9%     | 69      | 59      | 85.5%    | 57      | 53      | 93.0%    | 45.2%              | 47.3%              |
| Math and Applied Math             | 92.8%     | 56      | 54      | 96.4%    | 83      | 78      | 94.0%    | 59.7%              | 59.1%              |
| Electronic Info. Engineering      | 90.6%     | 121     | 117     | 96.7%    | 49      | 39      | 79.6%    | 28.8%              | 25.0%              |
| Physics                           | 88.9%     | 35      | 31      | 88.6%    | 19      | 16      | 84.2%    | 35.2%              | 34.0%              |
| Chemical Engineering & Tech.      | 98.1%     | 60      | 58      | 96.7%    | 44      | 44      | 100.0%   | 42.3%              | 43.1%              |
| Biotechnology                     | 98.3%     | 26      | 26      | 100.0%   | 31      | 30      | 96.8%    | 54.4%              | 53.6%              |
| Musical Performance               | 100.0%    | 16      | 16      | 100.0%   | 37      | 35      | 94.6%    | 69.8%              | 68.6%              |
| Physical Education                | 90.0%     | 58      | 52      | 89.7%    | 12      | 11      | 91.7%    | 17.1%              | 17.5%              |
| Total                             |           | 588     | 548     | 93.2%    | 804     | 750     | 93.3%    | 57.8%              | 57.8%              |

EPM = employment; GDT = graduate Source: Data provided by BU.

|  |           |         |         |          | 2013    |         |          |                    |                   |
|--|-----------|---------|---------|----------|---------|---------|----------|--------------------|-------------------|
| Major                                  | Total EDM |         | Male    |          |         |         | Female   | )                  |                   |
|  | Rate      | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | % of Female<br>GDT | %of Female<br>EPM |
| Chinese Language                       | 92.00%    | 8       | 3       | 37.5%    | 42      | 41      | 97.6%    | 84.0%              | 93.2%             |
| Foreign-related Secretary              | 95.00%    | 3       | 3       | 100.0%   | 17      | 16      | 94.1%    | 85.0%              | 84.2%             |
| News Editing and Production            | 94.12%    | 10      | 9       | 90.0%    | 24      | 23      | 95.8%    | 70.6%              | 71.9%             |
| Legal Secretary                        | 92.59%    | 15      | 14      | 93.3%    | 12      | 11      | 91.7%    | 44.4%              | 44.0%             |
| Housekeeping Service<br>Management     | 92.86%    | 4       | 4       | 100.0%   | 10      | 9       | 90.0%    | 71.4%              | 69.2%             |
| General Liberal Arts                   | 93.33%    | 42      | 37      | 88.1%    | 93      | 88      | 94.6%    | 68.9%              | 70.4%             |
| Applied Vietnamese                     | 100.00%   | 4       | 4       | 100.0%   | 10      | 10      | 100.0%   | 71.4%              | 71.4%             |
| Applied English                        | 90.20%    | 4       | 2       | 50.0%    | 47      | 44      | 93.6%    | 92.2%              | 95.7%             |
| Computerized Accounting                | 93.40%    | 22      | 21      | 95.5%    | 79      | 73      | 92.4%    | 78.2%              | 77.7%             |
| Material Engineering                   | 89.74%    | 27      | 26      | 96.3%    | 12      | 11      | 91.7%    | 30.8%              | 29.7%             |
| Electronic Information<br>Engineering  | 92.31%    | 19      | 17      | 89.5%    | 7       | 7       | 100.0%   | 26.9%              | 29.2%             |
| Mechatronics Technology                | 97.44%    | 37      | 36      | 97.3%    | 2       | 2       | 100.0%   | 5.1%               | 5.3%              |
| Communication Technology               | 90.00%    | 10      | 8       | 80.0%    | 10      | 10      | 100.0%   | 50.0%              | 55.6%             |
| Industrial Analysis and<br>Examination | 94.74%    | 12      | 12      | 100.0%   | 7       | 6       | 85.7%    | 36.8%              | 33.3%             |
| Food Nutrition and Testing             | 100.00%   | 6       | 6       | 100.0%   | 15      | 13      | 86.7%    | 71.4%              | 68.4%             |
| Applied Chemical Technology            | 100.00%   | 19      | 19      | 100.0%   | 7       | 7       | 100.0%   | 26.9%              | 26.9%             |
| 'Pre-School Education                  | 92.74%    | 1       | 1       | 100.0%   | 81      | 70      | 86.4%    | 98.8%              | 98.6%             |
| Total                                  |           | 243     | 222     | 91.4%    | 475     | 441     | 92.8%    | 66.2%              | 66.5%             |

# Table 33: Major Disaggregated Gender Baseline of VC Student Employment

|  |           |         |         |          | 2012    |         |          |                    |                    |
|--|-----------|---------|---------|----------|---------|---------|----------|--------------------|--------------------|
| Major  | Total EPM |         | Male    |          |         |         | Female   |                    |                    |
|  | Rate      | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | % of Female<br>GDT | % of Female<br>EPM |
| Chinese Language                             | 93.22%    | 8       | 8       | 100.0%   | 51      | 47      | 92.16%   | 86.4%              | 85.5%              |
| News Editing and Production                  | 100.00%   | 7       | 7       | 100.0%   | 24      | 24      | 100.00%  | 77.4%              | 77.4%              |
| Legal Secretary                              | 90.48%    | 12      | 11      | 91.7%    | 30      | 27      | 90.00%   | 71.4%              | 71.1%              |
| General Liberal Arts                         | 95.45%    | 20      | 19      | 95.0%    | 64      | 61      | 95.31%   | 76.2%              | 76.3%              |
| Procurement and Supply<br>Management         | 95.65%    | 7       | 7       | 100.0%   | 15      | 14      | 93.33%   | 68.2%              | 66.7%              |
| Hotel Management                             | 91.7%     | 1       | 1       | 100.0%   | 23      | 22      | 95.7%    | 95.8%              | 95.7%              |
| Tourism Management                           | 95.0%     | 2       | 2       | 100.0%   | 18      | 16      | 88.9%    | 90.0%              | 88.9%              |
| International Business (Customs Declaration) | 92.9%     | 8       | 8       | 100.0%   | 34      | 32      | 94.1%    | 81.0%              | 80.0%              |
| Estate Management                            | 93.3%     | 4       | 4       | 100.0%   | 26      | 24      | 92.3%    | 86.7%              | 85.7%              |
| Applied English                              | 92.6%     | 2       | 2       | 100.0%   | 25      | 23      | 92.0%    | 92.6%              | 92.0%              |
| Applied Vietnamese                           | 95.5%     | 4       | 4       | 100.0%   | 18      | 17      | 94.4%    | 81.8%              | 81.0%              |
| Computerized Accounting                      | 94.7%     | 18      | 15      | 83.3%    | 77      | 76      | 98.7%    | 81.1%              | 83.5%              |
| Electronic Information                       | 95.5%     | 12      | 12      | 100.0%   | 10      | 9       | 90.0%    | 45.5%              | 42.9%              |
| Mechatronics Technology                      | 94.3%     | 28      | 26      | 92.9%    | 7       | 7       | 100.0%   | 20.0%              | 21.2%              |
| Communication Technology                     | 94.6%     | 37      | 36      | 97.3%    | 20      | 20      | 100.0%   | 35.1%              | 35.7%              |
| Industrial Analysis and<br>Examination       | 100.0%    | 15      | 13      | 86.7%    | 25      | 25      | 100.0%   | 62.5%              | 65.8%              |
| Food Nutrition and Testing                   | 92.5%     | 23      | 20      | 87.0%    | 17      | 17      | 100.0%   | 42.5%              | 45.9%              |
| Pre-School Education                         | 93.9%     | 6       | 6       | 100.0%   | 27      | 25      | 92.6%    | 81.8%              | 80.6%              |
| Total  | 95.0%     | 4       | 4       | 100.0%   | 99      | 93      | 93.9%    | 96.1%              | 95.9%              |

|   |           |         |         |          | 2011    |         |          |                    |                   |
|---|-----------|---------|---------|----------|---------|---------|----------|--------------------|-------------------|
| Maior   | Total EDM |         | Male    |          |         |         | Female   | •                  |                   |
|   | Rate      | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | % of Female<br>GDT | %of Female<br>EPM |
| Chinese Language                                | 93.75%    | 8       | 7       | 87.5%    | 72      | 64      | 88.9%    | 90.0%              | 90.1%             |
| Foreign-related Secretary                       | 89.13%    | 2       | 2       | 100.0%   | 44      | 41      | 93.2%    | 95.7%              | 95.3%             |
| Legal Secretary                                 | 95.8%     | 11      | 11      | 100.0%   | 37      | 35      | 94.6%    | 77.1%              | 76.1%             |
| General Liberal Arts                            | 92.2%     | 14      | 11      | 78.6%    | 50      | 48      | 96.0%    | 78.1%              | 81.4%             |
| Procurement and Supply<br>Management            | 93.8%     | 15      | 14      | 93.3%    | 33      | 31      | 93.9%    | 68.8%              | 68.9%             |
| Financial Insurance                             | 94.3%     | 15      | 15      | 100.0%   | 38      | 34      | 89.5%    | 71.7%              | 69.4%             |
| Investment Promotion<br>Management              | 94.1%     | 18      | 18      | 100.0%   | 33      | 30      | 90.9%    | 64.7%              | 62.5%             |
| International Business<br>(Customs Declaration) | 94.8%     | 14      | 14      | 100.0%   | 44      | 43      | 97.7%    | 75.9%              | 75.4%             |
| Estate Management                               | 98.0%     | 22      | 21      | 95.5%    | 28      | 28      | 100.0%   | 56.0%              | 57.1%             |
| Applied Vietnamese                              | 93.2%     | 10      | 10      | 100.0%   | 34      | 32      | 94.1%    | 77.3%              | 76.2%             |
| Applied English                                 | 92.7%     | 3       | 1       | 33.3%    | 39      | 37      | 94.9%    | 92.9%              | 97.4%             |
| Computer Application<br>Technology              | 87.9%     | 17      | 14      | 82.4%    | 17      | 16      | 94.1%    | 50.0%              | 53.3%             |
| Computerized Accounting                         | 93.8%     | 12      | 11      | 91.7%    | 84      | 77      | 91.7%    | 87.5%              | 87.5%             |
| Electronic Information<br>Engineering           | 92.9%     | 31      | 28      | 90.3%    | 11      | 11      | 100.0%   | 26.2%              | 28.2%             |
| Industrial Analysis and<br>Examination          | 95.1%     | 14      | 14      | 100.0%   | 28      | 26      | 92.9%    | 66.7%              | 65.0%             |
| Applied Chemical Technology                     | 100.0%    | 22      | 22      | 100.0%   | 19      | 18      | 94.7%    | 46.3%              | 45.0%             |
| Physical Education                              | 91.7%     | 17      | 16      | 94.1%    | 7       | 6       | 85.7%    | 29.2%              | 27.3%             |
| 'Pre-School Education                           | 97.6%     | 4       | 3       | 75.0%    | 37      | 37      | 100.0%   | 90.2%              | 92.5%             |
| Total   |           | 249     | 232     | 93.2%    | 655     | 614     | 93.7%    | 72.5%              | 72.6%             |

EPM = employment; GDT = graduate Source: Data provided by BU.

