

# Facility Administration Manual

Project Number: 50050-002

Loan Number: {LXXXX}

October 2016

Multitranche Financing Facility  
People's Republic of China: Guangxi Regional  
Cooperation and Integration Promotion Investment  
Program

## ABBREVIATIONS

ADB	–	Asian Development Bank
BCP	–	border crossing point
BDS	–	business development services
BOCOM	–	Guangxi Branch of Bank of Communications
CAREC	–	Central Asia Regional Economic Cooperation
BEZs	–	border economic zones
DRC	–	Development and Reform Commission
GMS	–	Greater Mekong Subregion
GPMO	–	Government of Guangxi Zhuang Autonomous Region through Guangxi Foreign Loans Project Management Office
MOU	–	memorandum of understanding
MFF	–	multi-tranche financing facility
NSEC	–	North-South Economic Corridor
OCR	–	ordinary capital resources
PRC	–	People's Republic of China
PIE	–	project implementing entity
PIU	–	project implementation unit
PMO	–	project management office
PPTA	–	project preparatory technical assistance
RCI	–	regional cooperation and integration
REA	–	revolving escrow account
SMEs	–	small and medium-sized enterprises
TA	–	technical assistance

## CONTENTS

I.	PROJECT DESCRIPTION	1
II.	IMPLEMENTATION PLANS	4
	A. Project Readiness Activities	4
	B. Implementation Plan	5
III.	PROGRAM MANAGEMENT ARRANGEMENTS	6
	A. Program Implementation Organizations: Roles and Responsibilities	6
	B. Key Persons Involved in Implementation	16
IV.	COSTS AND FINANCING	18
	A. Cost Estimates Preparation and Revisions	18
	B. Key Assumptions	19
	C. Detailed Cost Estimates by Expenditure Category	20
	D. Allocation and Withdrawal of Investment Loan Proceeds – Loan 1	21
	E. Allocation and Withdrawal of Financial Intermediation Loan Proceeds – Loan 2	21
	F. Detailed Cost Estimates by Financier	22
	G. Detailed Cost Estimates by Outputs and/or Components	23
	H. Detailed Cost Estimates by Year	24
	I. Contract and Disbursement S-Curve	25
V.	FINANCIAL MANAGEMENT	27
	A. Financial Management Assessment	27
	B. Disbursement Arrangements for ADB Funds	29
	C. Accounting	32
	D. Auditing and Public Disclosure	32
VI.	PROCUREMENT AND CONSULTING SERVICES	34
	A. Advance Contracting and Retroactive Financing	34
	B. Procurement of Goods, Works, and Consulting Services	34
	C. Procurement Plan	35
	D. Consultant's Terms of Reference	44
VII.	SAFEGUARDS	45
VIII.	GENDER AND SOCIAL DIMENSIONS	50
IX.	PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION	55
	A. Project Design and Monitoring Framework	55
	B. Monitoring	58
	C. Evaluation	60
	D. Reporting	60
	E. Stakeholder Communication Strategy	62
X.	ANTICORRUPTION POLICY	63
XI.	ACCOUNTABILITY MECHANISM	63
XII.	RECORD OF CHANGES TO THE FACILITY ADMINISTRATION MANUAL	65

## **ATTACHMENTS**

1. Tranche 1 Subproject Summaries
2. Environmental Assessment and Review Framework
3. Resettlement Framework
4. Indigenous Peoples Planning Framework
5. Initial Environmental Examination and Environmental Management Plan
6. Environmental and Social Management System Arrangement for Financial Intermediary
7. Template for Annual Environmental Monitoring Report
8. Risk Assessment and Risk Management Plan
9. Indicative Pipeline of Projects for Tranches 2 and 3 of the Investment Program

### **Facility Administration Manual Purpose and Process**

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

The executing agency and the implementing agencies are wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation including compliance by the executing and implementing agencies 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 FAM and ensure consistency with the Legal Agreements. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the FAM and the Loan Agreement, the provisions of the Legal Agreements shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), 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 FAM.



## I. PROJECT DESCRIPTION

1. The proposed Guangxi Regional Cooperation and Integration Promotion Investment Program will help the Guangxi Zhuang Autonomous Region (GZAR) of the People's Republic of China (PRC) implement its strategies and action plans for regional cooperation and integration (RCI) with countries of the Association of Southeast Asian Nations (ASEAN), with a focus on developing the North–South Economic Corridor (NSEC) under the Greater Mekong Subregion (GMS) Cooperation Program. The geographical areas covered by the Investment Program include: (i) Fangchenggang Municipality and Dongxing City; (ii) Chongzuo Municipality and Pingxiang City, and Daxin County; (iii) Baise Municipality and the border towns of Longbang and Yuexu in Jinxi County; and (iv) Qinzhou Municipality.

2. **Impact and Outcome** (refer to the Design and Monitoring Framework)

**Impacts:** (i) Economic growth potential of border areas in the PRC and Viet Nam realized; (ii) Efficient transport and trade operations along GMS North–South Economic Corridor achieved; and (iii) Economic integration between GZAR and rest of the GMS further strengthened.

**Outcome:** Benefits of regional cooperation and integration in border areas of Guangxi and northern Viet Nam are captured.

3. **Outputs:**

- (i) **Support for small and medium-sized enterprises in border areas expanded.** The investment program will (a) provide credit to SMEs in the four border municipalities (including the Vietnamese SMEs operating in GZAR) using the financial intermediation loan (FIL) modality;<sup>1</sup> (b) strengthen GZAR's business development services system to provide better services to SMEs, including business networking and outreach support, market and technology information, and financial and human resources management; and (c) support GZAR's pilot project on cross-border labor cooperation with Viet Nam by improving training facilities and providing well-designed training programs for local and Vietnamese workers from SMEs in the border areas.
- (ii) **Cross-border financial transactions and investments increased.** The investment program will (a) support the development of demonstration cross-border financial services centers in Dongxing and Pingxiang BEZs to provide one-stop service for currency swap, payment, and settlement; and (b) explore measures to mitigate the noncommercial risks faced by investors.
- (iii) **Integrated and interoperable cross-border e-commerce platforms for the People's Republic of China and Viet Nam developed.** The investment program will (a) develop demonstration e-commerce incubation parks in Fangchenggang, Longbang, and Pingxiang to provide improved common infrastructure for e-commerce, including common network, data center, and

---

<sup>1</sup> In tranche 1, the Guangxi Branch of the Bank of Communications (BOCOM) was selected as the financial intermediary against the four major criteria: financial creditworthiness, institutional capabilities to manage the SME financing scheme, the extent of reach to SME markets, and the ability to fulfill ADB's reporting and safeguard standards. The targeted SMEs are those engaged in cross-border trade and logistics, agribusiness, manufacturing, and cross-border tourism. The ADB loan proceeds will be onlent through the financial intermediary to SMEs at market interest rates. Following initial implementation, opportunities will be explored to include other eligible local financial institutions. Integrity due diligence has been conducted on BOCOM, and further integrity due diligence will be undertaken for future financial intermediaries.

platforms for cross-border transactions, and to provide ready-to-use facilities and services for local and Vietnamese e-commerce enterprises involved in cross-border trade; and (b) help implement measures to improve customs and sanitary and phytosanitary services related to cross-border e-commerce.

- (iv) **Key infrastructure and trade-related services in border economic zones provided.** The investment program will (a) improve infrastructure in Dongxing, Pingxiang, Longbang, and Yuexu BEZs (including roads, water supply and sewage treatment, and logistics facilities); and (b) improve the conditions of border trade centers in the BEZs to facilitate trade among border area residents of the PRC and Viet Nam and provide better services to domestic and international tourists.
- (v) **Physical and informational connectivity and policy coordination improved.** The investment program will (a) improve border roads in Chongzuo's Daxin County, which will serve the PRC–Viet Nam cross-border tourism cooperation zone at Detian and Ban Gioc waterfalls, (b) develop the Fangchenggang big data center and Qinzhou cloud computing center to provide network infrastructure, platforms and services (such as data storage and data security), which will help implement the PRC–ASEAN Information Harbor Initiative and enhance informational connectivity with ASEAN,<sup>2</sup> and (c) upgrade Chongzuo's Shulong border-crossing point from Class B to Class A by improving infrastructure and services.<sup>3</sup> The investment program will also promote cross-border policy and operational dialogues on transport and logistics planning, finalize the joint master plan for BEZ development, and simplify and harmonize customs and sanitary and phytosanitary procedures.

4. **Tranche 1.** The first tranche of the multitranches financing facility (MFF) will cover the most urgent investments in SME development component, cross-border e-commerce component, BEZ infrastructure and services component, and project advisory support for preparation of subsequent tranches. Essentially, the main subprojects to be financed under tranche 1 are:

- (i) **Construction of Fangchenggang Training Center for PRC and Vietnamese Workers and SMEs:** Construction of training facilities in the premises of the Fangchenggang City Polytech Vocational School, including training space for automotive repair, machinery, electronics, and trade and commerce.
- (ii) **Development of Pingxiang Cross-border Labor Cooperation Demonstration Park:** Construction of a PRC–Viet Nam cross-border labor cooperation park, including a skills development and exchange center for employment and business venturing; training facilities; and office space.
- (iii) **Improvement of Training for PRC and Vietnamese Workers and Local SMEs:** Preparation and delivery of improved training programs for Vietnamese and PRC workers and local SMEs in the border prefectures of Fangchenggang, Chongzuo, and Baise.
- (iv) **Expansion of SME Financing in Guangxi:** Establishing partnership with financial intermediaries to provide access to finance to SMEs in Guangxi,

---

<sup>2</sup> The PRC–ASEAN Information Harbor Initiative was launched jointly by the governments of the PRC and ASEAN countries in 2015 with a view to improving informational connectivity, reducing digital divide, and provided high-quality and high-speed informational services for the PRC–ASEAN trade and economic cooperation.

