Project Administration Manual

Project Number: 47009
November 2014

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

Contents

APPENDIXES

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. Baise municipality is in one of the 14 national poverty areas in the People's Republic of China (PRC).[1] The population of 4 million includes six main ethnic minority groups, which make up 86% of the population.[2] Baise is being developed by the government as a new economic base in the 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. As it is close to 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 national Twelfth Five-Year Plan agenda on rebalancing the economy, and the national urbanization plan.[3]

2. Increased investment in Baise has led to year-on-year growth of 25.2% but future economic development is constrained by lack of a skilled workforce. Baise municipal government (BMG) has calculated a 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 the 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.[4] 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 which will link academic education and technical and vocational education (TVET) to help create higher-skilled graduates. The government's National Plan for Medium and Long-term Education Reform and Development, 2010–2020 identified TVET as a critical element in developing a high-skilled multilevel workforce to meet the demands of industry and services in the country.[5] The strategy in Baise aligns with two national education reforms 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 create links between education levels, 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, adult education programs, and industry.

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 the BMG to support inclusive growth. MLT will build opportunities for rural and ethnic minority students to better access and progress in education and enter into the rapidly changing economy. MLT in Baise will integrate the education and training systems to create pathways for initial training and entry to and progress within the workforce by linking the human resources and skills supply from universities,

[1] Nine out of the 12 counties in Baise municipality are national poverty counties.
[2] The main ethnic minority groups are Zhuang, Yao, Miao, Yi, Gilao, and Hui.
[3] National People's Congress. 2011. *Twelfth Five-Year Plan for National Economic and Social Development, 2010–2015*. Beijing.
[4] It is estimated that 600,000 people left the municipality in 2012 seeking work in other provinces.
[5] Ministry of Education. 2010. *National Plan for Medium and Long-term Education Reform and Development, 2010–2020.* Beijing: Government of the People's Republic of China.

vocational colleges, secondary vocational schools (SVSs), 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,[6] is well-positioned to take the lead in developing MLT provision locally and eventually playing a demonstration role at provincial and national levels. Baise University has been selected[7] to be one of 19 demonstration universities in the GZAR to transition into a TVET-applicable institution with a focus on developing majors that link more closely to industry needs.

5. Implementing the reforms for 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 the participation of industry. The attractiveness of TVET as an option for students has been a challenge for the 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 curricula, instruction, and assessment are competency based, and are more flexible and responsive. Most staff members do not have relevant industry experience and standards to apply in the classroom or workshop. Building better partnerships with industry, involving them in curriculum development and training, will ensure relevance of the TVET programs and employability of students. The project focus on improving quality in curriculum and teacher training, and strengthening school–industry partnerships, will address these issues.[8]

6. Specialized facilities, workshops, and learning spaces will be needed to support the emphasis on science and technology courses and a 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[9] will serve as models of green and sustainable development for other campuses across the 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) conducting 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 the PRC's structural reform of the economy. The project is consistent with the PRC's Twelfth Five-Year Plan, 2010–2015 which promotes inclusive growth, and environmentally 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 Strategy

[6] Baise University receives students from the 22 SVSs in the municipality as well as from GZAR and other provinces.
[7] Baise University was selected by the GZAR Education Bureau to participate in the Ministry of Education national program.
[8] The TVET Training Center under the project will disseminate good practices in curriculum, staff development, and creation of industry partnerships with other TVET schools in the municipality and, eventually, regionally.
[9] The Green Sustainability Center will develop green campus management programs; curricula and research in environment sustainability-related areas and outreach to students, staff, and local communities.

2020 which emphasize promoting TVET to address the human resource agenda, the education sector strategic plan,[10] and with ADB's PRC country partnership strategy, 2011–2015.[11]

9. **Incorporation of lessons learned.** Lessons from TVET programs in the PRC and globally that have been incorporated into the project design include (i) involving industries in curriculum development and training; (ii) developing competency-based curricula, teaching, and assessment approaches; (iii) creating learning pathways; (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 as follows:

12. **Output 1: TVET quality improved and capacity developed.** This component will (i) develop an integrated MLT system that provides curricula linking vocational secondary, college, and undergraduate levels of TVET; (ii) implement a competency-based approach to curricula, instruction, and assessment in priority areas across different majors and course levels;[12] (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.

13. **Output 2: Chengbi campus constructed and environmental sustainability promoted.** The component will construct phase 2 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.[13] A 3.86 million kilowatt-hour (kwh) photovoltaic power system will be installed, and campus roads, sport facilities, slope protection, and other school facilities will be constructed. Teaching and laboratory equipment for the new campus will be financed by domestic funding. The Green Sustainability Center will ensure development of green principles in campus management, curriculum development, and community outreach.

14. **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,

[10] 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.

[11] ADB. 2012. *Country Partnership Strategy: People's Republic of China, 2011–2015.* Manila.

[12] Selected priority areas are aluminum processing, preschool education, design, engineering management, and agriculture. These are in line with the priority growth sectors for Baise Municipality. Curriculum for new majors in tourism and logistics will also be developed.

[13] An overview of the campus construction, equipment, and special features is in Appendix 5 of the project administration manual.

assignments, and training; (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.

15. **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 implementation in compliance with the PRC and ADB requirements.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Indicative Activities	2014 3	4	5	6	7	8	9	10	11	12	2015 1	2	3	4	5	6	7	8	9	10	11	12	Responsibility
Domestic processing																							
EIA approval																							BEPB
FSR approval																							GDRC
Foreign capital utilization report																							NDRC
Project evaluation opinion report																							MOF
Loan negotiation																							MOF/NDRC, ADB
ADB Board approval																							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, 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

Indicative Activities	2014		2015				2016				2017				2018				2019			
	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 2019																						
0 **Project readiness activities**																						
0.1 Start-up consultants appointed																						
0.2 Setting up project management, procurement, and financial systems																						
0.3 Recruitment of the project implementation consultants																						
0.4 Conduct project management procurement and finance systems and training workshops																						
0.5 Prepare documentation for advanced contracting financing																						
Output 1: TVET Quality Improved and Capacity Developed																						
1.1 Multilevel TVET strategic development																						
MLT system leading group established																						
MLT architecture established																						
Training provided in MLT system																						
Establishment of MLT system data 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 all teaching staff																						
1.2.5 Develop curriculum in entrepreneurship and																						

Indicative Activities	2014		2015				2016				2017				2018				2019			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
employability skills																						
1.2.6 Review of quality assurance system in curriculum, assessment, and 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 (human resources management)																						
1.4 Staff development																						
1.4.1 Revision of staff training plan to include MLT system																						
1.4.2 Strategy for dual qualifications upgrade																						
1.4.3 Development of leadership training program																						
1.4.4 Develop and deliver program for core teachers																						
1.4.5 Develop domestic study tours for observation and investigations																						
1.4.6 Organize staff training attachments in domestic TVET institutions																						
Output 2: Chengbi Campus Constructed and Environmental Sustainability Promoted																						
2.1 Preliminary design of advance contracting and retroactive financing packages																						
2.2 Bidding document for advance																						

Indicative Activities	2014		2015				2016				2017				2018				2019			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
contracting and retroactive financing packages																						
2.3 Preliminary design for other packages																						
2.4 Construction drawings for advance contracting and retroactive financing packages																						
2.5 Bidding documents for other packages																						
2.6 Construction drawings for other packages																						
2.5 Construction of advance contracting and retroactive financing packages																						
2.6 Construction of other packages																						
2.7 Equipment procurement																						
Output 3: TVET Innovation and Relevance Promoted																						
3.1 School-industry partnerships																						
3.1.1 Development of student information and employment system																						
3.1.2 Industry attachments organized																						
3.1.3 Enterprise education facility established																						
3.1.4 Establish school-industry leading groups																						
3.1.5 Design and implement model training programs for migrant workers																						
3.1.6 Design and implement entrepreneurship. incubation program																						
3.2. Regional cooperation																						
3.2.1 Team trained in regional cooperation activities/strategies																						
3.2.2 Attendance at regional forums																						

Indicative Activities	2014		2015				2016				2017				2018				2019			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
and activities																						
3.2.3 Cross border language education programs investigate																						
3.2.4 Further University Of Thailand 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 applied to MLT system																						
Output 4: Project Implementation Management																						
4.1 Organizational arrangement for implementing agency completed and strengthened																						
4.2 Recruit and mobilize implementation support consultants																						
4.3 Undertake training and provide project implementation support																						
4.4 Implement EMP, SGAP																						
4.5 Develop and implement campus sustainability strategy, sustainability center																						

APEC = Asia-Pacific Economic Cooperation, CBA = curriculum-based approach, EMP = environmental management plan, MLT = multilevel TVET system, Q = quarter, 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.[1] 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 is Baise University, which has set up a project leading group co-chaired 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.

2. The implementation roles and responsibilities are summarized in Table 1.

Table 1: Implementation Roles and Responsibilities

Project Stakeholders	Management Roles and Responsibilities
Oversight Body Baise Project Leading group	(i) Providing overall policy guidance. (ii) Facilitating interagency coordination. (iii) Resolving any institutional problems affecting project preparation and implementation.
Executing agency Baise Municipal Government	(i) Providing overall project direction and any required policy guidance. (ii) Overseeing the preparation and implementation of the project. (iii) Providing overall strategic guidance to the project. (iv) Supporting cross-agency policy dialogue. (v) Reviewing project progress to support effective implementation. (vi) Ensuring counterpart contributions are provided for project implementation on time.
Baise finance bureau	(i) Establishing, managing, monitoring, and reconciling the imprest

[1] 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
	account. (ii) Reviewing the withdrawal applications submitted by the project management office and further submits to higher financial authorities for approval.
Project Management Office (under the Baise Development and Reform Commission)	(i) Directing project preparation and implementation activities. (ii) Developing the annual work program and budget. (iii) Coordinating financial management of the implementing agency and consolidating project accounts and financial statements. (iv) Submitting withdrawal applications to the Baise Finance Bureau. (v) Establishing baseline data to monitor project impacts, including regular monitoring of physical, environmental and financial progress. (vi) Submitting reports to ADB, BMG, and relevant government departments of Baise Municipality and Guangxi Province in accordance with the approved reporting plan. (vii) Supervising and reporting to ADB on EMP and SGAP implementation and compliance. (viii) Setting up and coordinating safeguard GRM. (ix) Liaising with ADB and other agencies. (x) Coordinating with the implementing agency for the consulting services and training activities.
Implementing Agency Baise University	For civil works: (i) Contracting of design institute, CSC, and required monitoring institutes (environment, soil erosion) under guidance of PMO. (ii) Contracting procurement agent, coordinate preparation of bidding documents and procurement activities under guidance of PMO. (iii) Undertaking detailed procurement work for all works contracts under guidance of the PMO. (iv) Liaison with Baise Finance Bureau and other agencies as needed regarding the timely provision of counterpart funding (v) Coordinating and providing overall project implementation support involving contract and financial management. (vi) Progress monitoring and reporting to PMO. (vii) Commissioning and handover of physical assets upon completion. (viii) Coordinating EMP implementation on site, including conducting environmental inspections and regular monitoring; preparing quarterly environmental inspection and monitoring reports. (ix) Coordinating and reporting on SGAP implementation and ethnic minority actions including regular monitoring. (x) Coordinating the development of a Green Campus Sustainability initiative, and the establishment of a Green Campus Sustainability Center (under the Baise University's Comprehensive Affairs Department). For Multilevel TVET capacity building and innovation: (i) Implementing the TVET capacity building activities involving the multilevel TVET strategic development; curriculum development; teacher training and pedagogy reform; and staff development. (ii) Implementing of the TVET innovation activities involving the school-industry partnerships; regional cooperation and specific researches. (iii) Providing counterpart staff for implementing the TVET strengthening activities. (iv) Establishing and maintaining project monitoring systems and reporting to PMO. (v) Participation in periodic review of TVET improvement strategies