102. **Gender related mechanism.** BU pays great attention to female students' education. A female head or deputy head of the Student Work Department is required to be responsible for female related issues and work to provide guidance on their development, view of love, view of employment and career planning. There is a Female Student Department in the Student Union, and every class has a female student representative.

103. A Female Student Festival is celebrated on 7 March every year, during which some activities are held specifically for female students, such as expert workshops, recreational activities inside the campus, sports games. The workshops cover sex related and psychological knowledge and are held also in other time in addition to the festival.

104. BU provides a course on psychological health and safety knowledge and a psychological counseling room. The female dormitories are separated with male dormitories, with 24-hour entrance management by specialized female staff. No sexual harassment is reported and no reporting mechanism has been establishment to address such harassment if any.

105. **Gender profile of teachers.** BU currently has 627 staff members, among which 271 persons or 43.2% are female, as shown in **Table 34**. Specifically, among 399 specialized teachers, 178 persons or 44.6% are female; among 180 administrative staff, 77 persons or 42.8% are female; among 48 logistic workers, 16 or only 33.3% are female.

| Ite    | m   | Specialized Teacher | Administrative Staff | Logistic Workers | Total |
|--------|-----|---------------------|----------------------|------------------|-------|
| Total  | No. | 399                 | 180                  | 48               | 627   |
| Mala   | No. | 221                 | 103                  | 32               | 356   |
| wate   | %   | 55.4%               | 57.2%                | 66.7%            | 56.8% |
| Fomalo | No. | 178                 | 77                   | 16               | 271   |
| Female | %   | 44.6%               | 42.8%                | 33.3%            | 43.2% |

Table 34: Female Staff Baseline of BU

Source: Data provided by BVS.

106. The major disaggregated gender baseline of specialized teachers is further shown in **Table 35**.

| Major  | Male | % of Male | Female | % of Female |
|--|------|-----------|--------|-------------|
| Chinese Language and Literature                    | 17   | 65.4%     | 9      | 34.6%       |
| Cross-Border Chinese Language                      | 5    | 45.5%     | 6      | 54.5%       |
| Humanity Education                                 | 9    | 56.3%     | 7      | 43.8%       |
| Ideological & Political Education                  | 5    | 41.7%     | 7      | 58.3%       |
| International Business and Trade                   | 6    | 60.0%     | 4      | 40.0%       |
| Project Management                                 | 5    | 62.5%     | 3      | 37.5%       |
| Marketing  | 5    | 55.6%     | 4      | 44.4%       |
| Financial Management                               | 8    | 61.5%     | 5      | 38.5%       |
| Tourism Management                                 | 3    | 30.0%     | 7      | 70.0%       |
| Project costing                                    | 5    | 55.6%     | 4      | 44.4%       |
| English  | 13   | 28.9%     | 32     | 71.1%       |
| Thai   | 0    | 0.0%      | 9      | 100.0%      |
| Math and Applied Math                              | 13   | 65.0%     | 7      | 35.0%       |
| Communication Engineering                          | 2    | 66.7%     | 1      | 33.3%       |
| Computer Science & Technology                      | 13   | 65.0%     | 7      | 35.0%       |
| Internet of Things Engineering                     | 1    | 100.0%    | 0      | 0.0%        |
| Material Molding and Control Engineering           | 1    | 50.0%     | 1      | 50.0%       |
| Metal Material Engineering                         | 12   | 75.0%     | 4      | 25.0%       |
| Electrical Engineering and Automation              | 3    | 60.0%     | 2      | 40.0%       |
| Electronic Info. Engineering                       | 7    | 87.5%     | 1      | 12.5%       |
| Physics  | 8    | 66.7%     | 4      | 33.3%       |
| Chemistry  | 5    | 71.4%     | 2      | 28.6%       |
| Biotechnology                                      | 4    | 66.7%     | 2      | 33.3%       |
| Material Chemistry                                 | 6    | 85.7%     | 1      | 14.3%       |
| Chemical Engineering & Tech.                       | 4    | 50.0%     | 4      | 50.0%       |
| Food Science and Engineering                       | 5    | 71.4%     | 2      | 28.6%       |
| Facility-based Agriculture Science and Engineering | 3    | 75.0%     | 1      | 25.0%       |
| Physical Education                                 | 13   | 68.4%     | 6      | 31.6%       |
| Social Physical Education                          | 8    | 80.0%     | 2      | 20.0%       |
| Musical Performance                                | 8    | 44.4%     | 10     | 55.6%       |
| Art Design   | 6    | 50.0%     | 6      | 50.0%       |
| Environmental Design                               | 1    | 25.0%     | 3      | 75.0%       |
| Visual Communication Design                        | 3    | 60.0%     | 2      | 40.0%       |
| Product Design                                     | 3    | 75.0%     | 1      | 25.0%       |
| Fashion and Costumes Design                        | 0    | 0.0%      | 1      | 100.0%      |
| Pre-School Education                               | 4    | 30.8%     | 9      | 69.2%       |
| Elementary School Education                        | 7    | 77.8%     | 2      | 22.2%       |
| Total  | 221  | 55.4%     | 178    | 44.6%       |

# Table 35: Major Disaggregated Gender Baseline of Specialized Teachers of BU

Source: Data provided by BU.

#### 3. Gender Baseline of BVS

107. **Female student enrollment.** As shown in **Table 36**, female students account for an absolutely dominant proportion of 90.6% among all students. Such high proportion is directly relevant to the setup of specialties. Female students in the Pre-school Education major account for 87.1% to 96.6%, while in the Computer major, 100% students are male. This is because pre-school education is quite welcomed by female students; only very few boys will select this major; and vice versa for computer.

| Con      | Ja <i>w</i> | Grade 2013 | Grade 2012 | Grade      | 2011     | Tatal |  |
|----------|-------------|------------|------------|------------|----------|-------|--|
| Gend     | aer         | Pre-school | Pre-school | Pre-school | Computer | Total |  |
| Total    | No.         | 84         | 93         | 147        | 5        | 329   |  |
| Mala     | No.         | 9          | 12         | 5          | 5        | 31    |  |
| wate     | %           | 10.7%      | 12.9%      | 3.7%       | 100.0%   | 9.4%  |  |
| Fomalo   | No.         | 75         | 81         | 142        | 0        | 298   |  |
| Feilidie | %           | 89.3%      | 87.1%      | 96.6%      | 0.0%     | 90.6% |  |

Table 36: Female Students Enrollment in BVS

Source: Data provided by BVS.

108. The gender disaggregated baseline of graduates/employment from BVS is not available according to the teacher responsible for enrollment and employment of BVS.

109. **Female student graduation and employment.** The existing female students of BVS are all of the Pre-school Education major, and they all can quite easily find a job in kindergartens. It is indicated that there is no employment barrier for female students. They enjoy the same level of salary and job with the male students.

110. As mentioned before, BVS only has the accurate employment data for Grade 2011. A total of 147 students were enrolled, 142 being female and 5 being male. Now the graduate number becomes 121, all being male. So 26 students have dropped out for various reasons, partly due to low study capability, and partly due to having found appropriate jobs.

111. Among the 121 graduates, 111 are female students, accounting for 91.7. All students have found a job, thus the employment rate of all students including female students is 100%. The female students, since all majored in pre-school education, do not encounter specific barrier during the job-hunting process according to the informant interview. They generally enjoy the same level or sometimes even higher level of salary with the male students.

| N      | ationality       | Pre-school | Computer | Total  |  |
|--------|------------------|------------|----------|--------|--|
|        | No. of graduates | 0          | 5        | 5      |  |
| Male   | No. employed     | 0          | 5        | 5      |  |
|        | Employment rate  |            | 100.0%   | 100.0% |  |
| Female | No. of graduates | 116        |          | 116    |  |
|        | No. employed     | 116        |          | 116    |  |
|        | Employment rate  | 100.0%     |          | 100.0% |  |
| Total  | No. of graduates | 116        | 5        | 121    |  |
|        | No. employed     | 116        | 5        | 121    |  |
|        | Employment rate  | 100.0%     | 100.0%   | 100.0% |  |

Table 37: Major Disaggregated Gender Baseline of Employment of BVS (Grade 2011)

Source: Data provided by BVS.

112. **Gender related mechanism**. BVS provides a course on psychological health and safety knowledge and a psychological counseling room. The female dormitories are separated with male dormitories, with 24-hour entrance management by specialized female staff. No sexual harassment is reported and no reporting mechanism has been establishment to address such harassment. The female students are satisfied with the campus security.

113. **Female teachers.** As shown in **Table 38**, BVS has 13 specialized teachers, among which 5 are male while 8 are female, accounting for about 61.5%. In addition, it has 5 logistic workers, among whom 3 are female, accounting for 60%. The female proportion in the two majors is also similar, being 60% and 66.7%, respectively. The FGD reveals that these female teachers enjoy same salary for same job positions and there is no distinct sexual discrimination.

| lte                  | em       |     | Pre-school Computer Tota |       |       |  |  |  |
|----------------------|----------|-----|--------------------------|-------|-------|--|--|--|
|                      | Subtotal | No. | 10                       | 3     | 13    |  |  |  |
|                      | Mala     | No. | 4                        | 1     | 5     |  |  |  |
| Specialized teachers | Iviale   | %   | 4.8%                     | 20.0% | 38.5% |  |  |  |
|                      | Fomalo   | No. | 6                        | 2     | 8     |  |  |  |
|                      | remale   | %   | 60.0% 66.7%              |       | 61.5% |  |  |  |
|                      | Subtotal | No. | 5                        |       |       |  |  |  |
|                      | Mala     | No. | 2                        |       |       |  |  |  |
| Logistic workers     | Iviale   | %   | 40.0%                    |       |       |  |  |  |
|                      | Fomalo   | No. | 3                        |       |       |  |  |  |
|                      | remale   | %   | 60.0%                    |       |       |  |  |  |
|                      | Subtotal | No. |                          |       |       |  |  |  |
| Total                | Fomale   | No. | 11                       |       |       |  |  |  |
|                      | remale   | %   | 61.1%                    |       |       |  |  |  |

 Table 38: Female Staff Proportion in BVS

Source: Data provided by BVS.

#### 4. Gender Baseline of the Job Placement in Four Base Industries

114. The baseline data of the job placement in the four base industries is not available.

#### 5. **Project Impacts on Female Students**

115. It is anticipated that the project will not make any negative impact on female students. Since girls account for a bigger proportion, especially in BVS, the project will benefit more female students than male students.