<sup>3</sup> Class A border crossing points are open to people, goods and vehicles of any country, while Class B border crossing points are only open to people, goods and vehicles of the PRC and the adjacent country concerned.



specifically to each of the border prefectures of Fangchenggang, Chongzuo, and Baise using FIL modality.

- (v) **Development of Smart Port for Longbang Border Economic Zone:** Develop a cross-border trade logistics and information service, including a PRC–Viet Nam joint vehicle inspection service, customs clearance and sanitary and phytosanitary service, global multimodal transportation service, global supply chain management service, and cross-border order management services in Longbang BEZ.
- (vi) **Expansion of Pingxiang Border Trade Service Center:** Pingxiang border trade service center, including warehouses, administration and service building, customs and sanitary and phytosanitary services, platform balance and/or scale and other auxiliary facilities.
- (vii) **Project advisory support on Exploring Public-Private Partnership (PPP) Opportunities for Improving Border Services:** Project advisory support on PPP options for tranche 2 projects and preparation of PPP projects.
- (viii) **Project advisory support on Improving Cross-border Financial Services and Guarantees for Noncommercial Risks:** This includes guarantees for noncommercial risks.
- (ix) **Project advisory support on Strengthening Business Development Services (BDS) in Guangxi:** The project advisory support will undertake a demand analysis of SMEs in border areas for BDS, capacity assessment of SME service centers, and formulate a strategy and action plan for improved BDS services. This will serve as the basis for preparation of a BDS subproject in tranche 2.
- (x) **Project management and capacity building support** for the executing agency and implementing agencies for project management and implementation.

5. The list of indicative pipeline of projects for tranches 2 and 3 of the Investment Program is presented in Attachment 9.

## II. IMPLEMENTATION PLANS

### A. Project Readiness Activities

**Table 1: Project Readiness Activities**

Indicative Activities	2016					2017							Who responsible					
	8	9	10	11	12	1	2	3	4	5	6	7		8	9	10	11	12
Establish project implementation arrangements	█																	GPMO, Municipal PMOs, PIEs
Advance contracting actions				█														County/City PMUs, PIEs
Prepare Comprehensive Project Financing Application Report (PFA)	█																	GDRC
Prepare Comprehensive Loan Project Evaluation Opinion Report (LPEOR)	█																	GDOF
Review and endorsement of PFA and LPEOR		█																MOF, NDRC
State Council approval for loan negotiations		█																MOF, GGZAR
Loan Negotiations			█															ADB, MOF, GGZAR
ADB Board approval					█													ADB
Loan signing						█												ADB, MOF
Government legal opinion provided							█											MOF, MOFA
Loan effectiveness								█										ADB, MOF

ADB = Asian Development Bank, GDRC = Guangxi Development and Reform Commission, GDOF = Guangxi Department of Finance, GPMO = Guangxi Foreign Loans Project Management Office, GGZAR = Guangxi Zhuang Autonomous Region Government (executing agency), MOF = Ministry of Finance, MOFA = Ministry of Foreign Affairs, NDRC = National Development and Reform Commission, PIE = project implementing entity, PMO = Foreign Loans Project Management Office, PMU = project management unit.

Source: Asian Development Bank.

## B. Implementation Plan

**Table 2: Tranche 1 Investment Program Implementation Plan**

Component	2016	2017				2018				2019				2020				-----			2024
	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	-----	-	-	
<b>Tranche 1</b>																					
<b>1. GPMO</b>																					
1.1 Improvement of Training for PRC and Vietnamese Workers and Local SMEs (4 packages)																					
1.2 Expansion of SME Financing in Guangxi																					
1.3 Project advisory support on Exploring PPP Opportunities for Improving Border Services																					
1.4 Project advisory support on Improving Cross-Border Financial Services and Guarantees for Noncommercial Risks																					
1.5 Project advisory support on Strengthening Business Development Services in Guangxi																					
1.6 Project Management and Capacity Building support for EA and IAs for Project Management and Implementation																					
1.7 Start-up Individual Consultants Selection																					
<b>2. Fangchenggang PMO</b>																					
2.1 Construction of Fangchenggang Training Center for PRC and Vietnamese Workers and SMEs																					
<b>3. Chongzuo PMO</b>																					
3.1 Development of Pingxiang Cross-border Labor Cooperation Demonstration Park																					
3.2 Expansion of Pingxiang Border Trade Service Center																					
<b>4. Baise PMO</b>																					
4.1 Development of Smart Port for Longbang Border Economic Zone																					
<b>Tranche 2 (to be determined)</b>																					
<b>Tranche 3 (to be determined)</b>																					

advance contracting
  projected implementation schedule

Note: Project implementation start from domestic approval of feasibility study reports and end at the completion of works, goods, or consulting services.  
Source: Asian Development Bank.

### III. PROGRAM MANAGEMENT ARRANGEMENTS

#### A. Program Implementation Organizations: Roles and Responsibilities

**Table 3: Investment Program Implementation Roles and Responsibilities**

Project Implementation Organizations	Management Roles and Responsibilities
<p><b>Executing Agency</b></p> <ul style="list-style-type: none"> <li>• Government of Guangxi Zhuang Autonomous Region through Guangxi Foreign Loans Project Management Office (GPMO)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Take overall responsibility and provide overall coordination for preparation and implementation of the investment program and the subprojects.</li> <li>➤ Establish and maintain project imprest account (administered by Guangxi Department of Finance).</li> <li>➤ Submit withdrawal applications to the Asian Development Bank (ADB).</li> <li>➤ Ensure that counterpart funds and other resources for the subprojects are provided in a timely manner.</li> <li>➤ Engage project management consulting services, and organize project implementation and management training.</li> <li>➤ Conduct project advisory support activities.</li> <li>➤ Implement subproject “Improvement of Training for PRC and Vietnamese Workers and Local Small and Medium-sized Enterprises (SMEs)”</li> <li>➤ Implement subproject “Expansion of SME Financing” under financial intermediation loan modality with commercial banks such as the Guangxi Branch of Bank of Communications (Tranche 1) and maintain separate project accounts which are in line with the People’s Republic of China’s (PRC) accounting standards.</li> <li>➤ Engage procurement agent(s) and provide guidance to implementing agencies and project implementing entities (PIEs) on procurement issues.</li> <li>➤ Submit bidding documents, bid evaluation reports, and other necessary documentations to ADB for necessary approval.</li> <li>➤ Prepare a procurement manual to serve as guide to the procurement activities of the SME subborrowers under the financial intermediation loan, monitor the implementation, and identify measures to address any gaps.</li> <li>➤ Appoint focal persons with suitable qualifications and experience for issues related to environment (including climate change and wildlife trafficking), involuntary resettlement, and indigenous peoples (ethnic minorities), and ensure compliance.</li> <li>➤ Engage external environment, resettlement and social monitors for proper monitoring of implementation of safeguard measures.</li> <li>➤ Undertake screening, categorization, assessment and preparation and implementation of safeguard plans of components, projects and subprojects to be prepared after MFF approval using the environmental assessment and review framework, resettlement framework and ethnic minorities development framework.</li> </ul>

<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
	<ul style="list-style-type: none"> <li>➤ Support PIEs with preparation and implementation of EIAs, IEEs, EMP, resettlement plans and ethnic minority development plans for subprojects for subsequent tranches.</li> <li>➤ Ensure compliance with all relevant covenants in the loan and project agreements under each tranche.</li> <li>➤ Monitor the project implementation progress and compliance status, and prepare and submit to ADB regular progress reports reflecting issues and time-bound actions taken (or to be taken).</li> <li>➤ Prepare and submit to ADB project completion reports of each tranche in a timely manner.</li> <li>➤ Ensure the investment program's sustainability during post implementation stage and report to ADB on the assessed development impacts.</li> </ul>
<p><b>Steering Committee</b></p> <ul style="list-style-type: none"> <li>• Leading Group for Utilization of Foreign Loans of Guangxi Zhuang Autonomous Region</li> </ul>	<ul style="list-style-type: none"> <li>➤ Headed by Vice Governor and consists of heads or representatives of Guangxi Development and Reform Commission, Guangxi Department of Finance, Environmental Protection Department, Education Department, Housing, Urban and Rural Development Department, Human Resources and Social Security Department, Transport Department, Land Resources Department, Commerce Department, Industry and ICT Commission, Audit Department, Entry-Exit Inspection and Quarantine Bureau (EEIQB), Nanning Customs District, Banking Regulation Bureau and CAPF Border Defense Force.</li> <li>➤ Provide strategic and policy guidance to ensure successful implementation of the investment program.</li> <li>➤ Ensure adequate and smooth interagency coordination.</li> <li>➤ Meet regularly (at least twice a year) to discuss key issues of the investment program and make decisions for effective resolutions of the issues.</li> </ul>
<p><b>Implementing Agency</b></p> <ul style="list-style-type: none"> <li>• Baise Municipal Government</li>   <li>• Baise Municipal Government Leading Group for Utilization of Foreign Loans</li> </ul>	<ul style="list-style-type: none"> <li>➤ Take overall responsibility for preparation and implementation of the subprojects in Baise.</li> <li>➤ Ensure provision of counterpart funds and other resources for subprojects in Baise in a timely manner.</li> <li>➤ Repay and/or guarantee repayment of the loans for subprojects in Baise.</li> <li>➤ Provide guidance to and supervise subproject implementation by PIEs.</li>   <li>➤ Headed by Vice Mayor and consists of Jingxi county-level city government, Development and Reform Commission (DRC), Bureau of Finance (BOF), Banking Office (BO), Environmental Protection Bureau (EPB), Education Bureau (EB), Transport Bureau (TB), Land Resources Bureau (LRB), Housing, Urban and Rural Development Bureau (HURDB), Human Resources and Social Security Bureau (HRSB), Public Security Bureau (PSB), Commerce Bureau (CB), Local County-level New</li> </ul>