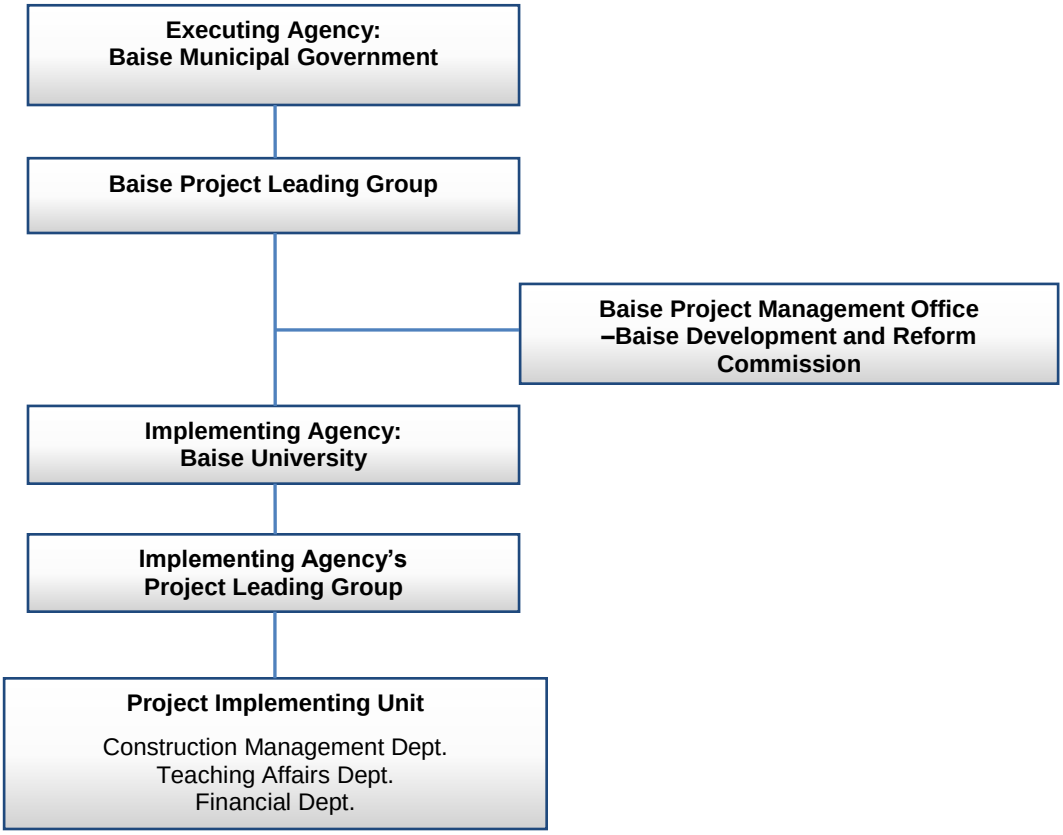
Project Stakeholders	Management Roles and Responsibilities
	and in project impact evaluation. (vi) Participation in the procurement activities, such as technical specification, requirements and bidding evaluation, or in procurement relating to TVET strengthening activities. (vii) Coordinating and providing overall project implementation management support involving loan implementation technical assistance and training and project monitoring and evaluation.
Asian Development Bank	(i) Overall project administration. (ii) Orientations to the executing agency and implementing agency. (iii) Review of draft bidding documents and approval of bid evaluation reports. (iv) Disbursement of ADB loan proceeds.

ADB = Asian Development Bank, BMG = Baise municipal government, 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 Baise Municipal Government	Mr. Bei Liu Vice Director, Baise Development and Reform Commission Telephone No.: 86-0776-2851333 Email address: gxbslb007@163.com Office Address: Donghe Er Road, Youjiang District, Baise, Guangxi, 533000
Asian Development Bank East Asia Regional Department Urban and Social Sectors Division	Staff Name: Sangay Penjor Position: Officer-in-Charge Telephone No.: +63 2 632 6730 Email Address: spenjor@adb.org Staff Name: Wendy Walker Position: Principal Social Development Specialist Telephone No.: +632-632 5955 Fax No.: +632-636 2407 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)

Item		Amount
A. Base Cost [a]		
	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 [b]		**10.09**
C. Financing Charges During Implementation [c]		
	ADB	3.20
	Domestic Bank	2.72
	ADB Commitment Charge	0.15
	Subtotal (C)	**6.07**
	Total (A+B+C)[d]	**103.54**

ADB = Asian Development Bank, TVET = technical and vocational education and training.
[a] In May 2014 prices.
[b] 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.
[c] 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%.
[d] 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,[1] straight line repayment option, an annual interest rate determined in accordance with ADB's London Interbank offered rate (LIBOR)-based lending facility, a

[1] 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.

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.

Table 2: 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
Total	**103.54**	**100.00**

OCR = ordinary capital resources.
Source: Asian Development Bank 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
Number	Item	Total Amount Allocated for ADB Financing $ Category	Percentage and Basis for Withdrawal from the 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 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 consulting 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)

Item		ADB		Baise Municipal Government		Domestic Bank		TOTAL	
		Amount	%	Amount	%	Amount	%	Amount	% of Total Cost
A.	**Base Costs**								
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
B.	**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 Contingencies (B)		0.00	0.00	10.09	100.00	0.00	0.00	10.09	9.75
C.	**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
Financial 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**

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

D. Detailed Cost Estimates by Expenditure Category

Item		(CNY million) Local Currency	Foreign Exchange	Total Cost	($million) Local Currency	Foreign Exchange	Total Cost
A.	**Investment 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 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
B.	**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 Project Cost (A+B+C)		201.06	440.91	641.98	32.43	71.11	103.54

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

E. Detailed Cost Estimate by Components ($ million)

No.	Item	Total Cost	Improving TVET quality and capacity development		Chengbi campus constructed and promoting environmental sustainability		Promoting TVET innovation and relevance	
			Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category
A.	**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**
B.	**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**

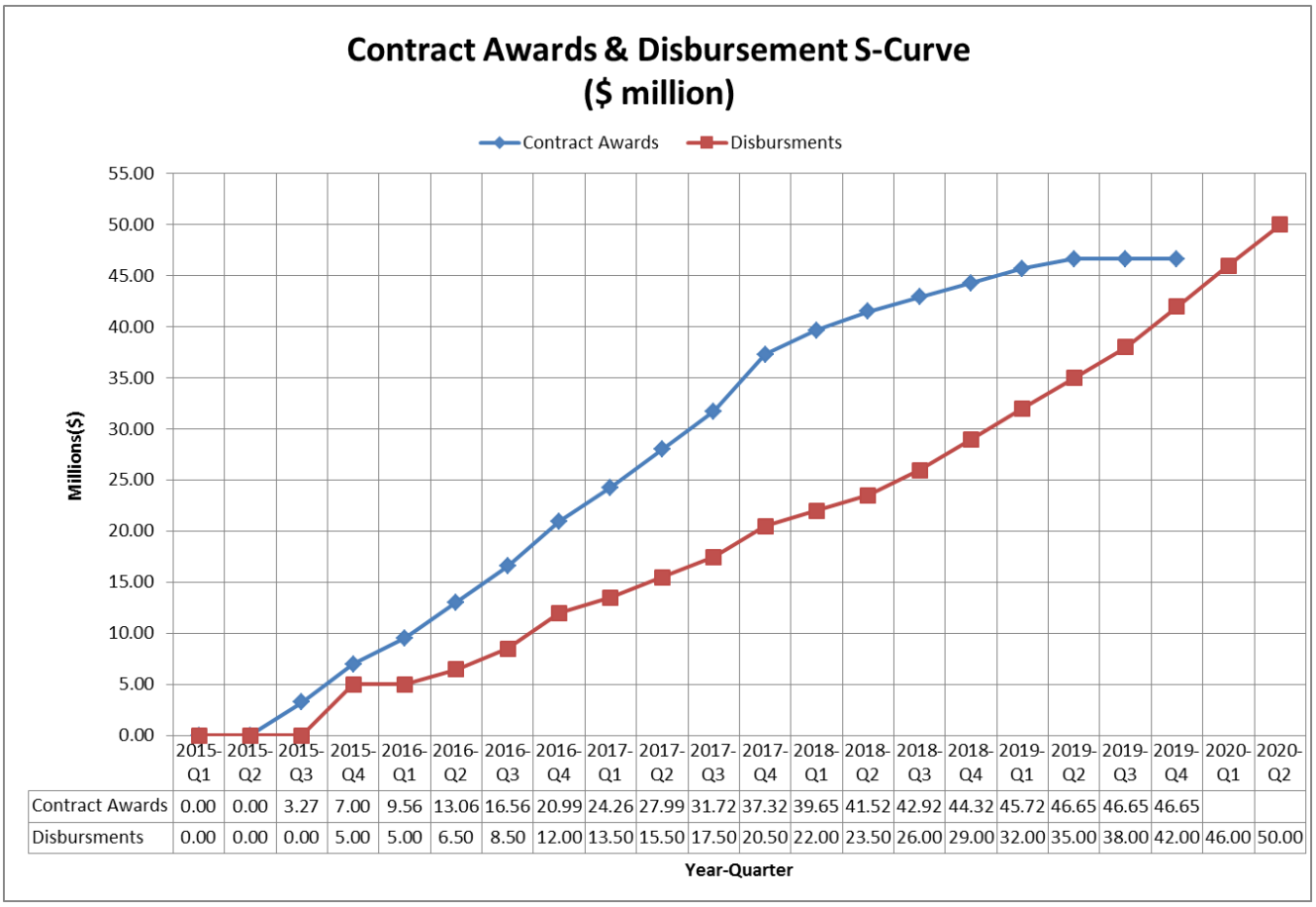
ADB = Asian Development Bank, TVET = technical and vocational education and training.

F. Detailed Cost Estimate by Year ($ million)

Item		2015	2016	2017	2018	2019	Total
A.	**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**
B.	**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
Financial Charges (C)		**0.60**	**1.21**	**1.38**	**1.46**	**1.42**	**6.07**
TOTAL PROJECT COSTS (A+B+C)		**19.54**	**30.12**	**30.90**	**16.46**	**6.52**	**103.54**

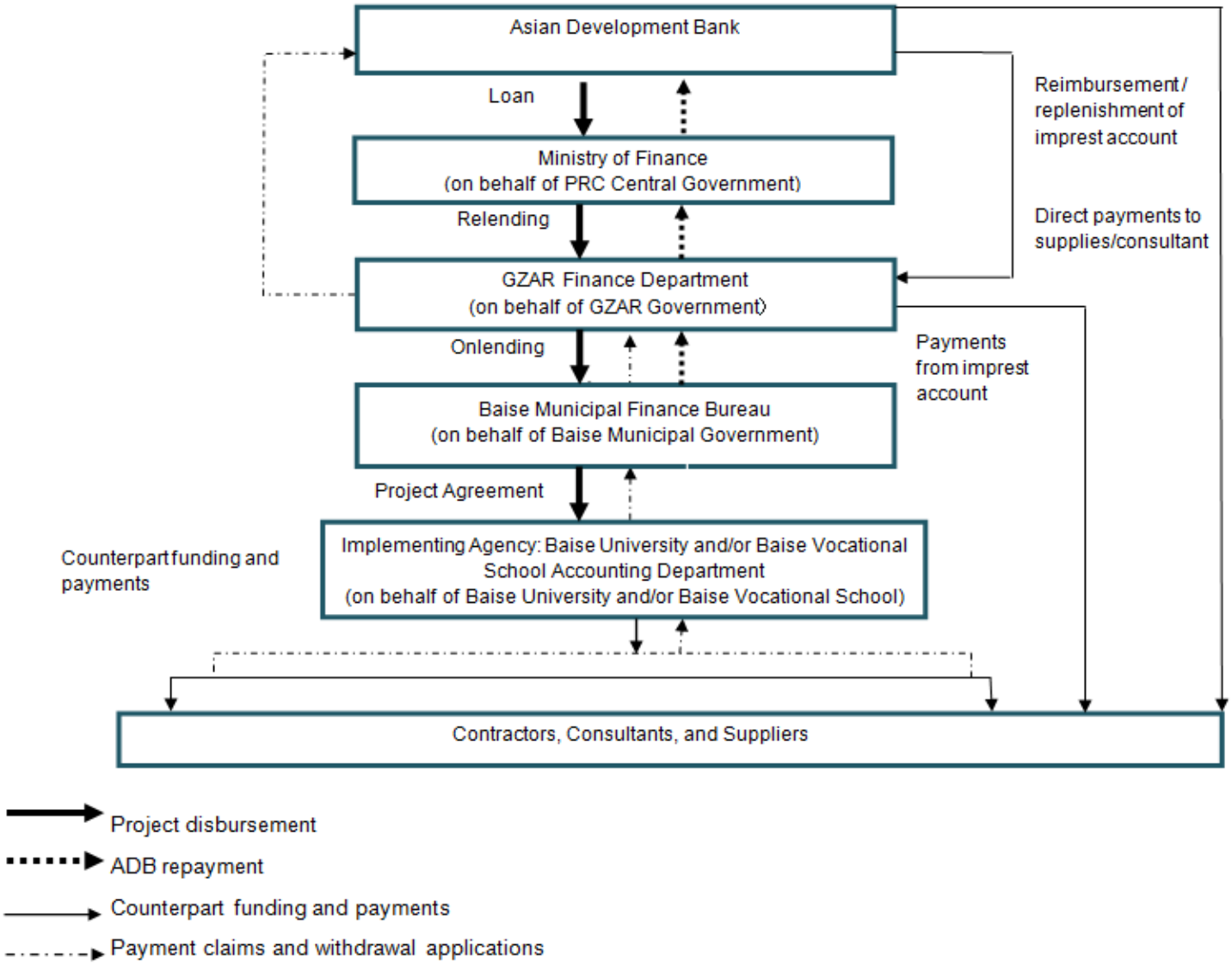
ADB = Asian Development Bank, TVET = technical and vocational education and training.