#### 6. Recommendations for the Project

- (i) The proportion of female students has been high enough in BU and BVS, which is mainly due to major establishment. The high proportion should be kept during the major reform and employment promotion;
- (ii) Female teachers and students should participate in design and practices of multilevel TVET system construction;
- (iii) The leadership and professional development training programs should include a module on gender issues, including gender sensitive training and breaking the gender stereotypes of different majors/occupations;
- (iv) In constructing the new campus buildings, gender design elements should be incorporated. These buildings should have separate toilets for men and women with locks from inside. Separate male and female dormitories should be constructed. These separate dormitories can be utilized to conduct career counseling for male and female students – provide them information on job search, resume development, job options and linking different pathways; and
- (v) The tracer study reports will incorporate gender analysis demonstrating female student graduation, job changes, job satisfaction, and choices of continuation of higher education in all priority majors.

# C. Ethnic Minority Analysis

# 1. General Profile of the City

116. **EM Population of Baise City.** As stated Section II.D, Baise City is an area having many ethnic groups, including Zhuang, Han, Yao, Miao, Yi, Gelao, Buyi, Hui, Dong, Melao, Man and others. Only 13.31% of the population are Han people, while about 86.69% of the total population of Baise City are EM people in 2013. As shown in **Table 39**, Zhuang is the dominant ethnic group, while another two major minority groups are Yao and Miao. The other EM groups all have a very small number of population.

117. **Zhuang Nationality:** The Zhuang people is the indigenous peoples in Baise with a population of 3.21 million, accounting for about 78.64% of the total population and 90.71% of the EM population of Baise city. The Zhuang people are derived from the ancient Yue people in

southern China, and are distributed in 12 counties/district of Baise. They have a long history and splendid culture. The Zhuang people have their own national language which belongs to the Zhuang-Dai branch of Zhuang-Dong languages of Sino-Tibetan languages. In Baise, the Zhuang dialects can be divided into southern Zhuang dialect and northern Zhuang dialect. Since Tang and Song dynasties, a local font has been popular in Baise Zhuang people. The font was made up of the Chinese characters and was used to record the Zhuang people's folk scripture, contracts, accounts, folk tales, folk song lyrics and so on. Now, Zhuang people are using the same Chinese characters with Han people.

118. **Yao Nationality:** The Yao Nationality in Baise came from provinces of Guangdong, Hunan, Yunnan, Guizhou and other places in Ming Dynasty. They mainly settled in counties such as Tianlin, Xilin, Lingyun, Napo, Pingguo, Debao, Tiandong and Youjiang District. Its population is over 0.157 million, accounting 3.84% of the city's total population and 4.43% of the EM population. Yao people have their own languages but no characters, belonging to Yao in Miao branch of Sino-Tibetan family. They use Chinese characters.

119. **Miao Nationality:** The Miao Nationality in Baise came from Anshun, Xingyi in Guizhou province in early Qing Dynasty. They mainly settled in counties such as Lingyun, Xilin, Napo, and Tianlin. Its population is over 0.152 million, accounting 3.72% of the city's total population and 4.3% of the EM population. Miao people have their own languages but no characters, belonging to Miaoyao branch of Sino-Tibetan family. They use Chinese characters. Miao people normally get married at an early age, especially girls (at an age of 14). As a result, they are not as educated as other EM groups.

120. **Yi Nationality:** The Yi Nationality in Baise came from Yunnan and Guizhou provinces and other places in Tang Dynasty. Its population is about 8,032, accounting for 0.2% of the city's total population. They mainly settled in counties such as Longlin, Xilin, Tianlin and Napo. Yi people have their own characters and languages, belonging to Tibet-Myanmar branch of Sino-Tibetan family. Few Yi people can use or understand the Yi characters now because they are living with Han people and using Chinese characters for a long time.

121. **Gelao Nationality:** The Gelao Nationality in Baise came from Guizhou province in Qing Dynasty. Its population is about 3,811, accounting for 0.09% of the Baise's total population. They mainly settled in counties such as Longlin and Xilin. Gelao people have their own languages but no characters, belonging to Tibet-Myanmar branch of Sino-Tibetan family. They use Chinese characters.

122. **Social and cultural practices of EM people.** According to the key informant discussion, the EM people in Baise share similar social and cultural practices as well as clothes style with Han people without distinct difference. People of different ethnic groups marry without considering the ethnic source, except men of Miao group who only marry women of Miao. Signboards of government agencies in Baise and even in the whole province are required to have both Han and Zhuang language. Zhuang people in Baise can speak the Zhuang language,

but most of them cannot read and write the Zhuang language (a kind of writing language created for Zhuang people in 1950's) since it is promoted only in few primary schools.

| Area  | Han     | Zhuang    | Yao     | Miao    | Tong  | Melao | Buyi  | Hui   | Yi    | Gelao | Man   | Other | Total     |
|---|---------|-----------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-----------|
| Youjiang District                             | 77,463  | 259,953   | 12,521  | 451     | 195   | 148   | 186   | 318   | 129   | 52    | 139   | 300   | 351,855   |
| Tianyang County                               | 33,076  | 314,895   | 1,494   | 133     | 53    | 43    | 56    | 7     | 31    | 12    | 34    | 81    | 349,915   |
| Tiandong County                               | 42,215  | 364,814   | 19,572  | 151     | 127   | 135   | 73    | 23    | 39    | 4     | 33    | 145   | 427,331   |
| Pingguo County                                | 26,208  | 455,334   | 22,871  | 200     | 231   | 55    | 91    | 23    | 39    | 20    | 75    | 291   | 505,438   |
| Debao County                                  | 3,542   | 354,627   | 6,507   | 76      | 51    | 6     | 43    | 13    | 25    | 6     | 12    | 202   | 365,110   |
| Jingxi County                                 | 4,988   | 639,792   | 252     | 401     | 66    | 7     | 79    | 144   | 34    | 6     | 37    | 199   | 646,005   |
| Napo County                                   | 12,880  | 189,920   | 5,746   | 1,945   | 24    | 31    | 23    | 2     | 1,727 | 5     | 3     | 65    | 212,371   |
| Lingyun County                                | 97,381  | 67,066    | 45,915  | 38      | 20    | 3     | 43    | 1     | 32    | 2     |       | 41    | 210,542   |
| Leye County                                   | 82,092  | 86,521    | 3,863   | 223     | 100   | 29    | 793   | 9     | 8     | 4     | 3     | 53    | 173,698   |
| Tianlin County                                | 67,757  | 155,010   | 31,609  | 1,379   | 26    | 15    | 709   | 22    | 280   | 49    | 4     | 73    | 256,933   |
| Xilin County                                  | 13,058  | 101,657   | 6,347   | 31,171  | 20    | 12    | 933   | 23    | 942   | 204   | 2     | 187   | 154,556   |
| Longlin County                                | 82,686  | 220,942   | 153     | 115,849 | 39    | 27    | 693   | 10    | 4,746 | 3,447 | 7     | 153   | 428,752   |
| Total   | 543,346 | 3,210,531 | 156,850 | 152,017 | 952   | 511   | 3,722 | 595   | 8,032 | 3,811 | 349   | 1,790 | 4,082,506 |
| Proportion among the total                    | 13.31%  | 78.64%    | 3.84%   | 3.72%   | 0.02% | 0.01% | 0.09% | 0.01% | 0.20% | 0.09% | 0.01% | 0.04% |           |
| Proportion among<br>ethnic minority<br>groups |         | 90.71%    | 4.43%   | 4.30%   | 0.03% | 0.01% | 0.11% | 0.02% | 0.23% | 0.11% | 0.01% | 0.05% |           |

# Table 39: Distribution of Ethnic Groups in Baise (by 2013.9.27)

Source: Data provided by the Baise Ethnic Affairs Commission.

#### 2. Preferential Treatment for EM students

123. **Extra points.** BU is implementing the regional policy for minority students to enjoy extra points in college and university enrollment as follows:

- (i) The EM students in the urban areas of Nanning, Liuzhou, Guilin, Wuzhou, and Beihai cities can enjoy 5 extra points;
- In the whole Region (except in Nanning, Liuzhou, Guilin, Wuzhou, and Beihai cities), students of ten EM groups including Yao, Miao, Dong, Maonan, Melao, Hui, Yi, Jing, Shui, and Gelao, can enjoy 20 extra points;
- (iii) Students from twelve EM autonomous counties including Longlin county in Baise, three counties including Lingyun and Xilin counties in Baise that enjoy the same treatment as the EM autonomous counties, Fangcheng District and Dongxing City of Fangchenggang City (including Han students), can enjoy 20 extra points;
- (iv) Students from 33 mountainous and boundary counties/cities/districts, including Youjiang District, Tianyang, Tiandong, Pingguo, Debao, Jingxi, Napo, Leye, and Tianlin counties of Baise, can enjoy 10 extra points;
- (v) Other EM students inside GZAR other than the above mentioned 50 counties/cities/districts and Nanning, Liuzhou, Guilin, Wuzhou, and Beihai cities (except those indigenous groups mentioned in item (ii)) can enjoy 7 extra points;
- (vi) Students from eight boundary counties/cities/districts, including Jingxi and Napo counties in Baise, and five counties/districts enjoying the same treatment, including Debao County in Baise, can enjoy another 10 extra points in addition to those covered under item (i) to (v); but the total extra points cannot exceed 20 points; and
- (vii) EM students living scattered in areas dominated by Han people will enjoy priority enrollment if having same scores as Han students.

124. In addition, some universities for nationalities students will specially enroll a certain number of minority students. For example, Minzu University of China (University for Nationalities of China) allocates about 60 enrollment quota to GZAR specifically for minority students every year.

125. **Subsidy.** As stated previously, subsidies are provided for poor students of senior high schools, universities and TVET schools. Normally, Han families are better off than minority families. So students enjoying such subsidies are mostly from minority families. In Baise High School, there are two minority classes (100 students) for each grade since 2005. These students need to get A+ in the entrance examination and must be from poor families. Tuitions are exempted and living subsidies are also provided for these students. No such special classes are running in TVET schools.

126. **Pre-UGs**. The pre-UG mechanism is a highlight of what GZAR is done to promote EM student education. It is established specifically to enroll only EM students. Guangxi University for Nationalities used to be the only place inside GZAR for cultivation of pre-UGs. BU started to work as another base since 2013. Pre-UGs enrolled by seven universities inside GZAR including BU are sent to BU for one extra year education of basic senior high school courses, after which they will go back to their own universities for a 4-year university education.

127. There are two types of pre-UGs: (i) EM pre-UGs, who need to be EM graduates of the current year with rural *hukou*. They enjoy free tuition. Those from EM groups other than Zhuang enjoy priority enrollment; (ii) ordinary pre-UGs, for whom all EM students are eligible. Their scores are normally much higher than that of EM pre-UGs. The number of EM pre-UGs has remained to be 1,000 for the whole Region for many years. In contrast, the number of ordinary pre-UGs keeps increasing by 20% each year. The enrollment number of 2013 is increased by 500 (including 170 of BU's own pre-UGs), all of whom are allocated to BU for cultivation. Among these 500 students, 412 students finally come to the school.