<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
	<p>Zone Management Commission (LNZMC), Industry and ICT Bureau (IB), Audit Bureau (AB), CAPF Border Defense Force at Port (BDFP) and Nanning Customs District at Port (NCDP).</p> <ul style="list-style-type: none"> <li>➤ Ensure adequate and smooth interagency coordination.</li> <li>➤ Meet regularly (at least twice a year) to discuss key issues of the subprojects in Baise and make decisions for effective resolution of issues.</li> </ul>
<ul style="list-style-type: none"> <li>• Baise Municipal Government Foreign Loans Project Management Office</li> </ul>	<ul style="list-style-type: none"> <li>➤ Supervise and implement day-to-day activities for preparation and implementation of subprojects in Baise including: procurement and contract management, financial management, preparation of separate project accounts, and financial auditing of such accounts.</li> <li>➤ Appoint focal persons with suitable qualifications and experience for issues related to environment (including climate change and wildlife trafficking), involuntary resettlement, and indigenous peoples (ethnic minorities), and ensure compliance.</li> <li>➤ Prepare and implement EIAs/IEEs, EMP, resettlement plans and ethnic minority development plans, if any, of components, projects, and subprojects in Baise for succeeding tranches.</li> <li>➤ Prepare and submit completion reports to GPMP in a timely manner.</li> </ul>
<ul style="list-style-type: none"> <li>• Chongzuo Municipal Government</li> </ul>	<ul style="list-style-type: none"> <li>➤ Take overall responsibility for the preparation and implementation of the subprojects in Chongzuo.</li> <li>➤ Ensure provision of counterpart funds and other resources for subprojects in Chongzuo in a timely manner.</li> <li>➤ Repay and/or guarantee repayment of the loans for subprojects in Chongzuo.</li> <li>➤ Provide guidance to and supervise subproject implementation by PIES.</li> </ul>
<ul style="list-style-type: none"> <li>• Chongzuo Municipal Government Leading Group for Utilization of Foreign Loans</li> </ul>	<ul style="list-style-type: none"> <li>➤ Headed by Vice Mayor and consists of Pingxiang county-level city government, Daxin county-level government, DRC, BOF, BO, EPB, EB, TB, LRB, HURDB, HRSB, PSB, CB, LNZMC, IB, AB, EEIQB, NCDP and BDFP.</li> <li>➤ Ensure adequate and smooth interagency coordination.</li> <li>➤ Meet regularly (at least twice a year) to discuss key issues of the subprojects in Chongzuo and make decisions for effective resolution of issues.</li> </ul>
<ul style="list-style-type: none"> <li>• Chongzuo Municipal Government Foreign Loans Project Management Office</li> </ul>	<ul style="list-style-type: none"> <li>➤ Supervise and implement day-to-day activities for preparation and implementation of subprojects in Chongzuo including: procurement and contract management, financial management, preparation of separate project accounts, and financial auditing of such accounts.</li> <li>➤ Appoint focal persons with suitable qualifications and experience for issues related to environment (including</li> </ul>

<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
	<p>climate change and wildlife trafficking), involuntary resettlement, and indigenous peoples (ethnic minorities), and ensure compliance.</p> <ul style="list-style-type: none"> <li>➤ Prepare and implement EIAs/IEEs, EMP, resettlement plans and ethnic minority development plans, if any, of components, projects, and subprojects in Chongzuo for succeeding tranches.</li> <li>➤ Ensure tranche 1 EMP is implemented and environment compliance reported in quarterly progress reports and annual environmental monitoring reports.</li> <li>➤ Prepare and submit completion reports to GPMP in a timely manner.</li> </ul>
<ul style="list-style-type: none"> <li>• Fangchenggang Municipal Government</li> </ul>	<ul style="list-style-type: none"> <li>➤ Take overall responsibility for the preparation and implementation of the subprojects in Fangchenggang.</li> <li>➤ Ensure provision of counterpart funds and other resources for subprojects in Fangchenggang in a timely manner.</li> <li>➤ Repay and/or guarantee repayment of the loans for subprojects in Fangchenggang.</li> <li>➤ Provide guidance to and supervise subproject implementation by PEs.</li> </ul>
<ul style="list-style-type: none"> <li>• Fangchenggang Municipal Government Leading Group for Utilization of Foreign Loans</li> </ul>	<ul style="list-style-type: none"> <li>➤ Headed by Vice Mayor and consists of Dongxing county-level city government, DRC, BOF, BO, EPB, EB, TB, LRB, HURDB, HRSB, PSB, CB, LNPMC, IB, AB, EEIQB, NCDP and BDFP.</li> <li>➤ Ensure adequate and smooth interagency coordination.</li> <li>➤ Meet regularly (at least twice a year) to discuss key issues of the subprojects in Fangchenggang and make decisions for effective resolution of issues.</li> </ul>
<ul style="list-style-type: none"> <li>• Fangchenggang Municipal Government Foreign Loans Project Management Office</li> </ul>	<ul style="list-style-type: none"> <li>➤ Supervise and implement day-to-day activities for preparation and implementation of subprojects in Fangchenggang including: procurement and contract management, financial management, preparation of separate project accounts, and financial auditing of such accounts.</li> <li>➤ Appoint focal persons with suitable qualifications and experience for issues related to environment (including climate change and wildlife trafficking), involuntary resettlement, and indigenous peoples (ethnic minorities), and ensure compliance.</li> <li>➤ Prepare and implement EIAs/IEEs, EMP, resettlement plans and ethnic minority development plans, if any, of components, projects, and subprojects in Fangchenggang for succeeding tranches.</li> <li>➤ Ensure tranche 1 EMP is implemented and environment compliance reported in quarterly progress reports and annual environmental monitoring reports.</li> <li>➤ Prepare and submit completion reports to GPMP in a timely manner.</li> </ul>
<ul style="list-style-type: none"> <li>• Qinzhou Municipal</li> </ul>	<ul style="list-style-type: none"> <li>➤ Take overall responsibility for the preparation and</li> </ul>

<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
Government	<p>implementation of the subprojects in Qinzhou.</p> <ul style="list-style-type: none"> <li>➤ Ensure provision of counterpart funds and other resources for subprojects in Qinzhou in a timely manner.</li> <li>➤ Repay and/or guarantee repayment of the loans for subprojects in Qinzhou.</li> <li>➤ Provide guidance to and supervise subproject implementation by PIEs.</li> </ul>
<ul style="list-style-type: none"> <li>• Qinzhou Municipal Government Leading Group for Utilization of Foreign Loans</li> </ul>	<ul style="list-style-type: none"> <li>➤ Headed by Vice Mayor and consists of representatives of county-level governments (to be defined in tranche 2), DRC, BOF, BO, EPB, EB, TB, LRB, HURDB, HRSB, PSB, CB, LNZMC, IB, AB, EEIQB, NCDP and BDFP.</li> <li>➤ Ensure adequate and smooth interagency coordination. Meet regularly (at least twice a year) to discuss key issues of the subprojects in Qinzhou and make decisions for effective resolution of issues.</li> </ul>
<ul style="list-style-type: none"> <li>• Qinzhou Municipal Government Foreign Loans Project Management Office</li> </ul>	<ul style="list-style-type: none"> <li>➤ Supervise and implement day-to-day activities for preparation and implementation of subprojects in Qinzhou including: procurement and contract management, financial management, preparation of separate project accounts, and financial auditing of such accounts.</li> <li>➤ Appoint focal persons with suitable qualifications and experience for issues related to environment (including climate change and wildlife trafficking), involuntary resettlement, and indigenous peoples (ethnic minorities), and ensure compliance.</li> <li>➤ Prepare and submit completion reports to GPMO in a timely manner.</li> <li>➤ Prepare and implement EIAs/IEEs, EMP, resettlement plans and ethnic minority development plans, if any, of components, projects, and subprojects in Qinzhou for succeeding tranches</li> </ul>
<ul style="list-style-type: none"> <li>• Guangxi Branch of Bank of Communications</li> </ul>	<ul style="list-style-type: none"> <li>➤ As financial intermediary designated to channel SME financing by screening SME subprojects, monitoring and collecting subloans to SMEs in Guangxi, particularly in Baise, Chongzuo, Fangchenggang, and Qinzhou municipalities according to agreed eligibility criteria.</li> <li>➤ Set up and maintain a PIU to take the following responsibilities: <ul style="list-style-type: none"> <li>– conduct financial due diligence on subprojects and creditworthiness analysis on the new subproject applicants;</li> <li>– adopt ESMS arrangements and conduct environmental and social due diligence for subprojects in accordance with the ESMS;</li> <li>– recommend to GPMO approval or rejection of subproject applications based on its financial assessment;</li> <li>– provide cofinancing for approved new subprojects, wherever feasible;</li> </ul> </li> </ul>