G. Contract and Disbursement S-curve



	2015-Q1	2015-Q2	2015-Q3	2015-Q4	2016-Q1	2016-Q2	2016-Q3	2016-Q4	2017-Q1	2017-Q2	2017-Q3	2017-Q4	2018-Q1	2018-Q2	2018-Q3	2018-Q4	2019-Q1	2019-Q2	2019-Q3	2019-Q4	2020-Q1	2020-Q2
Contract Awards	0.00	0.00	3.27	7.00	9.56	13.06	16.56	20.99	24.26	27.99	31.72	37.32	39.65	41.52	42.92	44.32	45.72	46.65	46.65	46.65		
Disbursments	0.00	0.00	0.00	5.00	5.00	6.50	8.50	12.00	13.50	15.50	17.50	20.50	22.00	23.50	26.00	29.00	32.00	35.00	38.00	42.00	46.00	50.00

H. Fund Flow Diagram



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 project preparation assistance 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.

Table 1: Risk Assessment and Risk Management Plan

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

External auditors do not perform their functions adequately.		will be appointed by the executing agency to audit project accounts and compliance with financial covenants on an annual basis.
1.10 Reporting and monitoring Regular financial reports suitable for user needs are not prepared.	M	(i) The executing agency will make comprehensive progress reports (including financial) to ADB semiannually. (ii) Consultancy support to advise improvements needed to financial management reporting.
Overall Control Risk Assessment	**M**	
2. Procurement		
2.1 Procurement capacity is low, leading to irregularities.	M	(i) Use of a specialist tendering company and a project readiness consultant will enhance capacity. (ii) Training in ADB procurement procedures during project preparations.
2.2 Lack of professionalism in the procurement function	M	(i) PMO to appoint a procurement specialist. (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 suppliers	L to M	(i) Use of performance guarantees. (ii) Investigation and monitoring of past performance.
Overall Procurement Risk Assessment	**M**	
3. Other Project Implementation Risks		
3.1 TVET proves inaccessible and/or unattractive to the potential student population.	M	Central government is strongly supportive of TVET development. The project design is intended to improve the quality and relevance of TVET courses and to improve the employability of TVET graduates.
3.2 The commitment of TVET institutions to implementing change in teaching and learning methods is not sustained.	M	TVET improvement strategies have been developed through a consultative process that indicated a strong recognition of the need to improve, and with the strategies individually reviewed and finalized with the participation of the schools themselves.
3.3 Insufficient interest by BMG in integrating the pilot innovations and disseminating experiences and materials	M	BMG is willing to give a loan assurance that they will actively disseminate the pilot results and seek to make them models of best practice. ADB's ongoing policy dialogue on the pilot activities with BMG.

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),[1] and detailed arrangements agreed upon between the government and ADB.

6. Pursuant to ADB's Safeguard Policy Statement (2009),[2] 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.[3] 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.[4] 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.[5]

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.[6]

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

[1] *Loan Disbursement Handbook* available at http://www.adb.org/documents/loan-disbursement-handbook. Link Chinese version http://www.adb.org/documents/loan-disbursement-handbook-zh.
[2] Available at: http://www.adb.org/Documents/Policies/Safequards/Safeauard-Policv-Statement-June2009.pdf
[3] Bank charges may be financed from the ADB loan.
[4] SOE procedures and formats are available at Appendix 9B of the *Loan Disbursement Handbook.*
[5] Follow the format provided in Appendix 10C of the *Loan Disbursement Handbook.*
[6] Checklist for SOE procedures and formats are available at Appendix 9A–9C of the *Loan Disbursement Handbook*.

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.

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 approach on delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.[7] ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the

[7] ADB approach on delayed submission of audited project financial statements:

(i) When audited project financial statements are not received by the due date, 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.

(ii) When audited project financial statements have not been received within 6 months after the due date, 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.

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

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).[8] 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.

[8] Public Communications Policy available at http://www.adb.org/documents/pcp-2011. Chinese version available at http://www.adb.org/documents/pcp-2011-zh.

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)[1] and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).[2] 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

[1] Available at: http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf
[2] Available at: http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf

$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 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 Development Project	
Project Number: 47009-002	**Approval Number:**
Country: People's Republic of China	**Executing Agency**: Guangxi Baise Government
Project Financing Amount: US$103,540,000 **ADB Financing:** US$50,000,000 **Cofinancing (ADB Administered):** **Non-ADB Financing:** US$53,540,000	**Implementing Agency:** Baise University
Date of First Procurement Plan: 28 October 2014	**Date of this Procurement Plan**: 28 October 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 noted
Consultant qualification selection	
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.

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

Package No.	General Description	Estimated Value	Procurement Method	Review (Prior /Post)	Bidding Procedure	Advertisement (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, and B3	$8,672,499	NCB (advance contracting and 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	
Equipment Supply and Installation							
E01	Photovoltaic power system	$4,770,968	ICB	Prior	1S1E	Q1/2016	
E02	Heat pump systems at library and administration building	$2,324,048	ICB	Prior	1S1E	Q1/2016	

1S1E = 1 stage, 1 envelope; ICB = international competitive bid; NCB = national competitive bidding.
Note: 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.

Table 5: Consulting Services Contracts

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

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

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

Table 7: Consulting Services (Smaller Value Contracts)

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

Table 8: Goods (Smaller Value Contracts)

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

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 Development Bank Sources

General Description	Estimated Value (Cumulative)	Estimated Number of Contracts	Procurement Method	Comments
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).[1] The consultants will be engaged through quality- and cost-based selection (QCBS).[2] Detailed terms of references are included in Appendix 3 of the PAM.

[1] 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.

[2] Terms of reference guidelines available at http://www.adb.org/Documents/Manuals/Consulting-Services-OperationsManual/CSOM.pdf?bcsi_scan_D4A612CF62FE9576=AORY9a8Nho2ezS9Xss/ligEAAAANNiAA&bcsi_scan_filename=CSOM.pdf (paras. 65–72).

16. There are three consulting services packages: (i) a consulting firm will be engaged through 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 through QCBS method for project management and implementation support, including sustainable campus development and promotion (5 person-months international, 45 person-months national).

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 secondary vocational school (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 Human Resources and Social Security Bureau (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 are 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) through 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
TVET teacher training specialist	4	8
School-industry specialist	0	6
Regional cooperation specialist	0	2
Subtotal	**30**	**82**
Package 2: Project Implementation Start-up Support		
Contract management and procurement specialist	0	3
Subtotal	**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
Subtotal	**5**	**45**
Grand Total	**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.

Table 11: List of Report Delivery

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

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 inter-relationships 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

1. **Environmental classification for the project**. The project is classified as category B. 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.[1] 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),[2] 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 cubic meters per annum (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

[1] 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.

[2] ADB. 2009. *Safeguard Policy Statement*. Manila.

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 and environmentally sustainable campus. All buildings will be designed in compliance with green and energy-efficient building codes and specifications.[3] 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 megawatt solar photovoltaic power generation system will be installed in the campus, generating some 3.86 million kilowatt hour 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. 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 carbon dioxide emissions per year.[4] 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_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 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 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.

5. **Environmental management plan implementation responsibilities**. The project 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

[3] 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.

[4] A kilowatt hour electricity generated by solar energy is equal to 0.4 kilogram standard coal saving and 0.997 kilogram of CO_2 emission reduction.

(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.

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 questionnaire 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 the ADB 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.

11. As per para. 17 SR3[5] 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,[6] 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.

12. 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.

[5] "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."

[6] 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.[1] 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.

[1] 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.

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 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 person-months 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.

Social and Gender Action Plan

Output	Action	Indicator	Budget	Responsible Institutions
Output 1: Technical and Vocational Education and Training Quality Improved and Capacity Developed				
1.1 Multilevel TVET strategic development	(i) Training on and development of the MLT system ensures participation of men, women, and ethnic minorities. (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. (iii) Outreach and public awareness programs designed to address potential social and gender bias in enrollment and selection of majors and social inclusion.	(i) 40% female participants and 50% ethnic minorities (baseline: female Baise University staff, 43%). (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. (iii) 50% female participation in outreach programs. (iv) Information, education, and communication materials on choices of courses, occupations, and learning pathways promote student enrollment in non-traditional sectors. (v) Student enrollment database reviewed annually to measure changing profile of students[1]	Included in the project.	SDGE, Baise Universtiy, PMO, and Education Bureau of counties and/or districts.
1.2 Curriculum development	(i) Competency based curriculum integrates principles of gender equality and social inclusion; (ii) Training in CBA includes all teaching staff (male and female, ethnic minorities); (iii) New curriculum includes modules on ethnic minority cultures where possible.	(i) All materials reviewed by SDGE and resource persons and recommendations included in finalized materials. (ii) All female and ethnic minority staff participate in CBA training (baseline: 0). (iii) Ethnic minority cultures module developed and incorporated in the curriculum (e.g., tourism, preschool).	Included in the project.	Curriculum development group, SDGE, Baise Universtiy, and PMO.
1.3 Teacher training	Core teacher training system ensures participation of all teachers.	At least 40% female, 30% ethnic minorities.	Included in the project.	The reform group, SDGE, Baise Universtiy, and PMO.
1.4 Staff development	(i) Leadership training includes a module covering gender equality and social inclusion; (ii) Female and ethnic minority teachers and/or staff participate in all staff development training programs.[2]	(i) A gender equality and social inclusion focused module developed and incorporated in leadership training curriculum. (ii) 40% female teachers and/or staff, 50% ethnic minorities participate in each of the planned trainings.	Included in the project.	Baise Universtiy and PMO.
Output 2: Chengbi Campus Constructed and Environmental Sustainability Promoted				
Civil works	(i) Consultation with teachers and students on the new campus design.	(i) At least three consultation meetings: 40% female participants, 50% ethnic minorities.	Included in the design budget	Baise Universtiy,

[1] Changing profile of students with regard to students in non-traditional sectors and increase in students from rural areas.
[2] Staff development trainings include leadership training, oversees training, domestic study tours, and trainings in TVET institutions.

Output	Action	Indicator	Budget	Responsible Institutions
	(ii) New campus features gender sensitive living and working conditions. (iii) Female workers participate in jobs generated by the project (6,881 person-months during construction and 685 positions during operation); (iv) Specific measures for prevention, reporting and response to prevention of sexual harassment in campus developed and adopted.	(ii) Separate dormitories for male and female students/teachers (iii) Separate male and female latrines in campus facilities. (iv) Improved safety measures during night (v) At least 20% of jobs targeted for local female during construction; and at least 35% of job positions during operation for female. (vi) All project institutions develop and implement specific measures for prevention, reporting and response to sexual harassment.	and construction budget.	design institute, PMO, contractors and SDGE.
Output 3: Technical and Vocational Education and Training Innovation and Relevance Promoted				
3.1 School-industry partnerships	(i) All three leading groups [3] ensure female participation. (ii) Implementation guidelines for gender mainstreaming in Enterprise Education Facility and Entrepreneurship Incubation Program designed. (iii) Special speaker series introduced to facilitate identification of potential role models, particularly female, from different professional backgrounds. (iv) Career guidance and mentoring sessions link female students with female faculty/professional women. (v) Gender recognition award established to recognize industry partners who have reduced gender inequality in workplace or promoted women in non-traditional sectors.	(i) 30% female members in each group (baseline: 0). (ii) Implementation guidelines developed with participation of male and female teachers. (iii) Once every 2 months speaker series introduced; 50% of speakers are professional women from different professional backgrounds. (iv) Monthly mentoring sessions established, 100% female students paired with a mentor. (v) Guidelines for gender recognition award developed; annual gender recognition award granted.	Included in the project.	The partnership committee, SDGE, Baise Universtiy, and PMO.
3.2 Regional cooperation	(i) Ensure both male and female staff are included in the training of management team; (ii) Identification and expansion of ethnic minority culture regional cooperation activities.	(i) At least 30% female staff. (ii) Ethnic minority culture regional cooperation activities included in the regional cooperation expansion plan.	Included in the project.	Cooperation team, SDGE, Baise Universtiy, and PMO.