128. BU had 34 own pre-UGs in 2011, all being EM ones; and 70 pre-UGs in 2012, 34 being EM ones and 36 being ordinary ones; and 170 pre-UGs in 2013, 34 being EM ones and 136 being ordinary ones. The target for 2014 is 206, still including 34 EM ones.

# 3. EM Profile of the BU

129. **Student enrollment.** As shown in **Table 40**, the EM student proportion varies greatly for UGs and VC students, being 33%~37% and 56%~62%, respectively. It is much lower for UGs mainly because more UGs are from outside of Baise and even GZAR as shown in **Table 11** before. BU does not implement any special activities to enroll more EM students as the enrollment is basically done according to the ranking of student scores.

|                | 2013  |       |         |       | 2012  |         | 2011  |       |         |
|----------------|-------|-------|---------|-------|-------|---------|-------|-------|---------|
|                | Total | EM    | % of EM | Total | EM    | % of EM | Total | EM    | % of EM |
| Undergraduates | 2,792 | 928   | 33%     | 2,348 | 864   | 37%     | 1,851 | 657   | 35%     |
| VC students    | 999   | 616   | 62%     | 758   | 422   | 56%     | 897   | 511   | 57%     |
| Total          | 3,791 | 1,544 | 40.7%   | 3,106 | 1,286 | 41%     | 2,748 | 1,168 | 43%     |

| Table 40: Enrollment of Ethnic Minorit | y Students in BU |
|--|------------------|
|--|------------------|

Source: Data provided by BU.

130. The major disaggregated ethnic baseline of enrollment of UGs and VC students are further shown in **Table 41** and **Table 42**.
| Major                            | 2013 |        |          |      |     | 20     | 012      |      | 2011 |        |          |      |  |
|----------------------------------|------|--------|----------|------|-----|--------|----------|------|------|--------|----------|------|--|
|                                  | Han  | Zhuang | Other EM | EM % | Han | Zhuang | Other EM | EM % | Han  | Zhuang | Other EM | EM % |  |
| Material Chemistry               | 44   | 22     | 5        | 38%  | 34  | 27     | 3        | 47%  | 23   | 15     | 1        | 41%  |  |
| Chemistry                        | 35   | 14     | 1        | 30%  | 29  | 13     | 1        | 33%  | 25   | 9      | 3        | 32%  |  |
| Chemical Engineering & Tech.     | 88   | 37     | 5        | 32%  | 74  | 50     | 5        | 43%  | 34   | 15     | 0        | 31%  |  |
| Biotechnology                    | 87   | 40     | 5        | 34%  | 67  | 39     | 7        | 41%  | 33   | 15     | 2        | 34%  |  |
| Food Science and Engineering     | 31   | 17     | 1        | 37%  | 27  | 16     | 2        | 40%  |      |        |          |      |  |
| Elementary School Education      | 53   | 34     | 3        | 41%  | 31  | 15     | 0        | 33%  | 30   | 20     | 2        | 42%  |  |
| Pre-School Education             | 30   | 16     | 2        | 38%  | 17  | 24     | 1        | 60%  | 18   | 21     | 7        | 61%  |  |
| Financial Management             | 56   | 34     | 4        | 40%  | 86  | 56     | 7        | 42%  | 57   | 30     | 2        | 36%  |  |
| Project Management               | 57   | 32     | 4        | 39%  | 76  | 37     | 4        | 35%  | 103  | 50     | 4        | 34%  |  |
| International Business and Trade | 30   | 15     | 3        | 38%  | 55  | 49     | 2        | 48%  | 42   | 21     | 3        | 36%  |  |
| Tourism Management               | 31   | 16     | 3        | 38%  | 59  | 26     | 3        | 33%  | 70   | 25     | 5        | 30%  |  |
| Marketing                        | 36   | 17     | 0        | 32%  | 41  | 10     | 4        | 25%  | 43   | 15     | 1        | 27%  |  |
| Computer Science & Technology    | 99   | 43     | 2        | 31%  | 89  | 38     | 7        | 34%  | 92   | 35     | 8        | 32%  |  |
| Math and Applied Math            | 63   | 33     | 4        | 37%  | 68  | 32     | 6        | 36%  | 30   | 17     | 2        | 39%  |  |
| Communication Engineering        | 33   | 15     | 2        | 34%  | 32  | 15     | 1        | 33%  | 36   | 12     | 4        | 31%  |  |
| Social Physical Education        | 22   | 13     | 4        | 44%  | 17  | 4      | 0        | 19%  | 22   | 12     | 1        | 37%  |  |
| Physical Education               | 59   | 57     | 5        | 51%  | 57  | 42     | 2        | 44%  | 37   | 38     | 1        | 51%  |  |
| Thai                             | 38   | 5      | 3        | 17%  | 24  | 12     | 2        | 37%  | 21   | 17     | 2        | 48%  |  |
| English                          | 102  | 14     | 5        | 16%  | 109 | 45     | 3        | 31%  | 107  | 25     | 4        | 21%  |  |
| Material Molding & Control       | 28   | 21     | 1        | 44%  | 26  | 13     | 5        | 41%  |      |        |          |      |  |
| Electrical Engineering & Auto.   | 33   | 16     | 1        | 34%  | 28  | 21     | 4        | 47%  | 39   | 19     | 1        | 34%  |  |
| Electronic Info. Engineering     | 60   | 28     | 2        | 33%  | 69  | 29     | 3        | 32%  | 38   | 14     | 1        | 28%  |  |
| Metal Material Engineering       | 35   | 15     | 0        | 30%  | 30  | 20     | 0        | 40%  | 33   | 21     | 0        | 39%  |  |
| Physics                          | 45   | 15     | 6        | 32%  | 25  | 11     | 4        | 38%  | 23   | 9      | 0        | 28%  |  |

# Table 41: Major Disaggregated Ethnic Baseline of UGs Enrollment

| Major                             |      | 2      | 013      |      |      | 20     | 012      |      | 2011 |        |          |      |  |
|-----------------------------------|------|--------|----------|------|------|--------|----------|------|------|--------|----------|------|--|
| inajoi                            | Han  | Zhuang | Other EM | EM % | Han  | Zhuang | Other EM | EM % | Han  | Zhuang | Other EM | EM % |  |
| Art Design/Environmental Design   | 37   | 6      | 4        | 21%  | 90   | 12     | 15       | 23%  | 64   | 18     | 11       | 31%  |  |
| Musical Performance               | 41   | 15     | 13       | 41%  | 52   | 6      | 5        | 17%  | 32   | 9      | 13       | 41%  |  |
| Humanity Education                | 69   | 29     | 3        | 32%  | 38   | 18     | 3        | 36%  |      |        |          |      |  |
| Ideological & Political Education | 130  | 34     | 5        | 23%  | 29   | 11     | 2        | 31%  | 22   | 17     | 5        | 50%  |  |
| Cross-Border Chinese Language     | 58   | 21     | 1        | 28%  | 21   | 15     | 2        | 45%  | 24   | 13     | 1        | 37%  |  |
| Chinese Language and Literature   | 145  | 54     | 4        | 29%  | 84   | 48     | 7        | 40%  | 96   | 53     | 8        | 39%  |  |
| Project Costing                   | 58   | 37     | 3        | 41%  |      |        |          |      |      |        |          |      |  |
| Internet of Things Engineering    | 58   | 31     | 5        | 38%  |      |        |          |      |      |        |          |      |  |
| Visual Communication Design       | 39   | 8      | 2        | 20%  |      |        |          |      |      |        |          |      |  |
| Product Design                    | 34   | 10     | 3        | 28%  |      |        |          |      |      |        |          |      |  |
| Total                             | 1864 | 814    | 114      | 33%  | 1484 | 754    | 110      | 37%  | 1194 | 565    | 92       | 35%  |  |
| % of the total                    | 67%  | 29%    | 4%       |      | 63%  | 32%    | 5%       |      | 65%  | 31%    | 5%       |      |  |

Source: Data provided by BU.

| Moior   | 2013 |        |          |      | 2012 |        |          |      | 2011 |        |          |      |
|---|------|--------|----------|------|------|--------|----------|------|------|--------|----------|------|
|   | Han  | Zhuang | Other EM | EM % | Han  | Zhuang | Other EM | EM % | Han  | Zhuang | Other EM | EM % |
| Chinese Language                                | 52   | 52     | 7        | 53%  | 68   | 35     | 8        | 39%  | 25   | 12     | 5        | 40%  |
| News Editing and Production                     |      |        |          |      | 7    | 12     | 0        | 63%  | 16   | 12     | 2        | 47%  |
| Foreign-related Secretary                       |      |        |          |      | 9    | 1      | 8        | 50%  |      |        |          |      |
| General Liberal Arts Education                  | 53   | 46     | 7        | 50%  | 39   | 27     | 5        | 45%  | 55   | 27     | 4        | 36%  |
| Legal Secretary                                 |      |        |          |      | 7    | 11     | 0        | 61%  | 22   | 23     | 1        | 52%  |
| Housekeeping Service Management                 |      |        |          |      | 9    | 7      | 4        | 55%  | 18   | 10     | 0        | 36%  |
| Construction Engineering Management             | 19   | 30     | 2        | 63%  | 27   | 36     | 3        | 59%  | 22   | 33     | 3        | 62%  |
| Project Costing                                 | 28   | 21     | 5        | 48%  |      |        |          |      |      |        |          |      |
| English Education                               | 16   | 17     | 1        | 53%  | 21   | 12     | 1        | 38%  | 35   | 34     | 3        | 51%  |
| Computer Application Technology                 |      |        |          |      |      |        |          |      | 7    | 11     | 8        | 73%  |
| Mold Design and Production                      |      |        |          |      | 5    | 7      | 6        | 72%  | 4    | 12     | 3        | 79%  |
| Material Engineering                            |      |        |          |      |      |        |          |      | 8    | 25     | 0        | 76%  |
| Electronic Information Engineering              | 14   | 15     | 1        | 53%  | 14   | 6      | 2        | 36%  | 14   | 9      | 2        | 44%  |
| Mechatronics Technology                         | 11   | 15     | 0        | 58%  | 8    | 7      | 4        | 58%  | 9    | 5      | 4        | 50%  |
| Industrial Analysis and Examination             |      |        |          |      |      |        |          |      | 9    | 8      | 1        | 50%  |
| Food Nutrition and Testing                      |      |        |          |      |      |        |          |      | 12   | 14     | 3        | 59%  |
| Pre-School Education                            | 85   | 138    | 14       | 64%  | 90   | 132    | 15       | 62%  | 53   | 79     | 57       | 72%  |
| Elementary School Education                     | 18   | 75     | 7        | 82%  |      |        |          |      |      |        |          |      |
| Financial Insurance                             | 10   | 21     | 2        | 70%  |      |        |          |      | 24   | 17     | 1        | 43%  |
| International Business                          | 6    | 18     | 1        | 76%  |      |        |          |      |      |        |          |      |
| International Business (Customs<br>Declaration) |      |        |          |      |      |        |          |      | 17   | 16     | 2        | 51%  |
| Computerized Accounting                         | 33   | 62     | 3        | 66%  | 32   | 64     | 9        | 70%  | 36   | 57     | 8        | 64%  |
| Estate Management                               | 14   | 17     | 1        | 56%  |      |        |          |      |      |        |          |      |
| Tourism Management                              | 7    | 12     | 1        | 65%  |      |        |          |      |      |        |          |      |
| Hotel Management                                | 17   | 22     | 3        | 60%  |      |        |          |      |      |        |          |      |
| Total   | 383  | 561    | 55       | 62%  | 336  | 357    | 65       | 56%  | 386  | 404    | 107      | 57%  |

## Table 42: Major Disaggregated Ethnic Baseline of VC Student Enrollment

Source: Data provided by BU.