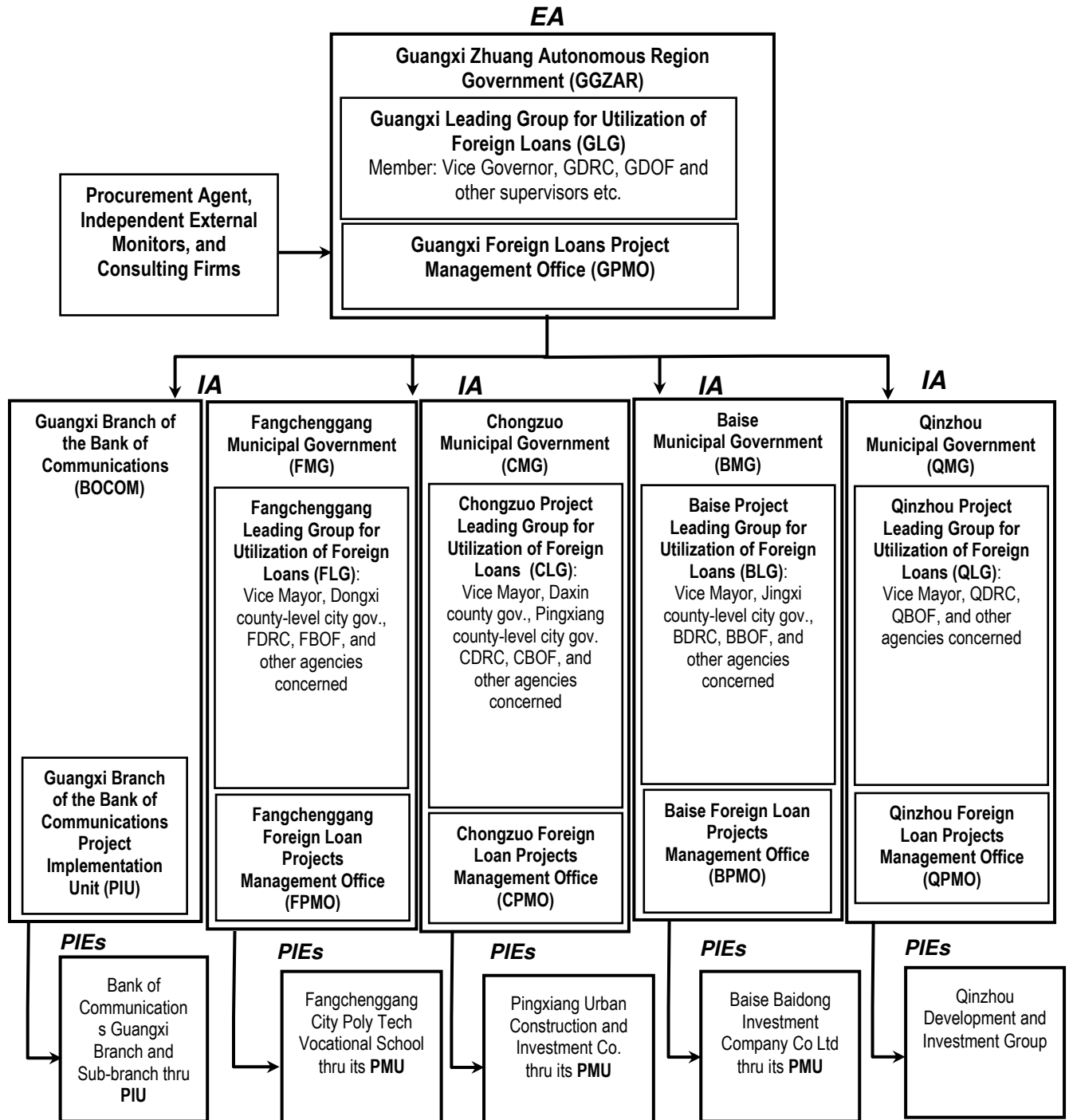
<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
	<ul style="list-style-type: none"> <li>- manage cash flows on disbursement, interest payment, and principal payment processes and administering subloan portfolio;</li> <li>- ensure accounts are audited yearly;</li> <li>- monitor nonperforming loans;</li> <li>- submit quarterly reports on loan disbursements, loan repayments, SME performance supported by the financing facility to the GPMP; and</li> <li>- report to the Guangxi provincial steering committee which screens SME loan applications and guides overall implementation of the SME financing subproject.</li> </ul>
<p><b>PIEs for Tranche 1 Subprojects</b></p>	
<ul style="list-style-type: none"> <li>• Fangchenggang City Poly Tech Vocational School</li> </ul>	<ul style="list-style-type: none"> <li>➤ Set up and maintain a project management unit (PMU).</li> <li>➤ Under the guidance of Fangchenggang Municipal government, carry out day-to-day implementation of Construction of Fangchenggang Training Centre for PRC and Vietnamese Workers and SMEs subproject, including construction supervision, procuring goods and works under the subproject, maintaining separate project accounts in accordance with PRC's accounting standards.</li> <li>➤ Implement tranche 1 EMP and report on environmental compliance in quarterly progress reports and annual environmental monitoring reports.</li> <li>➤ Prepare regular project progress reports and project completion report.</li> <li>➤ Responsible for operating and maintaining the completed subproject facilities.</li> </ul>
<ul style="list-style-type: none"> <li>• Pingxiang Urban Construction and Investment Company</li> </ul>	<ul style="list-style-type: none"> <li>➤ Set up and maintain a PMU.</li> <li>➤ Under the guidance of Chongzuo Municipal Government and Pingxiang City Government, carry out day-to-day implementation of: (i) Development of Pingxiang Cross-border Labor Cooperation Demonstration Park subproject and (ii) Expansion of Pingxiang Border Trade Service Center subproject, including construction supervision, procuring goods and works under the subproject and maintaining separate project accounts in accordance with PRC's accounting standards.</li> <li>➤ Prepare regular project progress reports and project completion report.</li> <li>➤ Implement tranche 1 EMP and report on environmental compliance in quarterly progress reports and annual environmental monitoring reports.</li> <li>➤ Responsible for operating and maintaining the completed subproject facilities.</li> </ul>
<ul style="list-style-type: none"> <li>• Baise Baidong Investment Company</li> </ul>	<ul style="list-style-type: none"> <li>➤ Set up and maintain a PMU consisting of competent information and communication technology project manager, information and communication technology chief engineer, accountant, technical advisors, and representatives of the owner and/or operator of Longbang Border Crossing Point.</li> </ul>

<b>Project Implementation Organizations</b>	<b>Management Roles and Responsibilities</b>
	<ul style="list-style-type: none"> <li>➤ Under the guidance of Baise Municipal Government and Jinxi County Government, carry out day-to-day implementation of Development of Smart Port for Longbang Border Economic Zone project, including procurement of goods and equipment, construction and installation supervision, and maintaining separate project accounts in accordance with PRC's accounting standards.</li> <li>➤ Prepare regular project progress reports and project completion report.</li> <li>➤ Responsible for operating and maintaining the completed subproject facilities.</li> </ul>
<ul style="list-style-type: none"> <li>• Construction supervision companies and procurement agents (to be recruited under the domestic fund)</li> </ul>	<ul style="list-style-type: none"> <li>➤ To support GPMO, implementing agencies and PIEs in procurement of consulting services, civil works, and goods, and construction supervision.</li> </ul>
<ul style="list-style-type: none"> <li>• Independent external monitoring agencies for environment and resettlement (to be recruited under the ADB loan)</li> </ul>	<ul style="list-style-type: none"> <li>➤ To implement independent monitoring of environment and resettlement plan implementation and submit monitoring reports as required.</li> </ul>
<ul style="list-style-type: none"> <li>• Project management and capacity development consultants (to be recruited under the ADB loan)</li> </ul>	<ul style="list-style-type: none"> <li>➤ To provide the project implementation support including environmental external monitoring.</li> <li>➤ To conduct training and capacity building activities.</li> </ul>
<ul style="list-style-type: none"> <li>• ADB</li> </ul>	<ul style="list-style-type: none"> <li>➤ Assist GPMO and implementing agencies in providing timely guidance at each stage of the project for smooth implementation in accordance with the agreed implementation arrangements.</li> <li>➤ Review all the documents that require ADB approval.</li> <li>➤ Conduct periodic loan review missions, a mid-term review, and project completion mission.</li> <li>➤ Monitor compliance with all loan covenants including safeguards.</li> <li>➤ Timely process withdrawal applications and release eligible funds.</li> <li>➤ Monitor compliance with financial audit recommendations.</li> <li>➤ Regularly update the project performance review reports.</li> <li>➤ Regularly post on ADB website the updated project information documents for public disclosure, and also the safeguards documents as per disclosure provision of the ADB's Safeguard Policy Statement (2009).</li> </ul>

Source: Asian Development Bank.

6. The GPMO will also be responsible for implementing the SME financing subproject and the project advisory support activities for developing BDS, PPP projects, and cross-border investment and financial services, in addition to the project management consultants. The organizational structure for the investment program and the organizational chart for the PMO and PMU are presented in Figures 1–3.