[3] 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 Institutions
3.3 Research	(i) School-industry partnership regulation and policy include strategies to address gender stereotyping in majors/occupations. (ii) Gender analysis included in research on emerging labor market. (iii) Review bridging modules/courses to address rural/urban disparities for students.	(i) Strategies to address gender stereotyping of majors/occupations. Reports identify gender disparities (if any) in priority sectors and recommend actions to address them. (ii) Recommendations to address rural/urban disparities identified and submitted to Baise Universtiy. (iii) Data analysis of growth area conducted with specific emphasis on gender impact in new economy.	Included in the project.	SDGE, Baise Universtiy, and PMO.
Output 4: Project Implementation Management				
	(i) SDGE involved in development and implementation of activities for outputs 1, 2, and 3. (ii) Ensure female and the ethnic minority staff in the project management.	(i) At least one SDGE with 6 person-month input is included; (ii) At least 30% female staff, 50% ethnic minority staff. (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.	Included in the project.	Baise Universtiy 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.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Table 1: Project Design and Monitoring Framework

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
Impact Economic development and industrial transformation of Baise municipality	**By 2023:** At least a 5% increase in employment in priority economic sectors (Baseline: TBD in 2015) At least a 7% increase in average wages (Baseline 2013: CNY36,100)	BMG annual statistics BMG annual statistics	**Assumption** The government sustains its priority for developing a multilevel labor pool **Risk** Economy falters and key industries fail to expand
Outcome A high-quality, flexible, and responsive MLT system developed which meets industry needs	**By 2019:** At least six multilevel programs in priority TVET majors established by 2018 (0 in 2014) Percentage increase in graduates (disaggregated by level, sex, major, ethnicity, residence) (Baseline: TBD in 2015) Increased employer satisfaction with knowledge, skills, and competencies of employees graduating from the project TVET institutions (Baseline: TBD in 2015)	Project progress reporting Base University and Baise Education Bureau statistics Tracer studies and industry surveys	**Assumption** Coordination of Baise University institutions, curriculum, and resources continues **Risk** Shift in education policy away from multilevel TVET development
Outputs 1. TVET quality improved and capacity developed	At least six competency-based gender-sensitive curricula developed with industry and implemented by 2019 TVET student enrollment in priority majors increases by at least 25% with target of 30% female student enrollment by 2018 (disaggregated by sex and further by level and major) 30% student graduates increase in Baise University (disaggregated by major and sex) Percentage of graduates receiving employment in areas where they have been trained 550 teachers (40% female) trained in CBA pedagogy and	Project progress reporting Project progress reporting Baise University statistics Baise University statistics Project progress reporting	**Assumption** Industry experts participate fully in developing effective training programs **Risks** Curricula developed do not adequately identify and respond to market demand Poor social perception of TVET limits MLT students

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	industry-relevant skills (disaggregated by sex, major, TVET level) 40% increase in dual qualified teachers (2014 baseline: 14% disaggregated by sex, major, level)	 Project progress reporting	
2. Chengbi campus constructed and environmental sustainability promoted	12 buildings constructed by 2017 including 19,000 m^2 of classrooms, 26,000 m^2 of training facilities, separate male and female dormitories, separate male and female latrines in campus facilities, safety features at night, and 3.86 megawatt photovoltaic power generation system operational by 2018 Campus sustainability strategy defined by 2015 and Green Sustainability Center operational by 2017 Share of renewable energy consumption of Baise University increased from 0% in 2014 to 15% by 2019 Number of students benefitting from new facilities (Target 18,000 at least 40% female)	Project progress reporting Strategy report and project progress reports Baise University facilities management reporting and and project progress reports Project progress reports	**Assumptions** Project financing is provided on time Project design and construction are implemented effectively **Risks** Delay in hiring the procurement agent and project implementation consultants Relevant agencies lack coordination in implementation and monitoring
3. TVET innovation and relevance promoted	Student information and employment data system established with capacity to disaggregate social and gender indicators by 2017 At least 10 regional cooperation agreements signed by 2019 At least 20 industry partnerships created by 2019 (disaggregated by industry) Career guidance and mentoring sessions link students with role models (100% female students)	Project progress reporting Project progress reporting Project progress reporting SGAP monitoring reports	**Assumption** Regional cooperation partners are ready to engage on TVET **Risk** Industries continue to seek qualified personnel from outside of Baise
4. Project implementation management	Institutional arrangement of project management office strengthened and fully staffed by 2015 (30% female, 50% ethnic minority) PPMS established and	Project progress reporting	**Assumption** Trained staff on project management and coordination remains in respective positions till the end of project implementation and

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	operational by 2015		beyond

Activities with Milestones	Inputs
1. Improving TVET Quality and Capacity Development 1.1 Develop core curriculum standards and CBA by Q4 2016. 1.2 Develop curriculum framework for MLT that incorporates a competency-based approach to course delivery in pillar industries in collaboration with industries by Q1 2016. 1.3 Develop teachers' guides, course materials, assessment tools, and train teachers by Q3 2018. 1.4 Upgrade teachers' skills in competency-based approach that is applied to their majors in priority areas by Q1 2018. 1.5 Develop teacher training modules, standards, and assessment handbook by Q4 2016. 1.6 Policy and guidelines developed for TVET teacher training center by Q2 2016. **2. Chengbi Campus Construction and Promoting Environmental Sustainability** 2.1 Design facilities and procure the works by Q2 2015. 2.2 Construct buildings and facilities by Q3 2016. 2.3 Procure and install training equipment by Q3 2017. **3. Promoting TVET Innovation and Relevance** 3.1 Implement student information and employment data system by Q1 2016. 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 representation by Q4 2015. 3.6 Initiate training and research partnerships by Q4 2018. **4. Project 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.	**Loan** **ADB: $50.0 million** **Counterpart funding:** **Baise Municipal Government: $40.64 million** **Domestic Bank: $12.90 million**

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

1. The project performance monitoring system (PPMS) indicators, their relevance, and 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.[1] 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 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.

[1] ADB's project performance reporting system is available at: http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool.

(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 semi-annual 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.

Table 2: Reporting to Asian Development Bank

Report	Reference	Due Time
PPMS (i) Develop comprehensive PPMS procedures (ii) Reporting of baseline and progress data including environmental management plan	Project Agreement, Schedule, paras.	No later than 6 months after loan effectiveness Semiannual
Semiannual project reports	Project Agreement, Schedule, Article	Semiannual, within 1 month after the end of each 6 months (July and January)
Audited financial statements	Project Agreement, Schedule	Not later than 6 months after the closure of fiscal year (June)
Social monitoring (i) Reporting on SGAP implementation (ii) Reporting on ethnic minority measures	Project Agreement, Schedule, paras.	To be included in the semi-annual project progress reports
EMP progress reporting by PMO to ADB	Project Agreement, Schedule, paras.	To be included in the semi-annual project progress reports and the consolidated annual reports
Environment monitoring report by PMO to ADB	Project Agreement, Schedule, paras.	Annually during construction and operation, until a project completion report is issued
Project completion report	Project Agreement, 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.

9. **Environment**. Meaningful consultation was carried out with affected people and 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.

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

Strategic Elements							Work Plan Elements		Evaluation
Outcomes	**Risks**	**Audiences /Stakeholders**	**Current and Desired Attitudes /behaviors**	**Messages /Information**	**Activity /Channels**	**Timing**	**Responsibility**	**Resources Needed**	**Expected Outcomes**
Develop-ment of an integrated multilevel vocational education system in Baise University, BVC, and BVS	Lack of connectedness between levels and learning pathways not well developed	Baise University, BVC, and BVS teaching staff + project stakeholders	Active cooperation e.g. to develop a sequence of learning outcomes between levels	1) Improved opportunities for students 2) Links between courses allow better teacher understanding and support	Working groups in priority sectors Industry cooperation in course development	Life of project Expansion potential for other TVET institutions in latter stages of project (including regional cooperation opportunities)	Baise University, BVC, BVS, PMO and the implementing agency	Project budget	More student enrollments and better student access to higher level TVET courses and programs
To promote closer and more structured enterprise involvement in the TVET sector	Schools and enterprise cooperation remains informal and inefficient	Baise University, BVC, and BVS are all treated as partners with enterprises Communication with industry sectors	There is active collaboration between TVET schools and industry. Project support creates more involvement and forges greater sharing of expertise	Mutual benefits of industry/TVET cooperation and the sharing of best practice arrangements	Leading group discussions, school/enter-prise partner-ships. Communication between school-industry and relevant government departments	Ongoing	PMO, schools and TVET groups	Project budget (Leading groups, Enterprise Education facility, research)	Increased decision making opportunities for industry Increased sponsorships of TVET
To promote gender sensitive curriculum development		Baise University, BVC and BVS Curriculum Working Groups Leading Groups	Reduce gender biases and promotion of stereotypes in curriculum and learning materials	Detailed guidelines for gender-sensitive curriculum to be provided to the working groups	Training (planned training for teachers and working groups)	Year 1: ongoing	PMO, curriculum groups	Project budget (curriculum development budgets)	Competenc y-based curriculum includes gender-sensitive material

Strategic Elements						Work Plan Elements			Evaluation
Outcomes	**Risks**	**Audiences /Stakeholders**	**Current and Desired Attitudes /behaviors**	**Messages /Information**	**Activity /Channels**	**Timing**	**Responsibility**	**Resources Needed**	**Expected Outcomes**
To document and share lessons learned through project's quality and capacity building activities	Quality and capacity building activities at school level are not shared with broader group of education, industry and government stakeholders	Other TVET institutions in province: including other TVET applicable universities	Increased learning from new curriculum training is applied to other majors and courses in current non-priority areas	For each activity (curriculum, teacher training, leadership development) key achievements need to be celebrated and lessons need to be shared	Workshops project committees and working groups Use of ICT platforms	Year 2 onwards	PMO, project committees and working groups	Project budget (Communication and outreach strategy)	Project evaluation reviews indicate responsive behavior has occurred to lessons 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.[1] 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.[2]

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.

[1] Available at: http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf
[2] ADB's Integrity Office web site is available at: http://www.adb.org/integrity/unit.asp

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.[1]

[1] 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

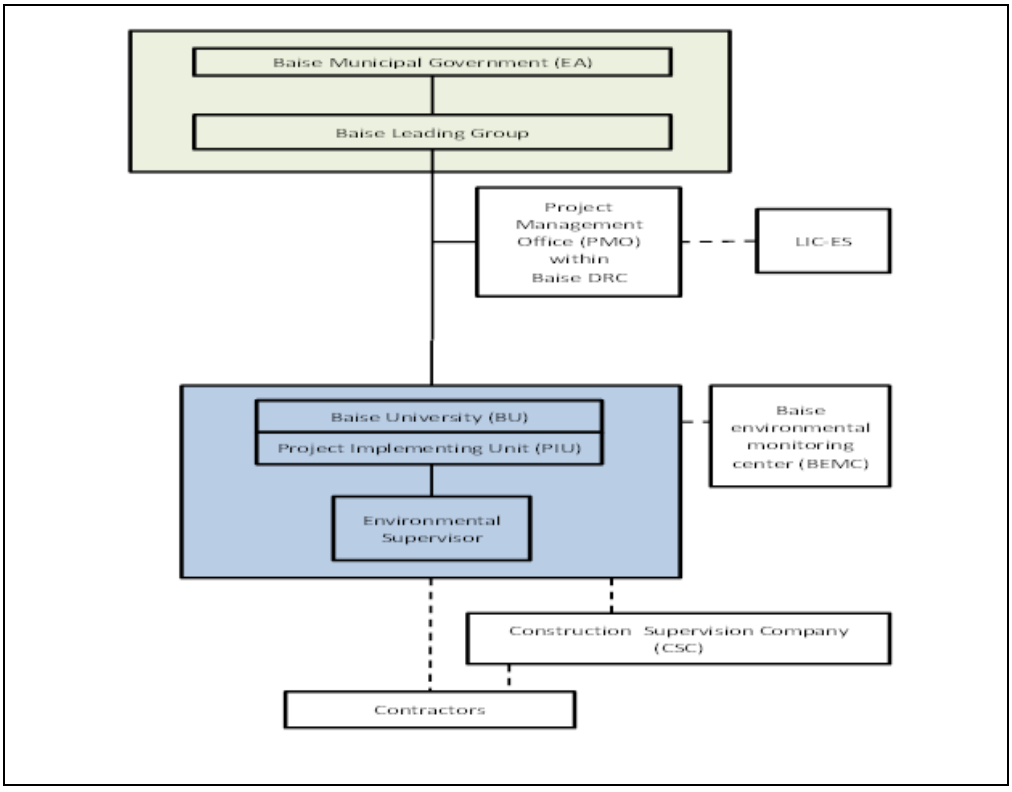


Figure EMP-1: Institutional Arrangement for Environmental Management of the Project. Figure EMP-1 defines the organizational structure for the Project implementation.