131. **Student graduation and employment.** The EM disaggregated baseline of graduates/employment from each level of BU is shown in **Table 43**. It can be seen that the employment rate of EM students are quite close to that of average level, indicating that there are no specific barriers to employment for EM students. This also coincides with what is learned from the discussions with the BU students, teachers and leaders.

|                |       | 2013     |                    |       | 2012     |                    | 2011  |          |                    |  |
|----------------|-------|----------|--------------------|-------|----------|--------------------|-------|----------|--------------------|--|
|                | Total | Employed | Employment<br>Rate | Total | Employed | Employment<br>Rate | Total | Employed | Employment<br>Rate |  |
| Undergraduates | 1,564 | 1,468    | 93.9%              | 1,555 | 1,443    | 92.8%              | 1,391 | 1,288    | 92.6%              |  |
| EM             | 586   | 555      | 94.7%              | 545   | 505      | 92.7%              | 609   | 565      | 92.8%              |  |
| % of EM        | 37.5% | 37.8%    |                    | 35.0% | 35.0%    |                    | 43.8% | 43.9%    |                    |  |
| VC students    | 819   | 762      | 93.0%              | 829   | 782      | 94.3%              | 902   | 843      | 93.5%              |  |
| EM             | 416   | 383      | 92.1%              | 370   | 342      | 92.4%              | 388   | 362      | 93.3%              |  |
| % of EM        | 50.8% | 50.3%    |                    | 44.6% | 43.7%    |                    | 43.0% | 42.9%    |                    |  |

#### Table 43: Graduates of Ethnic Minority Students in BU

Source: Data provided by BU.

132. The major disaggregated ethnic baseline of enrollment of UGs and VC students are further shown in **Table 44** and **Table 45**.

|                                   |         |         |          |         | 2013    |          |         |          |          |
|-----------------------------------|---------|---------|----------|---------|---------|----------|---------|----------|----------|
| Major                             |         | Han     |          |         | Zhuang  |          |         | Other EM |          |
|                                   | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No.  | EPM Rate |
| Cross-Border Chinese Language     | 36      | 33      | 91.7%    | 15      | 14      | 93.3%    | 3       | 3        | 100.0%   |
| Chinese Language and Literature   | 63      | 59      | 93.7%    | 35      | 34      | 97.1%    | 7       | 7        | 100.0%   |
| Ideological & Political Education | 33      | 31      | 93.9%    | 14      | 14      | 100.0%   | 1       | 1        | 100.0%   |
| Project Management                | 77      | 72      | 93.5%    | 52      | 48      | 92.3%    | 5       | 5        | 100.0%   |
| Marketing                         | 37      | 34      | 91.9%    | 24      | 23      | 95.8%    | 3       | 3        | 100.0%   |
| International Business and Trade  | 43      | 40      | 93.0%    | 19      | 18      | 94.7%    | 2       | 2        | 100.0%   |
| Tourism Management                | 47      | 43      | 91.5%    | 19      | 17      | 89.5%    | 3       | 3        | 100.0%   |
| Financial Management              | 54      | 48      | 88.9%    | 38      | 37      | 97.4%    | 6       | 6        | 100.0%   |
| English                           | 74      | 70      | 94.6%    | 25      | 24      | 96.0%    | 6       | 6        | 100.0%   |
| Computer Science & Technology     | 54      | 51      | 94.4%    | 36      | 32      | 88.9%    |         |          |          |
| Math and Applied Math             | 45      | 41      | 91.1%    | 25      | 25      | 100.0%   | 5       | 5        | 100.0%   |
| Metal Material Engineering        | 39      | 38      | 97.4%    | 41      | 38      | 92.7%    | 3       | 3        | 100.0%   |
| Electronic Info. Engineering      | 52      | 49      | 94.2%    | 23      | 22      | 95.7%    | 3       | 3        | 100.0%   |
| Physics                           | 20      | 18      | 90.0%    | 11      | 10      | 90.9%    | 1       | 1        | 100.0%   |
| Chemical Engineering & Tech.      | 53      | 51      | 96.2%    | 28      | 27      | 96.4%    | 4       | 4        | 100.0%   |
| Chemistry                         | 25      | 24      | 96.0%    | 14      | 14      | 100.0%   | 1       | 1        | 100.0%   |
| Biotechnology                     | 22      | 20      | 90.9%    | 13      | 12      | 92.3%    | 1       | 1        | 100.0%   |
| Musical Performance               | 41      | 39      | 95.1%    | 8       | 8       | 100.0%   | 10      | 10       | 100.0%   |
| Art Design                        | 92      | 86      | 93.5%    | 10      | 9       | 90.0%    | 15      | 15       | 100.0%   |
| Physical Education                | 39      | 35      | 89.7%    | 27      | 25      | 92.6%    | 3       | 3        | 100.0%   |
| Social Physical Education         | 14      | 14      | 100.0%   | 10      | 8       | 80.0%    | 1       | 1        | 100.0%   |
| Pre-School Education              | 17      | 15      | 88.2%    | 11      | 11      | 100.0%   | 1       | 1        | 100.0%   |
| Total                             | 977     | 911     | 93.2%    | 498     | 470     | 94.4%    | 84      | 84       | 100.0%   |

## Table 44: Major Disaggregated Ethnic Baseline of UGs Employment

|                                   | 2012    |         |          |         |         |          |         |          |          |  |  |  |
|-----------------------------------|---------|---------|----------|---------|---------|----------|---------|----------|----------|--|--|--|
| Major                             |         | Han     |          |         | Zhuang  |          |         | Other EM |          |  |  |  |
|                                   | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No.  | EPM Rate |  |  |  |
| Cross-Border Chinese Language     | 44      | 41      | 93.2%    | 17      | 17      | 100.0%   | 1       | 1        | 100.0%   |  |  |  |
| Chinese Language and Literature   | 76      | 69      | 90.8%    | 61      | 55      | 90.2%    | 5       | 5        | 100.0%   |  |  |  |
| Ideological & Political Education | 28      | 26      | 92.9%    | 10      | 9       | 90.0%    | 1       | 1        | 100.0%   |  |  |  |
| Tourism Management                | 61      | 55      | 90.2%    | 40      | 39      | 97.5%    | 9       | 9        | 100.0%   |  |  |  |
| Project Management                | 57      | 50      | 87.7%    | 33      | 31      | 93.9%    | 1       | 1        | 100.0%   |  |  |  |
| Marketing                         | 66      | 61      | 92.4%    | 12      | 11      | 91.7%    |         |          |          |  |  |  |
| English                           | 107     | 97      | 90.7%    | 37      | 33      | 89.2%    | 5       | 5        | 100.0%   |  |  |  |
| Math and Applied Math             | 43      | 41      | 95.3%    | 23      | 21      | 91.3%    | 5       | 5        | 100.0%   |  |  |  |
| Computer Science & Technology     | 43      | 38      | 88.4%    | 21      | 21      | 100.0%   | 3       | 3        | 100.0%   |  |  |  |
| Physics                           | 22      | 21      | 95.5%    | 9       | 8       | 88.9%    |         |          |          |  |  |  |
| Electronic Info. Engineering      | 62      | 58      | 93.5%    | 19      | 19      | 100.0%   | 4       | 4        | 100.0%   |  |  |  |
| Metal Material Engineering        | 41      | 40      | 97.6%    | 54      | 46      | 85.2%    | 2       | 2        | 100.0%   |  |  |  |
| Chemical Engineering & Tech.      | 44      | 35      | 79.5%    | 32      | 30      | 93.8%    | 4       | 4        | 100.0%   |  |  |  |
| Biotechnology                     | 48      | 47      | 97.9%    | 20      | 19      | 95.0%    | 4       | 3        | 75.0%    |  |  |  |
| Musical Performance               | 53      | 48      | 90.6%    | 15      | 15      | 100.0%   | 5       | 5        | 100.0%   |  |  |  |
| Art Design                        | 121     | 115     | 95.0%    | 19      | 18      | 94.7%    | 10      | 10       | 100.0%   |  |  |  |
| Physical Education                | 46      | 43      | 93.5%    | 24      | 22      | 91.7%    | 5       | 5        | 100.0%   |  |  |  |
| Total                             | 962     | 885     | 92.0%    | 446     | 414     | 92.8%    | 64      | 63       | 98.4%    |  |  |  |

|                                   | 2011    |         |          |         |         |          |         |          |          |  |  |
|-----------------------------------|---------|---------|----------|---------|---------|----------|---------|----------|----------|--|--|
| Major                             |         | Han     |          |         | Zhuang  |          |         | Other EM |          |  |  |
|                                   | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No.  | EPM Rate |  |  |
| Cross-Border Chinese Language     | 52      | 50      | 96.2%    | 25      | 24      | 96.0%    | 4       | 4        | 100.0%   |  |  |
| Chinese Language and Literature   | 93      | 89      | 95.7%    | 74      | 73      | 98.6%    | 10      | 10       | 100.0%   |  |  |
| Ideological & Political Education | 34      | 33      | 97.1%    | 24      | 23      | 95.8%    | 1       | 1        | 100.0%   |  |  |
| Tourism Management                | 66      | 62      | 93.9%    | 34      | 33      | 97.1%    | 7       | 5        | 71.4%    |  |  |
| English                           | 105     | 94      | 89.5%    | 85      | 80      | 94.1%    | 6       | 6        | 100.0%   |  |  |
| Computer Science & Technology     | 79      | 71      | 89.9%    | 45      | 40      | 88.9%    | 2       | 2        | 100.0%   |  |  |
| Math and Applied Math             | 82      | 78      | 95.1%    | 50      | 46      | 92.0%    | 7       | 7        | 100.0%   |  |  |
| Electronic Info. Engineering      | 101     | 92      | 91.1%    | 64      | 60      | 93.8%    | 5       | 5        | 100.0%   |  |  |
| Physics                           | 29      | 26      | 89.7%    | 22      | 19      | 86.4%    | 3       | 3        | 100.0%   |  |  |
| Chemical Engineering & Tech.      | 40      | 40      | 100.0%   | 63      | 61      | 96.8%    | 1       | 1        | 100.0%   |  |  |
| Biotechnology                     | 38      | 38      | 100.0%   | 17      | 16      | 94.1%    | 2       | 2        | 100.0%   |  |  |
| Musical Performance               | 22      | 22      | 100.0%   | 26      | 26      | 100.0%   | 5       | 5        | 100.0%   |  |  |
| Physical Education                | 42      | 38      | 90.5%    | 22      | 20      | 90.9%    | 6       | 6        | 100.0%   |  |  |
| Total                             | 783     | 733     | 93.6%    | 551     | 521     | 94.6%    | 59      | 57       | 96.6%    |  |  |