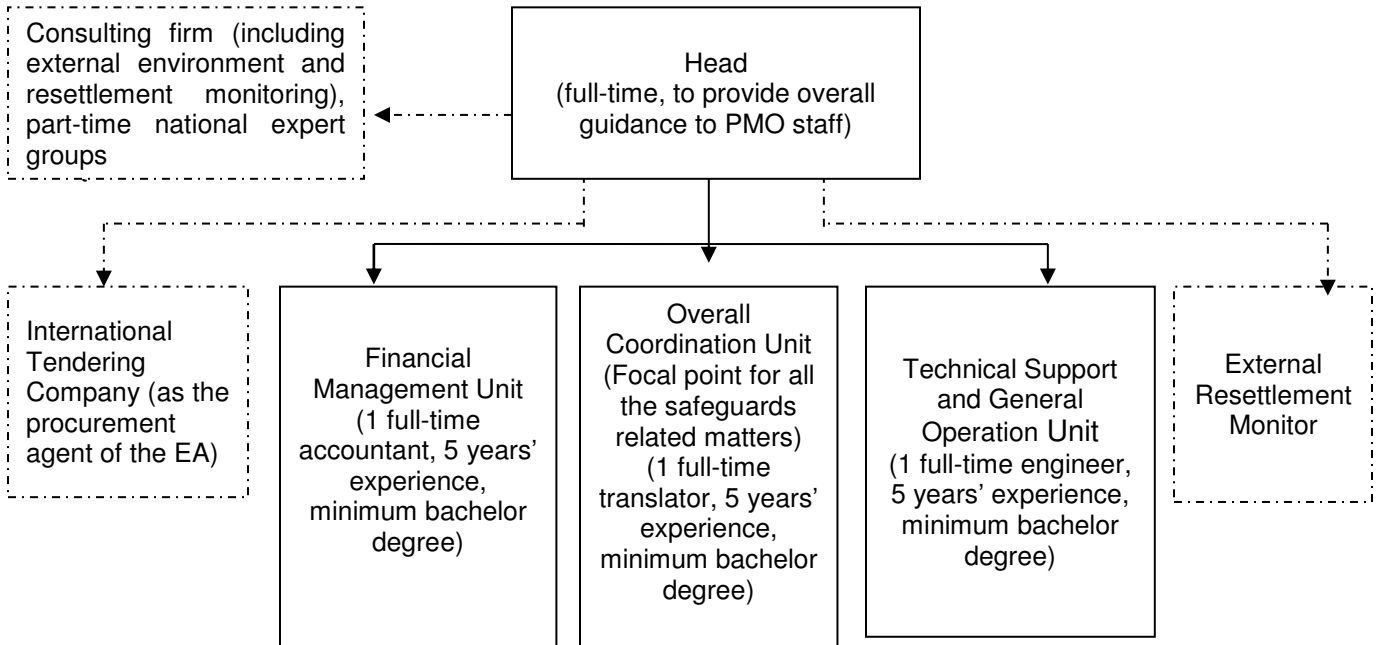
**Figure 1: Investment Program Organizational Structure**



ADB = Asian Development Bank, BBOF = Baise Bureau of Finance, BDRC = Baise Development and Reform Commission, BOCOM = Guangxi Branch of Bank of Communications, CBOF = Chongzuo Bureau of Finance, CDRC = Chongzuo Development and Reform Commission, EA = executing agency, FBOF = Fangchenggang Bureau of Finance, FDRC = Fangchenggang Development and Reform Commission, GDOF = Guangxi Department of Finance, GDRC = Guangxi Development and Reform Commission, IA = implementing agency, PIE = project implementing entities, PIU = project implementation unit, PMU = project management unit, QBOF = Qinzhou Bureau of Finance, QDRC = Qinzhou Development and Reform Commission.

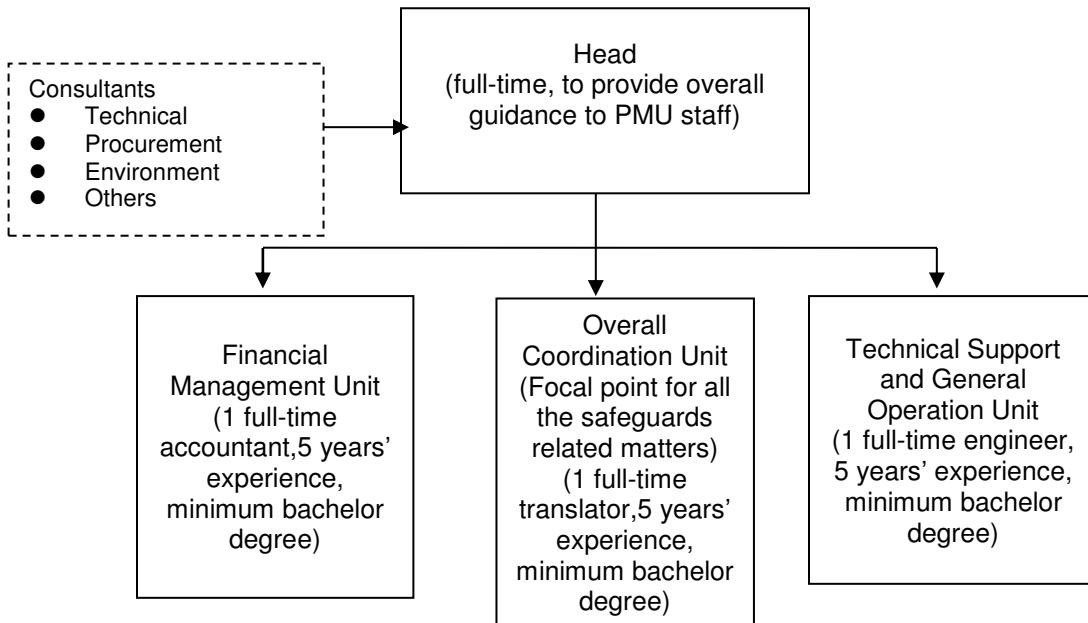
Source: Asian Development Bank.

**Figure 2: Organization Chart of Municipal-Level PMO**



EA = executing agency, PMO = project management office.  
Source: Asian Development Bank.

**Figure 3: Organization Chart of PMU**



PMU = project management unit.  
Source: Asian Development Bank.

## **B. Key Persons Involved in Implementation**

### **Executing Agency**

#### **Guangxi Foreign Loans Project Management Office**

Mr. Han Qingdong  
Head of the PMO  
Deputy Director General  
Development and Reform Commission

Mr. Wu Tiancheng  
Executive Head of the PMO  
Division Director, Development and Reform Commission

Mr. Yin Hongliang  
Executive Deputy Head of the PMO  
Deputy Division Director, Development and Reform Commission

Tel: (86 771) 232 8839  
Fax: (86 771) 232 8035  
Email: gxrcipmo@163.com  
Rm. 1815, 111-1 Minzu Avenue  
Nanning, Guangxi 530022, PRC

### **Implementing Agency**

#### **Baise Municipal Government Foreign Loans Project Management Office**

Mr. Fan Xuri  
Deputy Director  
Baise Municipal Development and Reform Commission  
Baise, Guangxi, PRC  
Tel: (86 776) 285 4388  
Fax: (86 776) 282 4367  
Email: bsswdb@163.com  
Development Reform Building, Donghe 2 Road  
Baise, Guangxi, PRC

### **Implementing Agency**

#### **Chongzuo Municipal Government Foreign Loans Project Management Office**

Mr. Li Li  
Deputy Director  
Chongzuo Municipal Development and Reform Commission  
Chongzuo, Guangxi, PRC  
Tel: (86 771) 503 5128  
Fax: (86 771) 503 5169  
Email: czfgwwjk@163.com  
Development Building, Friendship Avenue  
Chongzuo, Guangxi, PRC

### **Implementing Agency**

#### **Fangchenggang Municipal Government Foreign Loans Project Management Office**

Mr. Yu Jia  
Deputy Director  
Fangchenggang Municipal Development and Reform Commission

Fangchenggang, Guangxi, PRC  
Tel: (86 770) 281 8505  
Fax: (86 770) 282 7964  
Email: jw2818656@163.com  
Government Building, Municipal Administration Center  
Fangchenggang, Guangxi, PRC

**Implementing Agency  
Qinzhou Municipal  
Government Foreign Loans  
Project Management Office**

Mr. Ma Xiangcong  
Deputy Director  
Qinzhou Municipal Development and Reform Commission  
Qinzhou, Guangxi, PRC  
Tel: (86 777) 368 8456  
Fax: (86 777) 285 8527  
Email: qzfgwwjk@126.com  
#11 Yongfu East Avenue  
Qinzhou, Guangxi, PRC

**Implementing Agency  
Guangxi Branch of Bank of  
Communications**

Ms. Liu Juan  
General Manager, Head PIU  
Tel: (86 771) 282 0632  
Fax: (86 771) 282 0632  
Email: liu\_juan@bankcomm.com

**Asian Development Bank  
Public Management, Financial  
Sector, and Regional  
Cooperation Division, EARD**

Ying Qian  
Director  
Telephone No. (632) 632-5945  
Fax: (63 2) 636 2444  
Email address: yqian@adb.org  
6 ADB Avenue, Mandaluyong City  
1550 Metro Manila, Philippines

**Mission Leader**

Yuebin Zhang  
Senior Regional Cooperation Specialist  
Telephone No. (632) 632-6960  
Fax: (63 2) 636 2444  
Email address: yuebinzhang@adb.org  
6 ADB Avenue, Mandaluyong City  
1550 Metro Manila, Philippines

## IV. COSTS AND FINANCING

### A. Cost Estimates Preparation and Revisions

7. The investment program is estimated to cost \$1,180.0 million, including physical and price contingencies, interest and other charges during the implementation, for all three tranches (Table 4).