3. 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.

4. 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.

5. 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.

6. 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.

7. **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.

8. **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.

9. **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.

10. **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.

11. **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.

12. **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 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 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).[1]

13. Overall environmental responsibilities are outlined in **Table EMP-1**.

[1] This may include the following: energy conservation, resource-efficiency, 3R in waste management, health and safety, green procurement, campus landscaping, environment awareness).

Table EMP-1: Environmental Responsibilities by Project Phase

Phase	Responsible 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 agency, LIS-ES, 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
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 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. 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 completion acceptance 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 management requirements, and prepare annual environmental progress report 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

14. 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.

15. 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.

16. 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.

Table EMP-2: Anticipated Impacts, Mitigation Measures

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
A. Pre-construction Phase						
1. Detailed design stage	Institutional strengthening	Not applicable	• Implementing agency (Baise University) to establish PIU. • PMO to assign PMO-SO. • PMO to engage LIS-ES and CSPE. • Implementing agency to engage PIU-ES. • Implementing agency to engage BEPB.	Implementing agency, PIU, PMO	Executing agency, ADB	Project readiness assessment by LIS-ES, first EMR.
	Design complying with relevant national health, safety and environmental codes and standards, including green and energy-efficient building codes and specifications.	All new buildings	• 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 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. • Ensure use of no VOC-emitting materials (including paints, coatings, adhesives, carpet and furniture's) to ensure high indoor air quality.	Design institute	Implementing agency, PMO, LIS-ES	Approved detailed designs, first EMR
	Updating EMP	Not applicable	Review mitigation measures defined in this EMP, update as required to reflect detailed design.	LIS-ES, PMO-SO	ADB	Updated EMP approved by ADB and disclosed.
2. Bidding and contract award stage	Bidding documents and contractors qualifications	Not applicable	• Include updated EMP of the IEE as annex to the bidding documents. • Include an environmental section in the requirements for bidders. • Ensure that construction and supply contracts are responsive to EMP provisions and mitigation and monitoring measures are adequately budgeted;	Procurement agent, design institute(s), PIU-ES, LIS-ES	Executing agency, PMO, ADB	Bidding documents, construction and equipment supply contracts

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
			• 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).			
	GRM	Not applicable	• Establish a GRM, appoint a GRM coordinator. • Brief and provide training to GRM access points PIU-ES, contractors). • Disclose GRM to affected people before construction begins.	PMO-SO, LIS-ES	Executing agency, ADB	Operational GRM, first EMR
	EMP training	Not applicable	Provide training to PMO, PIU and contractors on implementation and supervision of EMP, GRM, reporting, in compliance with training plan (Table EMP-5)	LIS-ES	PMO, ADB	Evidence of training provided, satisfaction survey of participants, First EMR
	Site-EMPs	Not applicable	Develop Site-EMPs, responding to all clauses and requirements of this EMP, and including sub-plans such as Spill Management Plan, Waste Management Plan, Temporary Traffic Management Plan, Occupational Health and Safety Plan, Soil Erosion Control Plan, and others.	Contractor	PMO-SO, PIU-ES, LIS-ES	Approved Site-EMPs, First EMR.
B. Construction Phase						
1. Soil	Soil erosion, revegetation	All construction sites, spoil disposal sites	• 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: ○ Minimize active open excavation areas; ○ Construct intercepting ditches and drains to prevent runoff entering construction sites, and divert runoff from sites to existing drainage;	Contractor	PIU-ES, CSC, LIS-ES	Quarterly inspection reports of PIU-ES, annual EMRs

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
			○ minimize soil excavation works in rainy seasons (April to September) ○ Dispose of surplus soil at approved spoil disposal site located 200m north of the Chengbi campus; ○ Stabilize all earthwork disturbance areas within maximum 14 days after earthworks have ceased; ○ Properly slope and re-vegetate disturbed surfaces			
	Soil contamination	All construction sites	• Store chemicals/hazardous products and waste on impermeable surfaces in secure, covered areas. • Remove all construction wastes from the site to approved spoil disposal sites. • Provide spill cleanup measures and equipment at each construction site. • Conduct training in emergency spill response procedures.	Contractor	PIU-ES, LIS-ES, CSC	Quarterly inspection reports of PIU-ES, annual EMRs
	Slope stabilization, landslide risk	Landslide prone slopes within campus	• Construct 40,600 m^2 of slope protection works within campus at designated areas in compliance comply with the PRC's Standard Drawings for Retaining Walls and Slope Protection of 04J008, including (i) design I–natural vegetation slope protection; (ii) design II–gravity retaining wall + vegetation slope protection, and (iii) design III–arched concrete-framed vegetation slope protection.	Contractor	PIU-ES, CSC, LIS-ES	Quarterly inspection reports of PIU-ES, annual EMRs
2. Surface and groundwater	Pollution of surface and groundwater resources	All construction sites, surface water within Chengbi campus	• Install water collection basins and sediment traps in all areas where construction equipment is washed. • Wastewater generated from the washing down of mixer trucks and drum mixers and similar equipment should wherever practicable be recycled. • Surplus wastewater and wastewater generated from building construction activities, including concreting, plastering,	Contractor	PIU-ES, LIS-ES, CSC	Quarterly inspection reports of PIU-ES, annual EMRs

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
			cleaning of works and similar activities should be discharged in to sewer after removal of solids in a silt removal facility. • 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. • Properly manage solid waste (see below).			
3. Solid waste	Construction and domestic wastes generated on construction sites	All construction sites	• Maximize reuse/recycling of construction and deconstruction wastes (e.g. iron, bricks, windows, doors, steel bars, etc.). • Provide appropriate waste storage containers for worker's construction and hazardous wastes. • Install confined storage points of solid wastes away from sensitive receptors, regularly haul to an approved disposal facility. • Use licensed contractors to remove wastes from the construction sites. • Prohibit burning of waste.	Contractor	PIU-ES, LIS-ES, CSC	Quarterly inspection reports of PIU-ES, annual EMRs
4. Noise	Noise from construction activities	All construction sites, nearby residential areas	• Maintain equipment and machinery in good working order; undertake regular equipment maintenance, ensure compliance with PRC standard of GB 12523-2011. • 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. • Install temporary anti-noise barriers to shield school buildings where non-compliance with Category II in	Contractor	PIU-ES, LIS-ES, CSC, BEMC	Quarterly inspection reports of PIU-ES; annual EMRs;

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
			Environmental Quality Standards for Noise (GB3096-2008) is anticipated and/or monitored. • Locate sites for concrete-mixing and similar activities at least 300 m from sensitive areas if without any mitigations. • Monitor noise within Baise University campus and at nearby sensitive areas at regular intervals (as defined in the monitoring plan). • Seek suggestions from Baise University management and potentially affected sensitive receptors to reduce noise annoyance. Disseminate information on procedure of handling complaints through the GRM.			
5. Ambient air	Dust generated during construction	All construction sites, including nearby residential areas	• Install perimeter fences at each site prior to construction. The fence shall be at least 2m high. • Spray water at least twice a day where fugitive dust is generated during deconstruction of old buildings and civil works. • Cover trucks carrying earth, sand or stone with tarps or other suitable cover to avoid spilling and dust generation. • Undertake regular air quality monitoring in around the campus in accordance with the monitoring plan. • Regularly consult students and staff as well as nearby residents to identify concerns, and implement additional dust control measures as necessary.	Contractor	PIU-ES, LIS-ES, CSC, BEMC	Quarterly inspection reports of PIU-ES; annual EMRs
	Air emissions from construction vehicles and machinery	All construction sites	• Store petroleum or other harmful materials in appropriate places and covering to minimize fugitive dust and emission. • Maintain vehicles and construction machineries to a high standard to ensure efficient running and fuel-burning and compliance with the PRC emission	Contractor	PIU-ES, LIS-ES, CSC	Quarterly inspection reports of PIU-ES; annual EMRs

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
			standards (GB18352-2005, GB17691-2005, GB11340-2005, GB2847-2005, and GB18285-2005).			
6. Physical cultural resources	Damage to known or unknown above- or below-ground cultural relics	All construction sites with excavation works	• Establish chance-find procedures for physical cultural resources. • 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.	Contractor	PIU-ES, LIS-ES, CSC, PMO-SO local cultural relics bureau	Quarterly inspection reports of PIU-ES, annual EMRs
7. Flora and fauna	Protection of vegetation, re-vegetation of disturbed areas, greening of sites	Chengbi campus	• Preserve existing vegetation where no construction activity is planned. • Remove trees or shrubs only as a last resort if they impinge directly on permanent structures. • Properly re-vegetate disturbed areas after completion of civil works.	Contractor	PIU-ES, LIS-ES, CSC	Annual EMRs
8. Health and safety	Occupational health and safety	All construction sites, work camps	• Appoint one staff to implement and supervise the implementation of the site-EMP and the performance of subcontractors. • 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. • Provide garbage receptacles at construction site. • Provide PPE for workers in accordance with relevant health and safety regulations. • 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. • Establish records management system that will store and maintain easily retrievable	Contractor, PIU-ES	PMO-SO, Baise Municipal center of disease control, LIS-ES	Inspection report of PIU-ES, report on number of incidents and complaints in annual EMRs

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
			records on occupational accidents, diseases, and incidents. • 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, implement 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. • 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.			
	Community health and safety	All construction sites, Baise University campus, plus nearby residential areas	• 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. • Designate staff members to control traffic during on-school and off-school hours.	Contractor, PIU-ES	LIS-ES; CSC, PMO-SO, local traffic police	Inspection report of environment specialist, report on number of incidents and complaints in annual EMRs

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
			• 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. • Return machinery to its overnight storage area/position. • 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.			
	Utilities provision interruption	All construction sites, nearby areas	• Assess potential disruption to services and identify risks before starting construction. • 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.	Contractor	PIU-ES, LIS-ES, CSC	Annual EMRs
9. Labor standards and rights	Social protection of workers	Not applicable	• 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. • Contractors shall maintain records of labor employment, including the name, ethnicity, age, gender, domicile, working time, and the payment of wages.	Contractor	ADB, LIS, PMO-SO	Project progress reports

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
10. Campus sustainability program		Baise University	Define a campus sustainability policy; develop a sustainability center with clear strategic objectives, sustainability programs, institutional structure, and terms of reference.	CSPE, Baise University	Executing agency, ADB, LIS	Campus sustainability policy defined, sustainability center operational
C. Operation Phase						
1. Wastewater	Inadequate wastewater disposal	Baise University	• Ensure completion of the associated onsite WWTP (2x1, 000m3/d) by 2017. • Properly operate and maintain the associated onsite WWTP to ensure both treatment load and effluent quality (Class-1A) meet the designed specifications. • Ensure connection of all new buildings to on-site WWTP and to municipal sewer system (backup system).	Baise University	Baise EPB, Baise Public Sanitation Bureau	First operation phase EMR
2. Solid waste	Inappropriate management of non-hazardous solid waste	Baise University's Chengbi campus	• Provide adequate solid waste collection facilities in all buildings and on the campus. • Promote segregation of waste through (i) provision of separate collection bins for paper, biodegradable waste, metallic waste, and other wastes; and (ii) provision of training and awareness raising for TVET staff and students. • Reach agreement with waste collection service provider(s) for different types of waste. • Regularly clean and disinfect waste collection facilities.	Baise University, CSPE	Baise EPB	First operation phase EMR
3. Operational noise	Inappropriate control of noise	Baise University's Chengbi campus	• Proper Installation and maintenance of noise and vibration control facilities on air conditioning and ventilation systems. • All noise-emitting machinery and equipment in the onsite WWTP will be installed in sound-proof housing within rooms. • Installation of ventilated sound insulation windows on the buildings along the boundaries of campus if needed.	Baise University	Baise EPB	First operation phase EMR
4. Indoor air	Caused by	Baise	• Ensure the decoration materials are water-	Baise University	Baise EPB	First operation

Impact Factor / Project Stage	Potential Impacts and/or Issues	Location	Mitigation measures	Implementation Agency	Supervision Agency	Monitoring Indicators
pollution	improper decoration of campus buildings	University's Chengbi campus	based or formaldehyde-free products. • Conduct indoor environmental monitoring after completion of decoration works; and take remedy measures if the monitoring data exceed the national standard of GB50325-2001.	(through sustainability center)		phase EMR
5. Laboratories	Risks to environment, health and safety from inadequate laboratory practices	Baise University's chemistry, physics, and biology training laboratories	• 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.[2] 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. • All laboratories must be equipped with personal protective equipment and emergency equipment in compliance with PRC health and safety regulations.	Baise University (through Sustainability Center)	Baise EPB	First operation phase EMR
6. Greening and landscaping	Low vegetation survival rate, poor surface water quality	Baise University's Chengbi campus	• Regular inspection of campus vegetation. • Regular monitoring of surface water quality in the manmade pond system. • Avoid use of pesticides and as far as possible.	Baise University (through sustainability center)	Baise EPB, Baise Forestry Bureau	First operation phase EMR
7. Health and safety	Campus health and safety	TVET classrooms, workshops, outdoor areas	• Ensure compliance with relevant health and safety regulations pertaining to ventilation, indoor air quality, lighting, noise, fire escape, etc. • Enforce campus traffic management plan, ensure protection and promote non-motorized transport modes. • Establish preparedness plan and operation plan under emergency conditions, such as fire, flood, earthquake, wind, storm, water contamination, epidemic, air contamination, infestation, explosion etc.	Baise University (through sustainability center)	Executing agency, occupational health authorities	First operation phase EMR

[2] 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: http://www.cpsc.gov//PageFiles/122344/NIOSH2007107.pdf.