|  |         |         |          |         | 2013    |          |         |          |          |
|--|---------|---------|----------|---------|---------|----------|---------|----------|----------|
| Major                                  |         | Han     |          |         | Zhuang  |          |         | Other EM |          |
|  | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No.  | EPM Rate |
| Chinese Language                       | 28      | 26      | 92.9%    | 20      | 18      | 90.0%    | 2       | 2        | 100.0%   |
| Foreign-related Secretary              | 11      | 11      | 100.0%   | 5       | 4       | 80.0%    | 4       | 4        | 100.0%   |
| News Editing and Production            | 14      | 12      | 85.7%    | 16      | 16      | 100.0%   | 3       | 3        | 100.0%   |
| Legal Secretary                        | 13      | 13      | 100.0%   | 11      | 9       | 81.8%    | 3       | 3        | 100.0%   |
| Housekeeping Service<br>Management     | 7       | 7       | 100.0%   | 7       | 6       | 85.7%    |         |          |          |
| General Liberal Arts                   | 81      | 76      | 93.8%    | 45      | 41      | 91.1%    | 9       | 8        | 88.9%    |
| Applied Vietnamese                     | 5       | 5       | 100.0%   | 7       | 7       | 100.0%   | 2       | 2        | 100.0%   |
| Applied English                        | 27      | 25      | 92.6%    | 23      | 21      | 91.3%    | 1       | 0        | 0.0%     |
| Computerized Accounting                | 39      | 36      | 92.3%    | 55      | 52      | 94.5%    | 7       | 7        | 100.0%   |
| Material Engineering                   | 13      | 13      | 100.0%   | 26      | 24      | 92.3%    |         |          |          |
| Electronic Information<br>Engineering  | 15      | 14      | 93.3%    | 11      | 10      | 90.9%    |         |          |          |
| Mechatronics Technology                | 19      | 18      | 94.7%    | 19      | 19      | 100.0%   | 1       | 1        | 100.0%   |
| Communication Technology               | 8       | 7       | 87.5%    | 11      | 10      | 90.9%    | 1       | 1        | 100.0%   |
| Industrial Analysis and<br>Examination | 7       | 7       | 100.0%   | 11      | 10      | 90.9%    | 1       | 1        | 100.0%   |
| Food Nutrition and Testing             | 12      | 10      | 83.3%    | 7       | 7       | 100.0%   | 2       | 2        | 100.0%   |
| Applied Chemical Technology            | 13      | 13      | 100.0%   | 13      | 13      | 100.0%   |         |          |          |
| Pre-School Education                   | 37      | 29      | 78.4%    | 42      | 40      | 95.2%    | 6       | 5        | 83.3%    |
| Total                                  | 349     | 322     | 92.3%    | 329     | 307     | 93.3%    | 42      | 39       | 92.9%    |

# Table 45: Major Disaggregated Ethnic Baseline of VC students Employment

|   |         |         |          |         | 2012    |          |         |          |          |
|---|---------|---------|----------|---------|---------|----------|---------|----------|----------|
| Major   |         | Han     |          |         | Zhuang  |          |         | Other EM |          |
|   | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No.  | EPM Rate |
| Chinese Language                                | 39      | 38      | 97.4%    | 16      | 14      | 87.5%    | 4       | 3        | 75.0%    |
| News Editing and Production                     | 22      | 22      | 100.0%   | 7       | 7       | 100.0%   | 2       | 2        | 100.0%   |
| Legal Secretary                                 | 20      | 18      | 90.0%    | 19      | 18      | 94.7%    | 3       | 3        | 100.0%   |
| General Liberal Arts                            | 61      | 58      | 95.1%    | 23      | 23      | 100.0%   | 3       | 3        | 100.0%   |
| Procurement and Supply<br>Management            | 10      | 10      | 100.0%   | 11      | 10      | 90.9%    | 1       | 1        | 100.0%   |
| Hotel Management                                | 15      | 15      | 100.0%   | 8       | 6       | 75.0%    | 1       | 1        | 100.0%   |
| Tourism Management                              | 15      | 14      | 93.3%    | 4       | 4       | 100.0%   | 1       | 1        | 100.0%   |
| International Business<br>(Customs Declaration) | 26      | 25      | 96.2%    | 14      | 13      | 92.9%    | 2       | 1        | 50.0%    |
| Estate Management                               | 16      | 16      | 100.0%   | 13      | 11      | 84.6%    | 1       | 1        | 100.0%   |
| Applied English                                 | 19      | 18      | 94.7%    | 7       | 6       | 85.7%    | 1       | 1        | 100.0%   |
| Applied Vietnamese                              | 10      | 10      | 100.0%   | 11      | 10      | 90.9%    | 1       | 1        | 100.0%   |
| Computerized Accounting                         | 39      | 38      | 97.4%    | 51      | 48      | 94.1%    | 5       | 5        | 100.0%   |
| Electronic Information<br>Engineering           | 10      | 10      | 100.0%   | 10      | 9       | 90.0%    | 2       | 2        | 100.0%   |
| Mechatronics Technology                         | 19      | 18      | 94.7%    | 12      | 11      | 91.7%    | 4       | 4        | 100.0%   |
| Communication Technology                        | 16      | 15      | 93.8%    |         |         |          | 1       | 1        | 100.0%   |
| Industrial Analysis and<br>Examination          | 20      | 19      | 95.0%    | 19      | 18      | 94.7%    | 1       | 1        | 100.0%   |
| Food Nutrition and Testing                      | 18      | 15      | 83.3%    | 20      | 20      | 100.0%   | 2       | 2        | 100.0%   |
| 'Pre-School Education                           | 18      | 18      | 100.0%   | 15      | 13      | 86.7%    |         |          |          |
| Total   | 393     | 377     | 95.9%    | 260     | 241     | 92.7%    | 35      | 33       | 94.3%    |

|   | 2011    |         |          |         |         |          |         |          |          |  |  |  |  |
|---|---------|---------|----------|---------|---------|----------|---------|----------|----------|--|--|--|--|
| Major   |         | Han     |          |         | Zhuang  |          |         | Other EM |          |  |  |  |  |
|   | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No. | EPM Rate | GDT No. | EPM No.  | EPM Rate |  |  |  |  |
| Chinese Language                                | 46      | 40      | 87.0%    | 32      | 30      | 93.8%    | 3       | 2        | 66.7%    |  |  |  |  |
| Foreign-related Secretary                       | 27      | 25      | 92.6%    | 13      | 13      | 100.0%   | 6       | 5        | 83.3%    |  |  |  |  |
| Legal Secretary                                 | 27      | 26      | 96.3%    | 17      | 16      | 94.1%    | 4       | 4        | 100.0%   |  |  |  |  |
| General Liberal Arts                            | 41      | 39      | 95.1%    | 18      | 17      | 94.4%    | 5       | 5        | 100.0%   |  |  |  |  |
| Procurement and Supply<br>Management            | 28      | 26      | 92.9%    | 19      | 18      | 94.7%    | 1       | 1        | 100.0%   |  |  |  |  |
| Financial Insurance                             | 34      | 33      | 97.1%    | 24      | 21      | 87.5%    | 5       | 5        | 100.0%   |  |  |  |  |
| Investment Promotion Managemer                  | 30      | 29      | 96.7%    | 20      | 18      | 90.0%    | 1       | 1        | 100.0%   |  |  |  |  |
| International Business (Customs<br>Declaration) | 36      | 35      | 97.2%    | 20      | 18      | 90.0%    | 2       | 2        | 100.0%   |  |  |  |  |
| Estate Management                               | 33      | 32      | 97.0%    | 16      | 16      | 100.0%   | 1       | 1        | 100.0%   |  |  |  |  |
| Applied Vietnamese                              | 25      | 24      | 96.0%    | 14      | 14      | 100.0%   | 5       | 4        | 80.0%    |  |  |  |  |
| Applied English                                 | 24      | 23      | 95.8%    | 15      | 12      | 80.0%    | 3       | 3        | 100.0%   |  |  |  |  |
| Computer Application Technology                 | 16      | 14      | 87.5%    | 18      | 16      | 88.9%    |         |          |          |  |  |  |  |
| Computerized Accounting                         | 63      | 56      | 88.9%    | 29      | 28      | 96.6%    | 4       | 4        | 100.0%   |  |  |  |  |
| Electronic Information<br>Engineering           | 19      | 18      | 94.7%    | 17      | 16      | 94.1%    | 6       | 6        | 100.0%   |  |  |  |  |
| Industrial Analysis and<br>Examination          | 21      | 20      | 95.2%    | 20      | 19      | 95.0%    | 1       | 1        | 100.0%   |  |  |  |  |
| Applied Chemical Technology                     | 21      | 21      | 100.0%   | 17      | 17      | 100.0%   | 3       | 3        | 100.0%   |  |  |  |  |
| Physical Education                              | 13      | 12      | 92.3%    | 9       | 9       | 100.0%   | 2       | 1        | 50.0%    |  |  |  |  |
| 'Pre-School Education                           | 21      | 20      | 95.2%    | 16      | 16      | 100.0%   | 4       | 4        | 100.0%   |  |  |  |  |
| Total   | 525     | 493     | 93.9%    | 334     | 238     | 71.3%    | 56      | 52       | 92.9%    |  |  |  |  |

133. **Teacher ethnic profile.** BU currently has 627 staff members, among which 299 or 52.3% are EM people, including 48.2% of Zhuang and 4.1% of other EM persons as shown in **Table 46**. Specifically, among 399 specialized teachers, 187 persons or 46.9% are EM people; among 180 administrative staff, 115 persons or 63.9% are EM people; among 48 logistic workers, 26 or 54.2% are EM people. Compared with the general EM proportion (87%) of the city, the EM proportion of BU staff (52%~64%) is much lower. These EM teachers enjoy the same salary and welfare with Han teachers without special treatment. They also do not have any special ethnic practices. The major disaggregated EM baseline of specialized teachers of BU is further shown in **Table 47**.

| lten     | ı   | Specialized Teacher | Administrative Staff | Logistic Workers | Total |
|----------|-----|---------------------|----------------------|------------------|-------|
| Total    | No. | 399                 | 180                  | 48               | 627   |
| Hon      | No. | 212                 | 65                   | 22               | 299   |
| Пап      | %   | 53.1%               | 36.1%                | 45.8%            | 47.7% |
| Zhuong   | No. | 169                 | 109                  | 24               | 302   |
| Zhuang   | %   | 42.4%               | 60.6%                | 50.0%            | 48.2% |
| Othor EM | No. | 18                  | 6                    | 2                | 26    |
|          | %   | 4.5%                | 3.3%                 | 4.2%             | 4.1%  |

Table 46: EM Staff Baseline of BU

Source: Data provided by BVS.