**Table 4: Investment Program  
(\$ million)**

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Small and medium-sized enterprises (SME) development <sup>c</sup>	271.0
2. Cross-border financial services	35.0
3. Cross-border e-commerce	130.0
4. Border economic zone development	462.0
5. Cross-border connectivity	190.0
6. Technical and institutional support <sup>d</sup>	12.0
Subtotal (A)	1,100.0
<b>B. Contingencies<sup>e</sup></b>	40.0
<b>C. Financing Charges During Implementation<sup>†</sup></b>	40.0
<b>Total (A+B+C)</b>	<b>1,180.0</b>

<sup>a</sup> Includes taxes and duties of about \$20 million to be financed from government resources in the form of tax exemption. ADB financing may also cover taxes and duties for the project when the amount of taxes and duties to be financed by ADB: (i) are within the reasonable threshold identified during the country partnership strategy preparation process; (ii) do not represent an excessive share of the investment plan; (iii) apply only to ADB-financed expenditures; and (iv) the financing of taxes and duties is considered material and relevant to the success of the project.

<sup>b</sup> In mid-2016 prices.

<sup>c</sup> Physical contingencies computed at 5% for base investment costs. Price contingencies computed on average at 1.5% on foreign exchange costs and 2.0% on local currency costs. Includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during implementation for ADB loan has been computed at the LIBOR-based 5-year US dollar fixed swap rate corresponding to the implementation period plus an effective contractual spread of 0.5%. Commitment charges for ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

8. The Government of the PRC has requested multitranche Financing Facility (MFF) in an amount up to \$450.0 million from ADB's ordinary capital resources, including the PRC country allocation and regional set-aside, to help finance a part of the investment program. The MFF will consist of three tranches, subject to the government's submission of related periodic financing requests, execution of the related loan and project agreements for each tranche, and fulfillment of terms and conditions and undertakings set forth in the framework financing agreement. The first tranche will comprise two loans for a total of \$130.0 million: (i) a loan (loan 1) amounting to \$66.42 million with a 25-year term, including a grace period of 5 years, interest and other charges during construction (IDC) to be capitalized; and (ii) a second loan (loan 2) using the financial intermediation loan (FIL) modality amounting to \$63.58 million with a 15-year term including a grace period of 12 years, IDC capitalized for the first 5 years. Both loans will have (i) a straight-line repayment method, (ii) an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, (iii) a commitment charge of 0.15% per year; and (iv) such other terms and conditions set forth in the draft loan and project



agreements. The financing plan of the MFF is in Table 5, and ADB financing for the investment program is in Table 6.<sup>5</sup>

**Table 5: Summary of Financing Plan  
(\$ million)**

Source	Tranche 1 (\$ million)	Tranche 2 (\$ million)	Tranche 3 (\$ million)	Total (\$ million)	Share of Total (%)
Asian Development Bank <sup>a</sup>					
OCR loan from country allocation	85.0	135.0	80.0	300.0	25.4
OCR loan from regional set-aside	45.0	65.0	40.0	150.0	12.7
Government	150.0	290.0	290.0	730.0	61.9
<b>Total</b>	<b>280.0</b>	<b>490.0</b>	<b>410.0</b>	<b>1,180.0</b>	<b>100.0</b>

ADB = Asian Development Bank, BOCOM = Guangxi Branch of the Bank of Communications, PIE = project implementing entity.

<sup>a</sup> The Guangxi Foreign Loans Project Management Office will also be responsible for implementing the small and medium-sized enterprise training subproject and the project advisory support activities in addition to project management. The organizational structure and fund flow diagrams are in the Facility Administration Manual (accessible from the list of linked documents in Appendix 2).

Sources: Government of Guangxi Zhuang Autonomous Region and Asian Development Bank.

**Table 6: ADB Financing for the Investment Program  
(\$ million)**

Item	Tranche 1	Tranche 2	Tranche 3	Total
Small and medium-sized enterprises development <sup>a</sup>	86.4	40.0	0.0	126.5
Cross-border financial services	0.0	6.5	14.0	20.5
Cross-border e-commerce	27.3	32.0	0.0	59.6
Border economic zone development	6.9	70.0	56.5	133.2
Cross-border connectivity	0.0	50.0	48.0	98.0
Technical and institutional support	9.4	1.5	1.5	12.2
<b>Total</b>	<b>130.0</b>	<b>200.0</b>	<b>120.0</b>	<b>450.0</b>

<sup>a</sup> Includes \$63.58 million loan to be provided to small and medium-sized enterprise subprojects through the Guangxi Branch of the Bank of Communications using the Asian Development Bank's financial intermediation loan modality.

Source: Asian Development Bank estimates.

9. The government will make the proceeds of each tranche available for purposes of financing projects under the MFF. It is expected that the government will finance the remaining cost of about \$730.0 million equivalent, or 62% of the total cost, including taxes and duties and other miscellaneous costs.

## B. Key Assumptions

10. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate: CNY 0.154 = \$1.00 (5 May 2016).
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 7: Escalation Rates for Price Contingency Calculation**

<sup>5</sup> ADB. 2016. *Proposed Multitranches Financing Facility People's Republic of China: Guangxi Regional Cooperation and Integration Promotion Investment Program*. Manila (TA 9120-PRC), approved on 2 June 2016 for \$950,000 from ADB's TA funds, through which nine international consultants for 19.7 person-months and 14 national consultants for 27.3 person-months were engaged.

Item	2016	2017	2018	2019	2020	Average
Foreign rate of price inflation	1.5%	1.4%	1.5%	NA	NA	1.47%
Domestic rate of price inflation	1.7%	2.0%	2.1%	2.1%	2.1%	2.0%

NA = not applicable.

Source: Asian Development Bank.

### C. Detailed Cost Estimates by Expenditure Category

**Table 8: Tranche 1 Cost Estimates by Expenditure Category**

Items	Amount (\$million)		
	Foreign Exchange	Local Currency	Total Cost
<b>A. Investment Costs</b>			
1. Civil Works	0.00	26.76	26.76
2. Mechanical and Equipment	0.00	32.52	32.52
3. Consultants	0.00	23.35	23.35
a. Project Management	0.00	13.27	13.27
b. Capacity Development	0.00	10.08	10.08
4. SME Credit Line	0.00	166.15	166.15
<b>Subtotal (A)</b>	<b>0.00</b>	<b>248.78</b>	<b>248.78</b>
<b>B. Recurrent Costs</b>			
1. Salaries	0.00	2.62	2.62
2. Equipment operation and maintenance	0.00	1.01	1.01
<b>Subtotal (B)</b>	<b>0.00</b>	<b>3.63</b>	<b>3.63</b>
<b>Total Base Cost</b>	<b>0.00</b>	<b>252.41</b>	<b>252.41</b>
<b>C. Contingencies</b>			
1. Physical	0.00	4.34	4.34
2. Price	0.00	13.90	13.90
<b>Subtotal (C)</b>	<b>0.00</b>	<b>18.24</b>	<b>18.24</b>
<b>D. Financial Charges During Implementation</b>			
1. Interest During Construction	0.00	9.17	9.17
2. Commitment Charges	0.00	0.18	0.18
<b>Subtotal (D)</b>	<b>0.00</b>	<b>9.35</b>	<b>9.35</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>0.00</b>	<b>280.00</b>	<b>280.00</b>

Notes: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank.

**D. Allocation and Withdrawal of Investment Loan Proceeds – Loan 1**

**Table 9: Allocation and Withdrawal of Investment Loan**

No.	Item	Total Amount Allocated for ADB Financing (\$ million)		Percentage and Basis for Withdrawal from the Loan Account
		Category	Subcategory	
1	Works	20.54		
1A	Works for the Fangchenggang Polytech Vocational School		9.36	69.03% of total expenditure claimed
1B	Works for Cross-border Labor Cooperation Demonstration Park in Pingxiang		4.90	82.49% of total expenditure claimed
1C	Works for the Border Trade Service Center in Pingxiang Border Economic Zone		6.28	66.53% of total expenditure claimed
2	Goods*	25.73		100% of total expenditure claimed
3	Consulting Services	16.00		100% of total expenditure claimed
4	Interest and Commitment Charges	4.15		100% of amount due
	<b>Total</b>	<b>66.42</b>		

\* Including insurance and transportation costs.

**E. Allocation and Withdrawal of Financial Intermediation Loan Proceeds – Loan 2**

**Table 10: Allocation and Withdrawal of Financial Intermediation Loan**

CATEGORY			ADB FINANCING
No.	Category	Total Amount Allocated for ADB Financing (\$ million)	Percentage and Basis for Withdrawal from the Loan Account
1	SME Credit Line*	58.38	100% of total expenditure claimed
2	Financing Charges	5.20	100% of amount due
	<b>Total</b>	<b>63.58</b>	

\* Subject to the condition for withdrawal described in paragraph 7 of Schedule 3 of the Loan Agreement.