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^2 = square meter, m^3 = 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

17. 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.

18. 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).

19. 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).

Table EMP-3: Environmental Monitoring and Inspection Plan

Environmental Media/Issue	Location, Parameters, and Monitoring Frequency	Responsibility and Frequency
Pre-construction Phase		
Project readiness (internal monitoring)	**Method:** Review of PMO, implementing agency, PIU, and contractors' readiness to implement the project and mitigation measures based on assessment of project readiness indicators. **Parameters:** Readiness indicators **(Table EMP-4)**	LIS-ES, once before construction
Construction Phase		
Soil erosion and contamination (internal monitoring)	**Method and location:** Visual inspection of the construction sites. **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).	Once every 10 days during peak construction period by PIU-ES, then monthly, and yearly by LIS-ES
Solid waste and wastewater management (internal monitoring)	**Method and location:** Visual inspection of construction sites **Parameters:** (i) adequacy of solid and liquid waste management, storage and containment system, and (ii) presence of solid waste dumps and waste fires (based on site inspection checklist, **Appendix 2**).	PIU-ES – once every 10 days during peak construction period, then monthly, and yearly by LIS-ES
Construction site health and safety (internal monitoring)	**Method and location:** Visual inspection and interviews with construction workers and contractors at construction sites. **Parameters:** Site inspection checklist (**Appendix 2**).	Once every 10 days during peak construction period by PIU-ES, then monthly, and yearly by LIS-ES.
Community health and safety	**Method and location:** Visual inspection of the construction sites, informal interviews with TVET staff and	Once every 10 days during peak construction period by

Environmental Media/Issue	Location, Parameters, and Monitoring Frequency	Responsibility and Frequency
(compliance monitoring)	students, and nearby residents. **Parameters:** (i) adequacy of construction site signage and fencing, (ii) adequacy of temporary noise mitigation measures, (iii) accidents involving public and workers; (iv) emergencies and responses, and (v) public complaints about noise, air pollution, construction site safety, and localized flooding.	PIU-ES, then monthly, and yearly by LIS-ES.
Air quality (compliance monitoring)	**Method and location:** Air quality monitoring, at least four points in the campus, around construction site, and at boundaries of sensitive receptors. **Parameters:** TSP, PM_{10}	Semiannually by Baise EMC
Noise (compliance monitoring)	**Method and location:** At four points at boundary of construction site, and at least three points around at boundaries of sensitive receptors. **Parameters:** Leq dB(A)	Semiannually by Baise EMC
Surface water (compliance monitoring)	**Method and location:** At two points in the artificial lake and stream in the campus. **Parameters**: NH_3-N, SS, CODcr, coliform.	Semiannually by Baise EMC
Construction Completion Phase		
Construction completion acceptance (acceptance monitoring)	**Method:** For each civil work contract, construction completion acceptance to be conducted by acceptance committee. For the project, EIA completion acceptance to be conducted by Baise EPB. **Parameters:** In accordance with national completion acceptance regulations (compliance with relevant building regulations and codes on building safety, energy-efficiency, and others) and EIA regulation.	Acceptance committee (including Baise University, LDI, Baise Quality Inspection Station, Baise Construction Bureau, Baise EPB) Baise EPB for EIA completion acceptance.
Photovoltaic Commissioning (acceptance monitoring)	**Method:** Commissioning tests by an independent group of experts, prior to final payment of contract, within 2 months of installation completion. **Parameters:** In accordance with national completion acceptance regulations, including but not limited to: checks of the main components (communications, meteorological station, modules, wiring, inverters, interconnection, batteries, etc.), open circuit voltage, and operating current and 30-day operating performance test.	Acceptance committee (including licensed PV experts, Baise University, LDI, Baise Quality Inspection Station, Baise Construction Bureau, Baise EPB)
Operation Phase		
Campus management (general) (internal monitoring)	**Method and location:** New Chengbi campus, environment audit to be arranged by ADB OD in consultation with local EPB and Baise University. **Parameters:** DMF indicators; campus sustainability strategy; sustainability center; energy consumption.	ADB, local EPB-once after one year of operation (during review mission), before PCR is issued. Baise University sustainability center (to include comprehensive campus management system)
Surface water (internal monitoring)	**Method and location:** at two points in the artificial lake and stream in the campus. **Parameters:** NH_3-N, TP, SS, CODcr, coliform.	Baise University sustainability center, with support of Baise EPB

Environmental Media/Issue	Location, Parameters, and Monitoring Frequency	Responsibility and Frequency
Wastewater treatment plant (internal and compliance monitoring)	**Method and location:** Sampling of WWTP influent and effluent (2 onsite WWTPs), assessment of compliance with Integrated Wastewater Discharge Standard GB 8978-1996; noise and odor monitoring **Parameters:** COD, BOD, NH4-N, TN, TP, SS, E. coli, dB(A), H2S, SO2	Internal monitoring: Baise University sustainability center (with involvement of students), once a week, or as defined in the Waste management policy. Compliance monitoring: Baise EPB, periodically (as regulated)
Solid waste (internal monitoring)	**Method and location:** Visual inspection of waste collection and transfer station within campus. **Parameters:** Waste quantity, presence of disease vectors, malodorous gases, littering.	Internal monitoring: Baise University sustainability center (with involvement of students), once a week, or as defined in the waste management policy.
Indoor air quality (compliance monitoring)	**Method and location:** Air quality monitoring in classrooms, dormitories, laboratories, and training facilities. **Parameters:** As defined in national standard of GB50325-2001	Compliance monitoring: Baise EPB, periodically (as regulated)
Photovoltaic system (Internal monitoring)	**Method and location:** Regular visual inspection of photovoltaic system components (communications, meteorological station, modules, wiring, inverters, interconnection, batteries, etc.); PV system monitoring system (centralized management and information center). **Parameters:** Solar radiation, various weather parameters, electricity generation from each power conditioner, battery status, etc.	Internal monitoring: Baise University sustainability center (with involvement of students), 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.

20. **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.

Table EMP-4: Project Readiness Assessment Indicators

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	Yes	No
Public involvement effectiveness	Meaningful consultation completed; GRM established with entry points	Yes	No
Environmental supervision in place	LIS-ES is in place, PIU-ES appointed, PMO-SO appointed	Yes	No
Bidding documents and contracts with environmental 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	Yes	No

Indicator	Criteria	Assessment	
	implementation according to the financial plan.		

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

21. 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.

22. **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.

23. **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.

Table EMP-5: Training Program

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

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

24. **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.

25. 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.

26. **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.

Table EMP-6: Reporting Requirements

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

27. 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

28. 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).

29. 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.

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

Phase	Main activities and measures	Budget (CNY10,000)
Construction Phase	**Soil and water conservation**, 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
	Construction and domestic wastewater management (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
	Construction site environment, health and safety (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 year	200
	Indoor air quality control measures (avoid use of VOC emitting materials)	13
	Kitchen and laboratory design (Installation of kitchen hoods, and ventilation & purification system; laboratory hoods, and lab waste gas treatment system)	65
	Noise mitigation (building design, including installation of noise and vibration control facilities and sound insulation windows)	70
	EMP training (twice in the first 2 year of construction)	1
	Construction phase environment compliance monitoring (air, surface water, noise)	9
	Construction phase environment internal monitoring/inspection (soil erosion and contamination, solid waste and wastewater management, community health and safety, construction site safety)	10
	Total	**2,000**
Acceptance Phase	**Environmental acceptance audit** (check the configuration, installation and operation performance of the environmental protection facilities against the related standards and codes. Construction completion audit, including building safety and energy-efficiency audit.	6
	Indoor environmental monitoring and mitigation after completion of decoration works; and take remedy measures if the monitoring data exceed the national standard of GB50325-2001	8
	Photovoltaic commissioning by an independent group of experts, prior to final payment of contract, within 2 months of installation completion, in accordance with national completion acceptance regulations	6
	Total	**20**
Operation Phase	**General campus management** (landscaping, solid waste collection and removal, wastewater treatment, traffic management, etc.)	50/a
	Environment monitoring/inspection (wastewater effluent quality, surface water quality, air quality, noise, solid waste amount, re-vegetation survival rate, laboratory safety, campus traffic management, emergency preparedness and response, etc.)	4/a
	Photovoltaic system operation and monitoring (regular visual inspection of photovoltaic system components (communications, meteorological station, modules, wiring, inverters, interconnection, batteries, etc.); PV system	20/a

Phase	Main activities and measures	Budget (CNY10,000)
	monitoring system (centralized management and information center)	
	Training for campus sustainability policy and sustainability center	1/a
	Total	**75/a**

EMP = environmental management plan
Source: Domestic environmental impact statement report and project preparatory technical assistance consultants.

30. 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/construction Name: _____
Site Location: _____
Construction stage: _____
Inspection Date: _____
Inspection Time: _____
Weather: _____
Inspected by: _____

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed 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. Has 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?				
7. Are disturbed areas stabilized after earthworks have ceased, and re-vegetated?				
8. Are chemicals/hazardous products and waste stored on impermeable surfaces in secure, covered areas?				
9. Is there evidence of oil spillage?				
10. Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?				
11. Are chemicals stored and labeled properly?				
Air Quality Control				
12. Are construction sites regularly watered?				
13. Are stockpiles of dusty materials covered or watered and 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				

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
University, students, as well as nearby residents to identify concerns?				
18. Was air quality monitoring conducted since the last inspection? If yes, present results. If no, indicate date of next monitoring campaign.				
Noise				
19. Is there evidence of excessive noise? If yes, describe location and equipment.				
20. Does the contractor undertake regular equipment maintenance, ensure compliance with relevant PRC 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 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 inspection? If yes, present results. If no, indicate date of next monitoring campaign.				
27. Does contractor regularly consult with PIU, Baise University, students as well as nearby residents to identify concerns related to noise?				
Surface Water Pollution				
28. Did the contractor develop a spill management plan?				
29. Are wastewater treatment systems being used and 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?				
Solid Waste Management				
32. Is the site kept clean and tidy? (e.g. litter free, good housekeeping)				
33. Are separate chutes used for inert and non- inert wastes?				
34. Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?				
35. Are construction wastes / recyclable wastes and general refuse removed off site regularly?				
36. Are chemical wastes, if any, collected and disposed of properly by licensed collectors?				
Health and Safety				
37. Is safe supply of clean water and an adequate number of latrines provided for workers?				
38. Are garbage receptacles provided at construction site?				
39. Is PPE provided for workers in accordance with relevant 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				

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions)
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 awareness on safety issues?				
42. Are all construction sites made secure, discouraging access through appropriate fencing?				
43. Are traffic control measures (speed control, access control) applied?				
44. Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed?				
Vegetation				
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?				
Physical Cultural Resources				
47. Are they any chance found relics? If yes, ensure appropriate measures taken to preserve them.				
Others				
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:

(i) 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

Questionnaire for the Management of Baise University (targeted by the ADB Project) 亚行项目百色学院管理工作问卷调查表

Information on school campus

1. What is the ***name and location of your school/institutions***?
您学校/机构的名称和位置？
Response 回答: 百色学院，百色市中山二路 21 号

2. How many ***students and school personnel*** are currently staying on this campus?
目前在校的学生和教职员工有多少？
Students: 10491 *学生*
Faculty staff: 497 *教师*
Admin. staff: 83 *行政人员*
O&M staff: 66 *运营人员*
Others: 302 *(specify)* 临时聘请人员（司机、宿舍管理员、食堂工作人员、保洁人员等） *其他 具体描述*

3. Do you know the ***size of the school campus*** and the building area?
您知道学校校园面积和建筑面积吗？
Size of campus: _____ *mu 亩* _√_ *Don't know 不知道*
Number of buildings: _____ __√__ *Don't know 不知道*
建筑物的数量
Total floor area: _____ *m2 平方米* _√_ *Don't know 不知道*
总建筑面积

Water, Wastewater, Solid Waste, Energy 水，污水，固体废弃物，能源

4. Do you know how much **water, energy, waste and wastewater** you consume/produce every year?您知道每年的水，能源，废物和废水的消耗/生产的数量是多大吗？

Water consumption: _____ *m3 per year 立方米每年* _√_ *Don't know 不知道*
用水量
Energy consumption: _____ *kWh per year 千瓦时每年* __√__ *Don't know 不知道*
能源消耗
Non-hazardous waste: _____ *kg per year 公斤每年* __√__ *Don't know 不知道*
无害废料
Hazardous waste: _____ *kg per year 公斤每年* __√__ *Don't know 不知道*
有害垃圾
Wastewater: _____ *m3 per year 立方米每年* __√__ *Don't know 不知道*
废水

5. Do you know by whom and where ***solid waste*** is being transported and discharged?
你是否知道固体废弃物由谁在哪里进行运送和排放？

Who collects your waste: _____ *(organization) (组织)* __√__ *Don't know 不知道*
您的废弃物由谁收集：
Where is it disposed: _____ *(location) (地点)* ___√_ *Don't know 不知道*
在哪里进行处理
Satisfied with service: _____ *Yes 是* __√__ *No 否*
是否满意其服务

6. Do you where your ***wastewater*** is being transported, treated and discharged?
您是否知道学校的废水往何处输送、处理和排放？

Discharged to nearby river: _____
排放到附近的河流
Treated in on-site septic tank: ___√_____
在现场化粪池处理
Treated in central treatment plant: _____
中央处理厂处理
Other (specify): _____
其他（详细说明）
Don't know: _____
不知道

7. Do you have an **energy conservation policy**? If yes, what are specific measures to 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哪些？

Response 回答：：有，如安装了节能水表、节能电表、节能灯

8. Do you have a **waste management policy** promoting waste reduction, reuse and recycling? If yes, what are specific measures to reduce, reuse and recycle waste?
是否有废物管理的政策以减少废物量，促进废物再利用和回收？如有，那么在减少废物量，促进再利用和回收方面有哪些具体措施？
Response 回答:不清楚

Environment, Health and Safety System

9. Does you campus or school have an ***environment, health and safety policy***? If yes, please shortly describe the main component of the policy.您们学校是否有环境，卫生和安全方面的政策？如有，请简要描述其主要组成部分。

Response 回答: 有

10. Do you have established ***procedures for communicating*** relevant environment, health and safety requirements and provisions to school students and employees?
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？
__√____ *Yes 是* ___ *No 否*

11. Do you have an ***environment management system*** for the school or campus? If yes, please shortly describe the system.学校是否有环境管理体系？如有，请简要描述。

Response 回答:不清楚

12. Are ***roles, responsibilities and authorities***, including the appointment of a specific manager in charge of environment management, health and safety, clearly defined?
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？
Response 回答: 有

13. Who is ***responsible for the following activities*** on your campus (indicate number of full time 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: _____
室内空气质量控制
b. Wastewater collection and sewer maintenance: _____
废水收集和污水管道维护
c. Solid waste collection and maintenance: _____
固体废物收集和维护
d. Hazardous waste management: _____
有害废物管理
e. Laboratory safety: _____
实验室安全
f. Campus maintenance (outdoor): _____
校园维护（室外）
g. School building maintenance (indoor): _____
学校建筑物维护（室内）
h. Fire safety: _____
消防安全
i. First aid: _____
急救
j. Water supply safety and quality: _____
供水安全和质量
k. Emergency response: _____
应急响应
l. Others (please specify): _____
其他（请描述）

14. Have you developed, implemented and documented ***operating procedures*** for activities associated with environment management: 在涉及环境管理的活动方面是否制定，实施并形成书面化的操作规程？

a. Non-hazardous solid waste collection: ___ *Yes 是* ___√___ *No 否*
a.无害的固体废弃物收集：
b. Hazardous solid waste collection: ___√___ *Yes 是* ___ *No 否*
b.有害的固体废弃物收集
c. Laboratory safety: ___√___ *Yes 是* ___ *No 否*
c.实验室安全
d. Water supply quality assurance: ___√___ *Yes 是* ___ *No 否*
d 供水质量保证
e. Wastewater collection and treatment: __√____ *Yes 是* ___ *No 否*
e 污水收集与处理
f. Safety plans for laboratories: __√____ *Yes 是* ___ *No 否*
f 实验室安全计划
g. Hazardous waste management: __√____ *Yes 是* ___ *No 否*
g 有害废弃物管理
h. Indoor air quality assurance: __√____ *Yes 是* ___ *No 否*
h 室内空气质量保证
Notes 备注:

15. Do you have a ***fire safety plan*** for your school? 你们学校有消防安全计划吗？
__√____ *Yes 是* ___ *No 否*
Notes 备注:

16. Do you have established ***emergency identification, preparedness and response*** 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？
__√____ *Yes 是* ___ *No 否*
Notes 备注:

Capacity Building 能力建设

17. Are all employees/faculty/students whose work involves significant environment and safety aspects ***competent by training***, experience and/or education? 通过培训，经验积累和/或教育，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？
_√__ *Yes 是* ___ *No 否*
Notes 备注:

18. Would you be ***interested*** to strengthen the environment, health and safety management 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系是否感兴趣？
Response 回答: 不感兴趣

19. Which aspects of environment, health and safety in your school/institution do you think 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步改善？

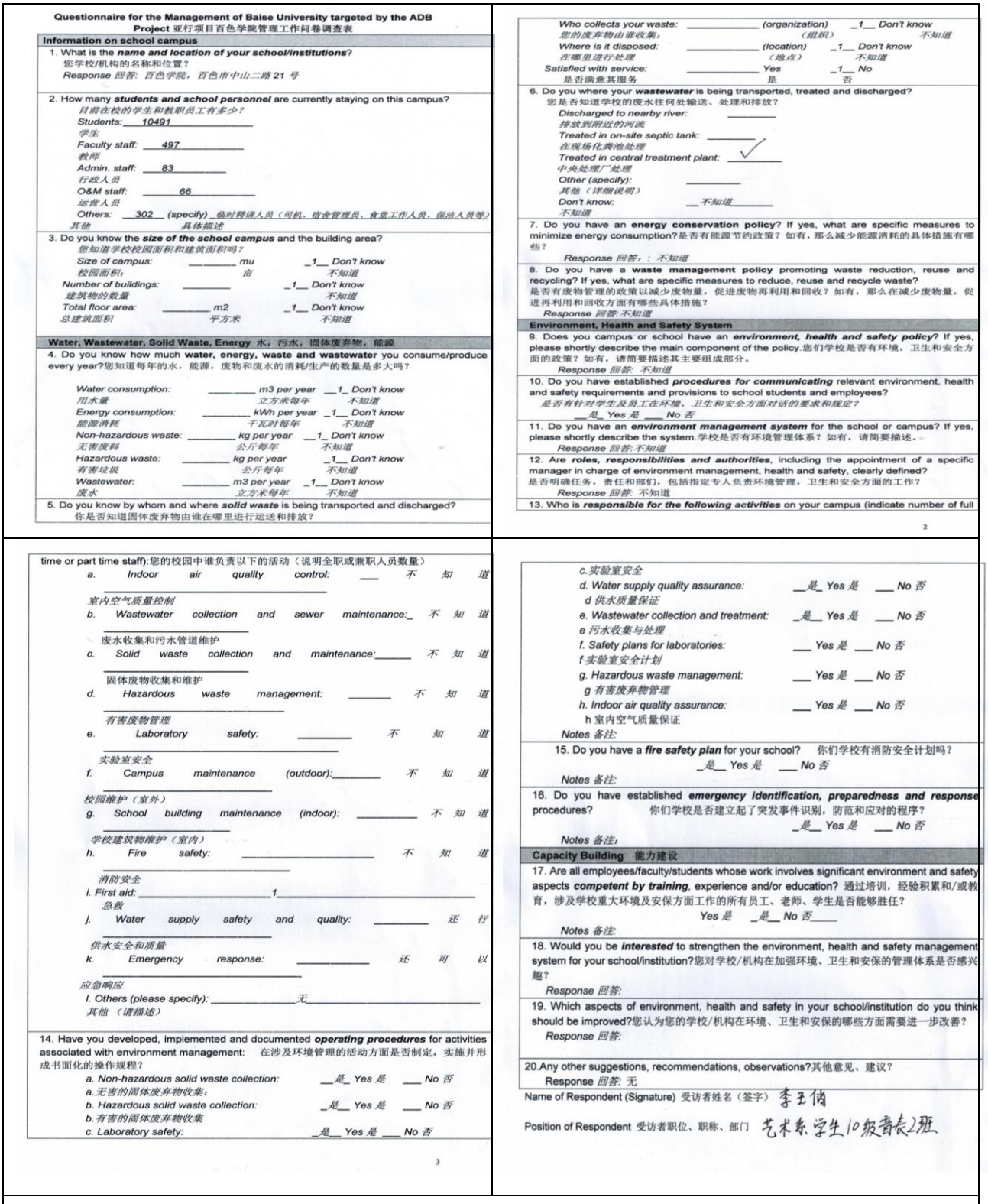
Response 回答:: 将政策落实到实处

20.Any other suggestions, recommendations, observations?其他意见、建议？
Response *回答:*: 无

Name of Respondent (Signature) 受访者姓名（签字）黄宝利

Position of Respondent 受访者职位、职称、部门 百色学院行政科科长

A Teacher's Response to the Environmental Management questionary Survey



Questionnaire for the Management of Baise University targeted by the ADB Project 亚行项目百色学院管理工作问卷调查表

Information on school campus

1. What is the ***name and location of your school/institutions***?
您学校/机构的名称和位置？
Response 回答: 百色学院，百色市中山二路 21 号

2. How many ***students and school personnel*** are currently staying on this campus?
目前在校的学生和教职员工有多少？
Students: 10491
学生
Faculty staff: 497
教师
Admin. staff: 83
行政人员
O&M staff: 66
运营人员
Others: 302 *(specify)* 临时聘请人员（司机、宿舍管理员、食堂工作人员、保洁人员等）
其他 具体描述

3. Do you know the ***size of the school campus*** and the building area?
您知道学校校园面积和建筑面积吗？
Size of campus: _____ *mu* _1__ *Don't know*
校园面积： *亩* *不知道*
Number of buildings: _____ _1__ *Don't know*
建筑物的数量 *不知道*
Total floor area: _____ *m2* _1__ *Don't know*
总建筑面积 *平方米* *不知道*

Water, Wastewater, Solid Waste, Energy 水，污水，固体废弃物，能源

4. Do you know how much **water, energy, waste and wastewater** you consume/produce every year?您知道每年的水，能源，废物和废水的消耗/生产的数量是多大吗？

Water consumption: _____ *m3 per year* __1_ *Don't know*
用水量 *立方米每年* *不知道*
Energy consumption: _____ *kWh per year* _1__ *Don't know*
能源消耗 *千瓦时每年* *不知道*
Non-hazardous waste: _____ *kg per year* __1_ *Don't know*
无害废料 *公斤每年* *不知道*
Hazardous waste: _____ *kg per year* _1__ *Don't know*
有害垃圾 *公斤每年* *不知道*
Wastewater: _____ *m3 per year* _1__ *Don't know*
废水 *立方米每年* *不知道*