134. **EM elements in curriculum design.** No courses are designed specifically to attract EM students. The current courses that involve EM elements include (i) the Ideological and Political Education major and Humanity Education, which include courses on ethnic policies, (ii) the Chinese Language and Literature, which includes a course on intangible cultural heritage, covering EM literature, folklore and histories; and (iii) Music Performance major, which includes EM music and dancing.

| Major  | Han | % of Han | Zhuang | % of<br>Zhuang | Other EM | % of Other<br>EM |
|--|-----|----------|--------|----------------|----------|------------------|
| Chinese Language and Literature                    | 12  | 44.4%    | 12     | 44.4%          | 3        | 11.1%            |
| Cross-Border Chinese Language                      | 3   | 27.3%    | 6      | 54.5%          | 2        | 18.2%            |
| Humanity Education                                 | 10  | 62.5%    | 6      | 37.5%          | 0        | 0.0%             |
| Ideological & Political Education                  | 8   | 66.7%    | 4      | 33.3%          | 0        | 0.0%             |
| International Business and Trade                   | 9   | 90.0%    | 1      | 10.0%          | 0        | 0.0%             |
| Project Management                                 | 6   | 75.0%    | 2      | 25.0%          | 0        | 0.0%             |
| Marketing  | 7   | 77.8%    | 2      | 22.2%          | 0        | 0.0%             |
| Financial Management                               | 10  | 76.9%    | 3      | 23.1%          | 0        | 0.0%             |
| Tourism Management                                 | 8   | 80.0%    | 2      | 20.0%          | 0        | 0.0%             |
| Project costing                                    | 8   | 88.9%    | 0      | 0.0%           | 1        | 11.1%            |
| English  | 14  | 30.4%    | 31     | 67.4%          | 1        | 2.2%             |
| Thai   | 3   | 33.3%    | 5      | 55.6%          | 1        | 11.1%            |
| Math and Applied Math                              | 12  | 57.1%    | 9      | 42.9%          | 0        | 0.0%             |
| Communication Engineering                          | 2   | 66.7%    | 1      | 33.3%          | 0        | 0.0%             |
| Computer Science & Technology                      | 8   | 38.1%    | 13     | 61.9%          | 0        | 0.0%             |
| Internet of Things Engineering                     | 1   | 100.0%   | 0      | 0.0%           | 0        | 0.0%             |
| Material Molding and Control Engineering           | 2   | 100.0%   | 0      | 0.0%           | 0        | 0.0%             |
| Metal Material Engineering                         | 8   | 50.0%    | 6      | 37.5%          | 2        | 12.5%            |
| Electrical Engineering and Automation              | 1   | 20.0%    | 3      | 60.0%          | 1        | 20.0%            |
| Electronic Info. Engineering                       | 3   | 37.5%    | 5      | 62.5%          | 0        | 0.0%             |
| Physics  | 4   | 50.0%    | 3      | 37.5%          | 1        | 12.5%            |
| Chemistry  | 2   | 28.6%    | 5      | 71.4%          | 0        | 0.0%             |
| Biotechnology                                      | 4   | 66.7%    | 2      | 33.3%          | 0        | 0.0%             |
| Material Chemistry                                 | 7   | 100.0%   | 0      | 0.0%           | 0        | 0.0%             |
| Chemical Engineering & Tech.                       | 5   | 62.5%    | 2      | 25.0%          | 1        | 12.5%            |
| Food Science and Engineering                       | 5   | 71.4%    | 2      | 28.6%          | 0        | 0.0%             |
| Facility-based Agriculture Science and Engineering | 4   | 100.0%   | 0      | 0.0%           | 0        | 0.0%             |
| Physical Education                                 | 14  | 73.7%    | 5      | 26.3%          | 0        | 0.0%             |
| Social Physical Education                          | 5   | 50.0%    | 5      | 50.0%          | 0        | 0.0%             |
| Musical Performance                                | 7   | 38.9%    | 9      | 50.0%          | 2        | 11.1%            |
| Art Design   | 4   | 33.3%    | 7      | 58.3%          | 1        | 8.3%             |
| Environmental Design                               | 2   | 50.0%    | 2      | 50.0%          | 0        | 0.0%             |
| Visual Communication Design                        | 1   | 20.0%    | 4      | 80.0%          | 0        | 0.0%             |
| Product Design                                     | 1   | 25.0%    | 2      | 50.0%          | 1        | 25.0%            |
| Fashion and Costumes Design                        | 1   | 100.0%   | 0      | 0.0%           | 0        | 0.0%             |
| Pre-School Education                               | 6   | 46.2%    | 7      | 53.8%          | 0        | 0.0%             |
| Elementary School Education                        | 5   | 55.6%    | 3      | 33.3%          | 1        | 11.1%            |
| Total  | 212 | 53.1%    | 169    | 42.4%          | 18       | 4.5%             |

# Table 47: Major Disaggregated EM Baseline of Specialized Teachers of BU

Source: Data provided by BU.

### 4. EM Profile of the BVS

135. **Enrollment.** The EM baseline of BVS is shown in **Table 48**. The students are of six nationalities of Han, Zhuang, Yao, Miao, Yi, and Buyi. The EM students account for a very high proportion of 89.7% among all students. It is particularly as high as over 90% in 2011 and 2012. Zhuang students account for the highest proportion for all majors, with an average of 70.8%. Yao is the second largest EM group, accounting for 17.3% of the total. There are also a few students of Miao (1.5%), Yao (0.3%) and Buyi (0.3%) students; all of them are from rural areas. It can be seen that the EM proportion for the Pre-school Education major (88.2%~91.2%) is much higher than that for the Computer Application major (60%).

| Nationality |     | Grade 2013 | Grade 2012 | Grade      | Total    |       |
|-------------|-----|------------|------------|------------|----------|-------|
|             |     | Pre-school | Pre-school | Pre-school | Computer | Total |
| Llen        | No. | 8          | 11         | 23         | 2        | 44    |
| Han         | %   | 9.5%       | 11.8%      | 17.2%      | 40.0%    | 13.4% |
| Zhuang      | No. | 66         | 71         | 93         | 3        | 233   |
| Zhuang      | %   | 78.6%      | 76.3%      | 69.4%      | 60.0%    | 70.8% |
| Vaa         | No. | 10         | 11         | 36         | 0        | 57    |
| Y ao        | %   | 11.9%      | 11.8%      | 26.9%      | 0.0%     | 17.3% |
| Miao        | No. | 0          | 0          | 5          | 0        | 5     |
|             | %   | 0.0%       | 0.0%       | 3.7%       | 0.0%     | 1.5%  |
| Yi          | No. | 0          | 0          | 1          | 0        | 1     |
|             | %   | 0.0%       | 0.0%       | 0.7%       | 0.0%     | 0.3%  |
| Buyi        | No. | 0          | 0          | 1          | 0        | 1     |
|             | %   | 0.0%       | 0.0%       | 0.7%       | 0.0%     | 0.3%  |
| Total       | No. | 84         | 93         | 147        | 5        | 329   |
| Total of EM | No. | 76         | 82         | 134        | 3        | 295   |
|             | %   | 90.5%      | 88.2%      | 91.2%      | 60.0%    | 89.7% |

Table 48: EM Students Enrollment in BVS

Source: Data provided by BVS.

136. **Graduation and employment.** As mentioned before, BVS only has the accurate employment data for Grade 2011. Among the 121 graduates, 111 are EM students, accounting for 91.7%, including 103 Zhuang students who account for 85.1% of the total. All students have found a job, thus the employment rate of all students including EM students is 100%. EM students do not enjoy any special treatment or encounter any specific barrier during the job-hunting process according to the informant interview. In addition, the EM students enjoy the same level of salary and job with the Han students.

| Na       | ationality       | Pre-school | Pre-school Computer |        |
|----------|------------------|------------|---------------------|--------|
|          | No. of graduates | 10         |                     | 10     |
| Han      | No. employed     | 10         |                     | 10     |
|          | Employment rate  | 100.0%     |                     | 100.0% |
|          | No. of graduates | 98         | 5                   | 103    |
| Zhuang   | No. employed     | 98         | 5                   | 103    |
|          | Employment rate  | 100.0%     | 100.0%              | 100.0% |
| Other EM | No. of graduates | 8          |                     | 8      |
|          | No. employed     | 8          |                     | 8      |
|          | Employment rate  | 100.0%     |                     | 100.0% |
| Total    | No. of graduates | 116        | 5                   | 121    |
|          | No. employed     | 116        | 5                   | 121    |
|          | Employment rate  | 100.0%     | 100.0%              | 100.0% |

 Table 49: EM Baseline of Graduates and Employment of BVS (Grade 2011)

Source: Data provided by BVS.

137. **Teacher EM baseline.** As shown in Table 50, among the 13 specialized teachers in BVS, 9 are Zhuang people, accounting for 69.2%; among the 5 logistics workers, 4 are Zhuang people, accounting for 80%. Same as in BU, they enjoy the same salary and welfare with Han teachers.

|                      |          |     |            |          | -     |  |
|----------------------|----------|-----|------------|----------|-------|--|
| lte                  | em       |     | Pre-school | Computer | Total |  |
|                      | Subtotal | No. | 10         | 3        | 13    |  |
|                      | Hon      | No. | 3          | 1        | 4     |  |
| Specialized teachers | nan      | %   | 3.6%       | 20.0%    | 30.8% |  |
|                      | 7        | No. | 7          | 2        | 9     |  |
|                      | Zhuang   | %   | 70.0%      | 66.7%    | 69.2% |  |
|                      | Subtotal | No. | 5          |          |       |  |
|                      | Han      | No. | 1          |          |       |  |
| Logistic workers     |          | %   | 20.0%      |          |       |  |
|                      | Zhuang   | No. | 4          |          |       |  |
|                      |          | %   | 80.0%      |          |       |  |
|                      | Subtotal | No. | 18         |          |       |  |
| Total                | Zhuang   | No. | 13         |          |       |  |
|                      |          | %   | 72.2%      |          |       |  |

Table 50: EM Staff Proportion in BVS

Source: Data provided by BVS.

138. **EM elements in curriculum design.** The courses relevant to EM include EM dancing, singing and instruments provided for the Pre-school major.