**F. Detailed Cost Estimates by Financier**

**Table 11: Tranche 1 Cost Estimates by Financier  
(\$ million)**

Items	ADB		Government		Total Cost (\$)
	Amount (\$)	%	Amount (\$)	%	
<b>A. Investment Costs</b>					
1. Civil Works	20.54	70.97%	8.40	29.03%	28.94
a. Fangchenggang Polytech Vocational School	9.36	69.03%	4.20	30.97%	13.56
b. Cross-border Labor Cooperation Demonstration Park in Pingxiang	4.90	82.49%	1.04	17.51%	5.94
c. Border trade service center in Pingxiang Border Economic Zone	6.28	66.53%	3.16	33.47%	9.44
2. Mechanical and Equipment	25.73	74.47%	8.82	25.53%	34.55
a. Longbang Smart Port (ADB financing) and Pingxiang Border-trade Service Center	25.73	100.00%	0.00	0.00%	25.73
b. Fangchenggang Polytech Vocational School, Fangchenggang Cross-border Labor Cooperation Park, and Longbang Smart Port (government financing)	0.00	0.00%	8.82	100.00%	8.82
3. Consultants	16.00	68.52%	7.35	31.47%	23.35
a. Training of Vietnamese and PRC Workers and Local SMEs, Project Advisory Support, and Project Management and Capacity Building	16.00	100.00%	0.00	0.00%	16.00
b. Pingxiang Cross-border Labor Cooperation Park, Longbang Smart Port, and PRC-Viet Nam Pingxiang Border-trade Service Center	0.00	0.00%	7.35	100.00%	7.35
4. SME Credit Line	58.38	35.14%	107.77	64.86%	166.15
<b>Subtotal</b>	120.65	47.61%	128.13	51.50%	248.78
<b>B. Recurrent Costs</b>					
1. Salaries	0.00	0.00%	2.62	100.00%	2.62
2. Equipment operation and maintenance	0.00	0.00%	1.01	100.00%	1.01
<b>Subtotal</b>	0.00	0.00%	3.63	100.00%	3.63
<b>C. Contingencies</b>	0.00	0.00%	18.24	100.00%	18.24
<b>D. Financial Charges During Implementation</b>	9.35	100.00%	0.00	0.00%	9.35
<b>Total Project Cost</b>	130.00	46.43%	150.00	53.57%	280.00
<b>% Total Project Cost</b>	46.43%		53.57%		100.00%

ADB = Asian Development Bank, SME = small and medium-sized enterprise.

Source: Asian Development Bank.

## G. Detailed Cost Estimates by Outputs and/or Components

**Table 12: Tranche 1 Cost Estimates by Outputs and/or Components**  
(\$ million)

Items	Total Cost	SME		Cross-border E-Commerce		BEZ		Project Advisory Support		Project Management	
		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
<b>A. Investment Costs<sup>b</sup></b>											
1. Civil Works	26.76	18.08	67.6%	0.00	0.0%	8.68	32.4%	0.00	0.0%	0.00	0.0%
2. Mechanical and Equipment	32.52	3.22	9.9%	29.11	89.5%	0.18	0.6%	0.00	0.0%	0.00	0.0%
3. Consultants	23.35	8.35	35.7%	5.23	22.4%	1.12	4.8%	2.65	11.4%	6.00	25.7%
a. Project Management	13.27	1.42	10.7%	5.23	39.4%	1.12	8.4%	0.00	0.0%	5.50	41.4%
b. Capacity Development	10.08	6.93	68.7%	0.00	0.0%	0.00	0.0%	2.65	26.3%	0.50	5.0%
4. SME Credit Line	166.15	166.15	100.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%	0.00	0.0%
<b>Subtotal (A)</b>	<b>248.78</b>	<b>195.80</b>	<b>78.7%</b>	<b>34.34</b>	<b>13.8%</b>	<b>9.98</b>	<b>4.0%</b>	<b>2.65</b>	<b>1.1%</b>	<b>6.00</b>	<b>2.4%</b>
<b>B. Recurrent Costs</b>											
1. Salaries	2.62	1.85	70.6%	0.00	0.0%	0.77	29.4%	0.00	0.0%	0.00	0.0%
2. Equipment operation and maintenance	1.01	0.71	70.3%	0.00	0.0%	0.30	29.7%	0.00	0.0%	0.00	0.0%
<b>Subtotal (B)</b>	<b>3.63</b>	<b>2.56</b>	<b>70.5%</b>	<b>0.00</b>	<b>0.0%</b>	<b>1.07</b>	<b>29.5%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.0%</b>
<b>Total Base Cost</b>	<b>252.41</b>	<b>198.36</b>	<b>78.6%</b>	<b>34.34</b>	<b>13.6%</b>	<b>11.05</b>	<b>4.4%</b>	<b>2.65</b>	<b>1.0%</b>	<b>6.00</b>	<b>2.4%</b>
<b>C. Contingencies</b>											
1. Physical <sup>c</sup>	4.34	1.52	35.0%	1.87	43.0%	0.95	22.0%	0.00	0.0%	0.00	0.0%
2. Price <sup>d</sup>	13.90	11.02	79.3%	1.92	13.8%	0.53	3.8%	0.14	1.0%	0.30	2.2%
<b>Subtotal (C)</b>	<b>18.24</b>	<b>12.54</b>	<b>68.8%</b>	<b>3.79</b>	<b>20.8%</b>	<b>1.48</b>	<b>8.1%</b>	<b>0.14</b>	<b>0.8%</b>	<b>0.30</b>	<b>1.6%</b>
<b>D. Financial Charges During Implementation<sup>e</sup></b>											
1. Interest During Construction	9.17	6.47	70.5%	1.70	18.6%	0.43	4.7%	0.17	1.9%	0.40	4.4%
2. Commitment Charges	0.18	0.09	52.9%	0.05	29.4%	0.01	5.9%	0.01	5.9%	0.01	5.9%
<b>Subtotal (D)</b>	<b>9.35</b>	<b>6.55</b>	<b>70.2%</b>	<b>1.75</b>	<b>18.8%</b>	<b>0.44</b>	<b>4.7%</b>	<b>0.18</b>	<b>1.9%</b>	<b>0.41</b>	<b>4.4%</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>280.00</b>	<b>217.45</b>	<b>77.7%</b>	<b>39.88</b>	<b>14.2%</b>	<b>12.97</b>	<b>4.6%</b>	<b>2.97</b>	<b>1.1%</b>	<b>6.71</b>	<b>2.4%</b>

BEZ = border economic zone, SME = small and medium-sized enterprise.

Source: Asian Development Bank.

## H. Detailed Cost Estimates by Year

**Table 13: Tranche 1 Cost Estimates by Year**  
(\$ million)

Items	Total Cost	Year 1	Year 2	Year 3	Year 4
<b>A. Investment Costs</b>					
1. Civil Works	26.76	2.14	23.02	1.61	0.00
2. Mechanical and Equipment	32.52	10.66	14.53	5.61	1.72
3. Consultants	23.35	5.28	7.16	5.96	4.95
a. Project Management	13.27	3.87	2.82	3.11	3.46
b. Capacity Development	10.08	1.40	4.33	2.85	1.49
4. SME Credit Line	166.15	58.38	26.94	26.94	26.94
<b>Subtotal (A)</b>	<b>248.78</b>	<b>76.46</b>	<b>71.64</b>	<b>40.12</b>	<b>33.61</b>
<b>B. Recurrent Costs</b>					
1. Salaries	2.62	1.15	1.15	0.31	0.00
2. Equipment operation and maintenance	1.01	0.11	0.64	0.26	0.00
<b>Subtotal (B)</b>	<b>3.63</b>	<b>1.27</b>	<b>1.79</b>	<b>0.57</b>	<b>0.00</b>
<b>Total Base Cost</b>	<b>252.41</b>	<b>77.73</b>	<b>73.44</b>	<b>40.69</b>	<b>33.61</b>
<b>C. Contingencies</b>	<b>18.24</b>	<b>3.08</b>	<b>5.89</b>	<b>3.26</b>	<b>3.16</b>
<b>D. Financial Charges During Implementation</b>	<b>9.35</b>	<b>0.81</b>	<b>1.73</b>	<b>2.13</b>	<b>2.30</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>280.00</b>	<b>81.62</b>	<b>81.06</b>	<b>46.08</b>	<b>39.07</b>
<b>% Total Project Cost</b>	<b>100%</b>	<b>29%</b>	<b>29%</b>	<b>16%</b>	<b>14%</b>

SME = small and medium-sized enterprise.  
Source: Asian Development Bank.