5. Do you know by whom and where ***solid waste*** is being transported and discharged?
你是否知道固体废弃物由谁在哪里进行运送和排放？

Who collects your waste: _____ *(organization)* _1__ *Don't know*
您的废弃物由谁收集， *（组织）* *不知道*
Where is it disposed: _____ *(location)* _1__ *Don't know*
在哪里进行处理 *（地点）* *不知道*
Satisfied with service: _____ *Yes* _1__ *No*
是否满意其服务 *是* *否*

6. Do you where your ***wastewater*** is being transported, treated and discharged?
您是否知道学校的废水往何处输送、处理和排放？
Discharged to nearby river: _____
排放到附近的河流
Treated in on-site septic tank: _____
在现场化粪池处理
Treated in central treatment plant: ✓
中央处理厂处理
Other (specify): _____
其他（详细说明）
Don't know: __不知道_____
不知道

7. Do you have an **energy conservation policy**? If yes, what are specific measures to 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哪些？
Response 回答:：不知道

8. Do you have a **waste management policy** promoting waste reduction, reuse and recycling? If yes, what are specific measures to reduce, reuse and recycle waste?
是否有废物管理的政策以减少废物量，促进废物再利用和回收？如有，那么在减少废物量，促进再利用和回收方面有哪些具体措施？
Response 回答:不知道

Environment, Health and Safety System

9. Does you campus or school have an ***environment, health and safety policy***? If yes, please shortly describe the main component of the policy.您们学校是否有环境，卫生和安全方面的政策？如有，请简要描述其主要组成部分。
Response 回答: 不知道

10. Do you have established ***procedures for communicating*** relevant environment, health and safety requirements and provisions to school students and employees?
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？
__是_ Yes 是 ___ No 否

11. Do you have an ***environment management system*** for the school or campus? If yes, please shortly describe the system.学校是否有环境管理体系？如有，请简要描述。
Response 回答:不知道

12. Are ***roles, responsibilities and authorities***, including the appointment of a specific manager in charge of environment management, health and safety, clearly defined?
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？
Response 回答: 不知道

13. Who is ***responsible for the following activities*** on your campus (indicate number of full

2

time 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 知 道*
室内空气质量控制
b. *Wastewater collection and sewer maintenance:*_ *不 知 道*
废水收集和污水管道维护
c. *Solid waste collection and maintenance:*_____ *不 知 道*
固体废物收集和维护
d. *Hazardous waste management:* _____ *不 知 道*
有害废物管理
e. *Laboratory safety:* _____ *不 知 道*
实验室安全
f. *Campus maintenance (outdoor):*_____ *不 知 道*
校园维护（室外）
g. *School building maintenance (indoor):* _____ *不 知 道*
学校建筑物维护（室内）
h. *Fire safety:* _____ *不 知 道*
消防安全
i. *First aid:* _____1_____
急救
j. *Water supply safety and quality:* _____ *还 行*
供水安全和质量
k. *Emergency response:* _____ *还 可 以*
应急响应
l. *Others (please specify):* _____无_____
其他 （请描述）

14. Have you developed, implemented and documented ***operating procedures*** for activities associated with environment management: 在涉及环境管理的活动方面是否制定，实施并形成书面化的操作规程？
a. Non-hazardous solid waste collection: *__是_ Yes 是 ___ No 否*
a.无害的固体废弃物收集：
b. Hazardous solid waste collection: *_是__ Yes 是 ___ No 否*
b.有害的固体废弃物收集
c. Laboratory safety: *_是__ Yes 是 ___ No 否*

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c.实验室安全
d. Water supply quality assurance: *__是_ Yes 是 ___ No 否*
d 供水质量保证
e. Wastewater collection and treatment: *_是__ Yes 是 ___ No 否*
e 污水收集与处理
f. Safety plans for laboratories: *___ Yes 是 ___ No 否*
f 实验室安全计划
g. Hazardous waste management: *___ Yes 是 ___ No 否*
g 有害废弃物管理
h. Indoor air quality assurance: *___ Yes 是 ___ No 否*
h 室内空气质量保证
Notes 备注:

15. Do you have a ***fire safety plan*** for your school? 你们学校有消防安全计划吗？
_是__ Yes 是 ___ No 否
Notes 备注:

16. Do you have established ***emergency identification, preparedness and response*** 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
Notes 备注:

Capacity Building 能力建设

17. Are all employees/faculty/students whose work involves significant environment and safety aspects ***competent by training***, experience and/or education? 通过培训，经验积累和/或教育，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？
Yes 是 _是__ No 否____
Notes 备注:

18. Would you be ***interested*** to strengthen the environment, health and safety management 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系是否感兴趣？
Response 回答:

19. Which aspects of environment, health and safety in your school/institution do you think 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步改善？
Response 回答:

20.Any other suggestions, recommendations, observations?其他意见、建议？
Response 回答: 无

Name of Respondent (Signature) 受访者姓名（签字） 李玉倩

Position of Respondent 受访者职位、职称、部门 艺术系学生10级音表2班

A Student's Response to the Environmental Management Qestionary Survey

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-the-trainer 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:

(i) 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

l. 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.[1] 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

[1] 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.

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 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.

Table 1: Summary of Technical Vocational Education and Training Components

Output and/or Component	Description
Output 1: TVET Quality Improved and Capacity Developed	
1.1 Multilevel TVET strategic 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 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. 1.2.2 Develop competency based approach to curriculum, instruction, and assessment (in seven priority areas and across designated levels, majors and courses). 1.2.3 Pilot SVS, vocational college, and undergraduate priority sectors, majors, and courses (as agreed) with linkages (pathways) established. 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 pedagogy reform	1.3.1 Develop Baise University policy and guidelines for staff movement 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). 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). 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).

Output and/or Component	Description
1.4 Staff development	1.4.1 Revise and upgrade staff training plans to include training in the Baise University MLT system. 1.4.2 Develop strategy to upgrade staff to attain dual qualifications at all levels (SVS, vocational college, and undergraduate). 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). 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 TVET institutions where there is good practice related to priority areas.
Output 3: TVET Innovation and Relevance Promoted	
3.1 School-industry partnerships	3.1.1 Organize for staff, industry visits, job assignments, and training 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. 3.1.4 Design and implement further outreach training programs for migrant workers and communities. 3.1.5 Design and implement an entrepreneurship incubation program.
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 partnership development in regional cooperation. 3.2.3 Explore opportunities for consolidation of cross-border language education programs. 3.2.4 Explore expanded cooperation opportunities with University of Thailand. 3.2.5 Introduce APEC standards in related majors to enhance regional cooperation opportunities.
3.3 Research	3.3.1 Develop school-industry partnerships regulation and policy development at different levels of provincial, BMG, and Baise University. 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.

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 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:

Output and/or Component	Activities
	• analysis to support Baise University admission and placement office systems on student enrollments, graduation, placement and employment; • improve tracer studies (for all levels); • develop links with other institutions' data gathering e.g. HRSSB Labor Market system, and initiate an industry survey system; and • prepare annual reports. 1.1.5 Develop a communications and outreach plan • Conduct public awareness programs for student recruitment. • Demonstrate increased opportunities available for students under an MLT system. • Provide details on school-industry partnerships and opportunities for regional cooperation activities.
1.2 Curriculum development	1.2.1 Develop competency standards (in five priority areas across different institutional and qualifications levels) in: • preschool education, • design, • aluminum processing, • 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 priority sectors, majors, and courses (as agreed) with linkages (pathways) established : 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 pedagogy reform	1.3.1 Develop Baise University policy and guidelines for staff movement 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). 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). 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 MLT system. 1.4.2 Develop strategy to upgrade staff to attain dual qualifications at all levels (SVS, vocational college, and undergraduate). 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). 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 TVET institutions where there is good practice related to priority areas.
Output 3: TVET Innovation and Relevance Promoted	
3.1 School-industry partnerships	3.1.1 Organize, for staff, industry visits, job assignments, and training attachments which include specific performance requirements and outcomes.

Output and/or Component	Activities
	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: • professional steering group at the faculty level (including industry), • school-industry partnership group to support the priority majors, and • establish school-industry committee at Baise University management level. 3.1.4 Design and implement further outreach training programs for migrant workers and communities. 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 partnership development in regional cooperation; 3.2.3 Explore opportunities for consolidation of cross-border language education programs; 3.2.4 Explore expanded cooperation opportunities with University of Thailand; 3.2.5 Introduce APEC standards in related majors to enhance regional cooperation opportunities
3.3 Research	3.3.1 Develop school-industry partnerships regulation and policy development at different levels: • Provincial, • BMG, and • Baise University. 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.

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

9. These two capacity building outputs are focused on developing a transformed MLT 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.[2] 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] 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.

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 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.[3] 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

[3] 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).

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 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[4] 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,[5] 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

[4] Less than 10% of BVS staff and approximately 14% of Baise University staff are dual qualified teachers.
[5] The sector assessment provides an analysis of staff responses, including curriculum, instruction and assessment related information.

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,
(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

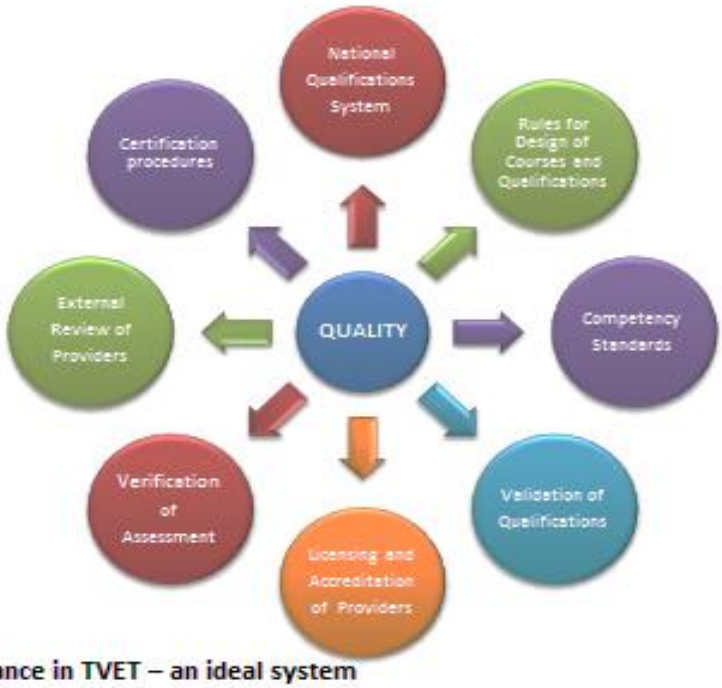
33. While entrepreneurship and employability require different knowledge, skills and attitudes, they are both areas that were frequently mentioned by both teaching staff and industry representatives, as requiring more attention through specific curriculum activities. The Guidelines on Local Governments' 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 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



Quality Assurance in TVET – an ideal system

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 Activities-based Instruction and Assessment)

37. The introduction of a CBA requires different types of teacher pre-service and in-service 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.[6] 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

[6] 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.

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.

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.[7] 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 both male and female students who

[7] Adult education classes are also provided to cater for the large number of migrant workers who lack literacy and numeracy skills.

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

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

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

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

Table 1: Summary of Overall Planned Campus Facilities

No.	Name	Foot Area (m^2)	Building Area (m^2)	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	II

[1] Chinese unit of measurement.

No.	Name	Foot Area (m^2)	Building Area (m^2)	Story	Remark
4	Public experimental center	4,700	22,190	6	
5	Public teaching center	3,113	20,480	6	II
6	Administration building	3,658	10,000	9	
7	Business school building	1,575	8,000	6	II
8	Politics and law department building	1,820	8,000	6	II
9	Physics, electronics, and math building	2,970	17,800	6	II
10	Chemistry and biology department building	2,970	17,800	6	II
11	Art and science education building	3,500	16,200	6	II
12	Chinese and foreign language department building	3,200	16,150	6	II
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	II
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	II
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.

Table 2: Phase II Buildings and Facilities

No.	Name	Foot Area (m^2)	Building Area (m^2)	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 = 3,860,000 kwh			
	Outdoor sports facilities	basketball, badminton, tennis courts			
	Slope protection and retaining walls	Area = 40,606 m^2			
	Teaching and training equipment				
	Total =	**32,877**	**160,693**		

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

Table 3: Summary for Teaching and Lab Equipment

No.	Description	Unit	Quantity	Unit Price (10k CNY)	Cost (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	

No.	Description	Unit	Quantity	Unit Price (10k CNY)	Cost (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 meters per day; the system will reduce chemical oxygen demand discharge of about 75 ton per year and saving water for about 6 million cubic meters.

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.