## 5. EM Profiles of the Four Base Industries

139. The data on the EM baseline of the four base industries is not available.

## 6. Project Impacts on Ethnic Minorities

140. Since in Baise ethnic people have been well integrated with Han people with very few special habits, the project is expected to impose no negative impact on local EM people. Instead, given that most students are EM, the project will greatly benefit local EM students and families.

## 7. Recommendations for the Project

- (i) The proportion of ethnic minority students has been high in BU and BVS, however, most of the students are from Zhuang group. Baise is a city with multiple minority groups. High proportion of ethnic minority students should be kept and measures such as scholarship, major establishment should be taken to attract students from other ethnic minority groups than Zhuang in TVET;
- (ii) Teachers and students from ethnic minority groups should participate in design and practices of multilevel TVET system construction;
- (iii) Combining tourism development of GZAR, local ethnic minority features should be considered in majors reform and curriculum innovation; and
- (iv) The tracer study investigation should include disaggregated data on ethnicity and generate reports on ethnicity analysis to demonstrating EM student graduation, job changes, job satisfaction, and choices of continuation of higher education in all priority majors.

### D. Benefits and Beneficiaries

141. **Direct benefits.** According to the development plans of BU and BVS, by the time the project is completed, i.e. by 2019, the project will directly benefit:

- (i) 12,500 UGs, 3,500 VC students, 500 pre-UGs, 2,500 UG adult learners, 2,000 VC adult learners, 600 foreign students of BU; 1,500 SVE students and 500 SVE adult learners of BVS through:
  - Newly established campus including new or better classrooms, dormitories, laboratories, libraries, cafeterias, playgrounds and stadiums, practicing and training centers, and all teaching equipment and facilities newly purchased under the project for BU students; and reusing the existing Donghe campus for BVS students, which is better spaced and equipped that the existing BVS campus;
  - Improved safety in the campus with upgraded security measures adopted;
  - Upgraded market-oriented curriculum and teaching skills that help the students become better qualified;

- Improved access to the MLT TVET education via upgraded outreach programs and linkages (pathways) established in the pilot majors of preschool education, metal material engineering, project management and project cost estimates;
- Increased employment opportunities and employment guidance via improved tracer studies, industry survey and employment data system, entrepreneurship incubation program, as well as school-industry partnerships, in particular in the priority sectors of (i) Pre-school Education; (ii) Aluminum Processing; (iii) Engineering Management; (iv) Design; and (v) Agriculture-related Biological Technology, Food Engineering, Facility-based Agriculture; and
- Increased incomes for better trained TVET graduates, leading to higher household income, especially among rural, poor and ethnic minority families.
- (ii) In addition, by the time the project is completed, the project will directly benefit 1,300 staff members of BU and 30 staff members of BVS through:
  - Improved teaching and training equipment, facilities and centers;
  - Upgraded market-oriented curriculum;
  - Better teaching skills that support professional development via pedagogy reform, school-industry partnerships, and a combination of various training and capacity building activities;
  - Better motivation via improved incentive structure;
  - Improved leadership via training; and
  - Better reputation as a leading institution of regional cooperation with APEC standards in related majors introduced.
- (iii) 1,300 migrant worker students of BVS through:
  - Outreach training programs for migrants courses for migrant workers and communities designed and implemented.
- (iv) 40 industry partners through:
  - Better tailored talents that can satisfy the specific needs of the enterprises.

142. To summary, the project will directly benefit 26,230 persons and 40 enterprises by the time it is completed.

- 143. Indirect benefits. The project will indirectly benefit:
  - (i) Families of the directly benefited students with better employment and salaries of the students;
  - (ii) Enterprises and institutions with better qualified graduates from BU and BVS;

- (iii) Students and staff of other TVET institutions in Baise Municipality via BU working as the training center of the city;
- (iv) Improved capacity of relevant local institutions in Baise, such as the BEB and Baise HRSSB, by involving in the implementation of the project; and
- (v) Demonstration effects in TVET development for other TVET schools in Baise Municipality and even other areas in and outside GZAR.

144. **Employment Created by the Project.** Employment will be generated during the project construction and in the operation of project facilities. According to the FSR, about 6,881 personmonths with a total gross income of CNY22.72 million during the project construction will be generated, while during the operation phase, 685 full time positions, including 601 specialized teachers and 72 administration and logistic staffs of BU, and 12 teachers of BVS, with CNY27.95 million annual gross income will be generated directly by the Project. In addition, about 10,321 person-months with CNY 28.90 million gross income will be generated indirectly by the Project. The detailed employment generation and income earning are presented in **Table 51** to **Table 52**.

Table 51: Employment Generation during the Project Construction Period(person-month)

| Component                         | Subproject  | Tech-<br>Manager | Skill | Unskilled | skilled Subtotal |        | Total  |
|-----------------------------------|---|------------------|-------|-----------|------------------|--------|--------|
|                                   |   | PM               | PM    | PM        | PM               | PM     | PM     |
| Chengbi<br>Campus<br>Construction | Buildings,<br>field<br>clearance,<br>road,<br>wastewater<br>treatment | 688              | 2,742 | 3,451     | 6,881            | 10,321 | 17,202 |

Source: Estimation by the PPTA consultants.

### Table 52: Income from New Jobs during the Project Construction Period (million CNY)

|                                   |  |                  | Dir    |           |          |          |         |
|-----------------------------------|--|------------------|--------|-----------|----------|----------|---------|
| Component                         | Subproject   | Tech-<br>Manager | Skill  | Unskilled | Subtotal | Indirect | Total   |
| Chengbi<br>Campus<br>Construction | Buildings, field<br>clearance,<br>road,<br>wastewater<br>treatment | 2.4971           | 9.8706 | 10.3525   | 22.7202  | 28.8991  | 51.6193 |

Source: Estimation by the PPTA consultants.

## VII. RECOMMENDED STRATEGIES AND PLANS

145. To maximum the project benefits to poor, women and ethnic minority in TVET, some action plans are developed with quantitative and/or time bound targets and, wherever possible, with baselines identified during the project preparation. Women and students including those from ethnic minority or low income families must be involved in the plans, testing and evaluation of activities and materials that they are meant to participate in.

146. The actions are developed main contents of SAP and GAP that will be implemented and monitored during the project implementation.

### A. Main Actions for Students from Poor Households

147. The following actions for students from poor or low-income households should be taken during the project implementation. The actions are included into SAP.

- (i) Inclusiveness: In the development and design of pathways for students from secondary vocational education to high vocational education to university education, any barriers affected students from poor or low-income households to receive education in higher level must be broken. Inclusiveness of the students should be considered in any reforms in majors, courses and teaching methods and employment promotion.
- (ii) Participation: During multiple TVET system development and innovation, including partnership between school and industries, public participation of the students from poor or low-income households should be conducted. Their comments and suggestions should be considered and incorporated into the system.
- (iii) Affordability: Any tuition and cost for lodging and new facility application can't be increased after building the multiple TVET system and completion of the new Chengbi campus. Affordability of students from poor or low-income households must be analyzed if any cost changes dominated by relevant government departments. In this case, measures to reduce financial burden of the students should be prepared and implemented.
- (iv) **Employment:** Measures designed especially for students from poor or low-income households should be prepared to promote their employment after graduated from schools. During the school and industry cooperation, site practices and employment priority for such students should be incorporated into the multiple TVET. The tracer study mechanism to be implemented by BU from this year should collect disaggregated data covering sex, ethnicity, poor, rural/urban per priority major, and the tracer study reports will incorporate gender and social analysis demonstrating student graduation, job changes, job satisfaction, and choices of continuation of higher education in all priority majors.

### B. Main Actions for Female Students and Teachers

148. The following actions for female students and teachers should be taken during the project implementation. The actions are included into GAP and SAP.

- (i) **Inclusiveness:** The multiple TVET strategic development research and planning shall incorporate gender equity and social inclusion considerations through collection of disaggregated data (sex, ethnic minority, rural and urban), inclusion of gender analysis and identification of specific measures to ensure equitable access to the multiple TVET.
- (ii) Participation: Outreach and public awareness programs shall be designed to (a) ensure adequate space and opportunity for participation of both women and men in target communities, (b) promote male and female participation in non-traditional sectors (e.g. female in metal chemistry, metal material, material modeling and control engineering, male in pre-school education etc.), (c) introduce different levels of TVET pathways, and (d) provide information on various forms of job opportunities linked with the levels of pathways available for both male and female students.
- (iii) Protection of Women Development: The project will support the establishment of a separate neutral office responsible for (a) emotional and psychosocial wellbeing of students, (b) development of a Code of Conduct for prevention of sexual harassment, (c) establishment of a reporting and response mechanism for incidents of sexual harassment (d) training of all students, staff and teachers on the Code of conduct and reporting mechanism, and (e) monitoring of the implementation of such a mechanism during and after the project implementation.
- (iv) Staff Development: The leadership training shall create space for both male and female teachers to participate in different learning experiences. Such leadership and professional development training programs will include a module on gender issues, including gender sensitive training and breaking the gender stereotypes of different majors/occupations. The training of teachers will feature equal number of male and female teachers and adequate representation of teachers from ethnic minority groups.
- (v) Employment: Measures designed especially for female students should be prepared to promote their employment after graduated from schools. During the school and industry cooperation, site practices and employment priority for such students should be incorporated into the multiple TVET. Career introduction and guidance and mentoring sessions shall be conducted separately for male and female students covering employability skills, professional behavior, different forms of occupations in selected majors and linkage to learning pathways. One of the key features of such sessions will be a special Speaker Series will introduce students to potential role models, particularly female, (could be industry leaders such as female principles of schools, female CEOs) who could present success stories of breaking the gender stereotypes and pushing the glass ceiling. In addition, a mentoring program will link female students with female faculty or women in related field. Regular meetings will be organized between the mentors and

mentees so students can learn about job possibilities, workplace awareness and other issues of concern.

(vi) C. Main Actions for EM Students and Teachers

149. The following actions for ethnic minority students and teachers should be taken during the project implementation. The actions are included into SAP.

- (i) Inclusiveness: In the development and design of pathways for students from secondary vocational education to high vocational education to university education, any barriers affected students from ethnic minority households to receive education in higher level must be broken. Inclusiveness of the EM students and teachers should be considered in any reforms in majors, courses and teaching methods and employment promotion.
- (ii) Participation: During multiple TVET system development and innovation, including partnership between the school and industries, public participation of the students and teachers from EM households should be conducted. Their comments and suggestions should be considered and incorporated into the system.
- (iii) **EM features:** During multiple TVET strategic development, including design of majors, curricula, teaching methods, and the school and industry cooperation, ethnic minority features that benefit ethnic minority student and teacher development should be considered and incorporated.
- (iv) **Employment:** Measures designed especially for students from ethnic minority households should be prepared to promote their employment after graduating from schools. During the school and industry cooperation, site practices and employment priority for such students should be incorporated into the multiple TVET.