## I. Contract and Disbursement S-Curve

**Table 14: Contract Awards and Disbursements (Tranche 1)**  
(\$ million, by quarter)

Quarter	Cumulative Contract Awards (\$ million)	Cumulative Disbursements (\$ million)
Q1 2017	0	0
Q2 2017	0	0
Q3 2017	1.72	0.17
Q4 2017	19.22	2.09
Q1 2018	37.16	5.74
Q2 2018	37.36	9.59
Q3 2018	56.42	14.44
Q4 2018	62.75	17.94
Q1 2019	62.75	22.07
Q2 2019	68.75	26.8
Q3 2019	78.75	36.8
Q4 2019	88.75	46.8
Q1 2020	88.75	55.46
Q2 2020	90.64	63.05
Q3 2020	110.64	83.05
Q4 2021	120.64	93.05
Q1 2021		101.71
Q2 2021		114.11
Q3 2021		125.85
Q4 2021		130

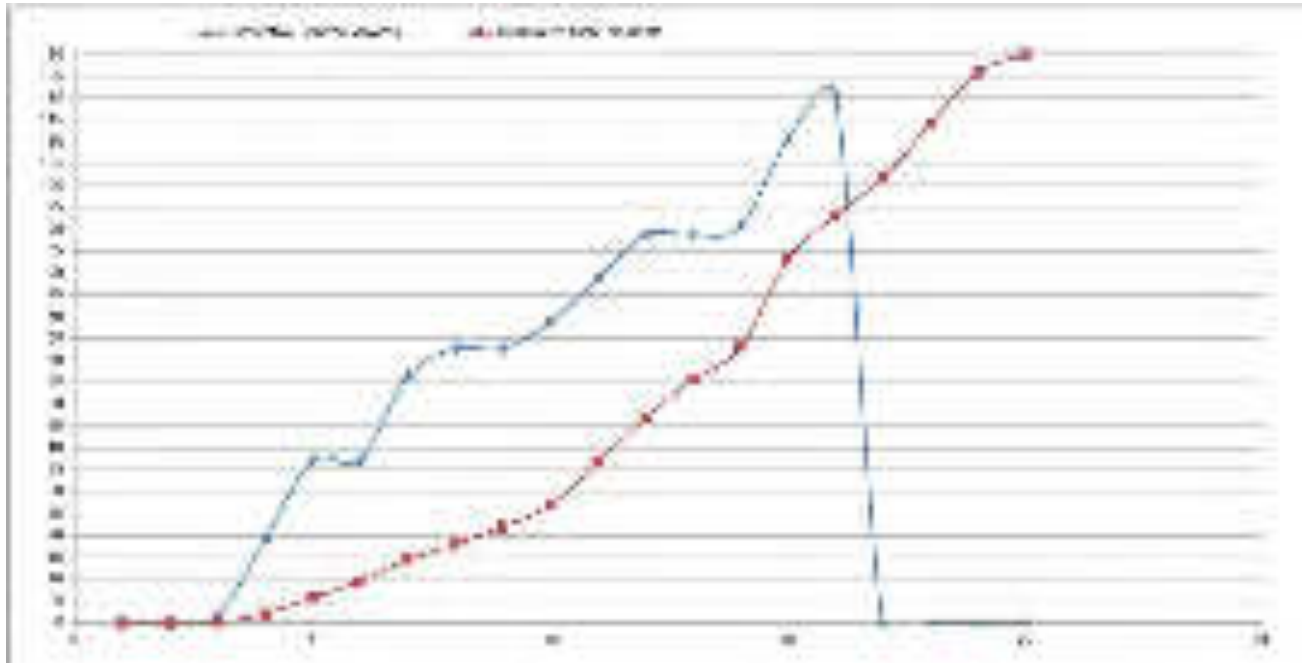
Source: Asian Development Bank estimates.

**Table 15: Contract Awards and Disbursements (Tranche 1)**  
(cumulative)

Year	Contract Awards (in USD Million)					Disbursements (in USD Million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2017			1.72	17.50	19.22	0.00	0.00	0.17	1.92	2.09
2018	17.94	0.20	19.06	6.33	62.75	3.65	3.85	4.85	3.50	17.94
2019	0.00	6.00	10.00	10.00	88.75	4.13	4.73	10.00	10.00	46.80
2020		1.89	20.00	10.00	120.64	8.66	7.59	20.00	10.00	93.05
2021						8.66	12.40	11.74	4.15	130.00
<b>Total</b>					<b>120.64</b>					<b>130.00</b>

Source: Asian Development Bank estimates.

**Figure 4: Contract Awards and Disbursements Projections (Tranche 1)**  
(\$ million)





## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

11. A financial management assessment was carried out for the executing agency and project implementing entities (PIEs) in accordance with Asian Development Bank (ADB) guidelines. The executing agency is currently implementing two ADB-financed projects and has sufficient knowledge and experience in ADB policies and procedures, which would be shared with the implementing agencies and PIEs. The executing and implementing agencies, and one of the PIEs, are government entities, the other two PIEs are state-owned enterprises. The government has a controlling interest in the financial intermediary Guangxi Branch of Bank of Communications (BOCOM). The state-owned enterprises follow more commercially-oriented financial reporting with profit and loss, balance sheet, and cash flow statements. The other entities follow government accounting procedures on budget preparation, publishing and implementation. All institutions have produced financial statements in a timely manner, and financial statements for the year ended 31 December 2015 have been prepared and audited. The auditor has issued unqualified opinions for all entities concerned. Internal controls such as segregation of duties, verification of fixed assets, preparation of bank reconciliations and other reconciliations, and monitoring of budget are in place. Authority levels are functional to authorize transactions based on the value of their respective amounts. No major country-level financial management issues are apparent as the country has a well-established public sector. Overall Inherent Risk and Control Risk have been assessed as low.

12. Pre-mitigation strengthening measures have been included for improving financial management systems. A Financial Management Internal Control and Risk Assessment, based largely on the International Standard on Auditing 400: Risk Assessment and Internal Control, was conducted on the executing agency, implementing agencies, and PIEs. The results, including recommendations for risk mitigation, are summarized below (Table 16). GGZAR shall cause the Pingxiang Urban Construction and Investment Company to develop financial management road map, acceptable to ADB, and implement the measures under such road map throughout the Project. In particular, the road map shall include acceptable operating ratio and debt equity level. GGZAR shall monitor whether the Pingxiang Urban Construction and Investment Company achieves the requirements under the road map, and take necessary measures and provide adequate support if it appears that requirements are not satisfied.

**Table 16: Financial Management Risk Rating and Proposed Mitigation Measures**

Risk Type	Risk Assessment	Risk Description	Mitigation Measures	Timeline
<b>A. Inherent Risk</b>				
1. Country specific risks	L	There are sufficient skills, expertise, and experience in the field of financial management in the country context	None	
2. Entity specific risks	L	EA and PIEs have been clearly identified and are aware of their responsibilities	None	
	L	Financial statements prepared in a timely manner and audited	None	
<b>Overall Inherent Risk</b>	<b>L</b>			

<b>Risk Type</b>	<b>Risk Assessment</b>	<b>Risk Description</b>	<b>Mitigation Measures</b>	<b>Timeline</b>
<b>B. Control Risk</b>				
1. Implementing Entity				
2. Fund Flow	L	Clearly defined fund flow arrangement which is currently being applied for ongoing ADB projects	None	
	L	Imprest Account will be managed by the Guangxi government which has prior experience	None	
3. Staffing	M	Accounting departments are well staffed with qualified and experience staff; however, no experience with ADB procedures	EA will provide necessary assistance to PIEs on ADB procedures	GPMO to provide training on ADB procedures to PIE by December 2016 and have ongoing training programs throughout the project
4. Accounting policies and procedures	L	Project accounting will be separate from PIE accounting and will be done by GPMO		
5. Internal Audit	M	Most PIEs do not have internal audit functions and it will be difficult to find experienced staff to do such work	The GPMO will have a budget which could be used to hire accounting firms to carry out internal audits and internal control reviews to improve internal controls under the project	By December 2017
6. External Audit	L	Project audit reports have been completed on time and have been deemed unqualified		
<b>Overall Control Risk</b>	<b>L</b>			

ADB = Asian Development Bank, EA = executing agency, GPMO = Guangxi Project Management Office, L = Low, M = Medium, PIE = project implementing entity.  
Source: Asian Development Bank.

## B. Disbursement Arrangements for ADB Funds

13. The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.<sup>6</sup> Project staff is encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

14. **Imprest fund procedure.** A separate imprest account will be established and maintained by the executing agency, through Guangxi Department of Finance (GDOF), for each ADB loan. The currency of the imprest accounts is the US dollar. The imprest accounts are to be used exclusively for ADB's share of eligible expenditures. GDOF is accountable and responsible for proper use of advances to the two imprest accounts—one for the investment loan (Loan 1) and the other for the FIL (Loan 2).

15. For the ADB loan proceeds that will be onlent via the financial intermediary (BOCOM) to SMEs, a separate USD imprest account will be established at the provincial level and managed by the GDOF (Figure 6). The loan proceeds will be transferred from the imprest account to the revolving escrow account (REA) established at BOCOM after the receipt of funds by GDOF from ADB, following the necessary domestic procedures. GDOF will make the loan proceeds available to BOCOM, under the terms and conditions of the revolving escrow account (REA) management agreement, for further onlending to selected subborrowers through subloan agreements among BOCOM, the subborrower, and GDOF.<sup>7</sup> The REA will be managed by BOCOM. Considering the executing agency's and GDOF's administration of attaching voluminous documentation for numerous and small amounts of subloans to withdrawal applications (WAs), the statement of expenditure (SOE) for FIL loans procedure will be used. The SOE ceiling under the financial intermediary loan is set at the free limit of the SME loans, i.e., CNY 30 million. If an individual loan size exceeds the SOE ceiling, a subloan agreement and a summary sheet will need to be submitted for liquidation.

16. For each loan, the total outstanding advance to the imprest account should not exceed the estimate of ADB's share of expenditures to be paid through the imprest account for the forthcoming six months. The executing agency, through GDOF, may request initial and additional advances to the imprest accounts based on an Estimate of Expenditure Sheet setting out the estimated expenditures to be financed through the account for the forthcoming six months.<sup>8</sup> Supporting documents should be submitted to ADB or retained by the Borrower, the Guangxi Foreign Loans Project Management Office, in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) when liquidating or replenishing the imprest account.

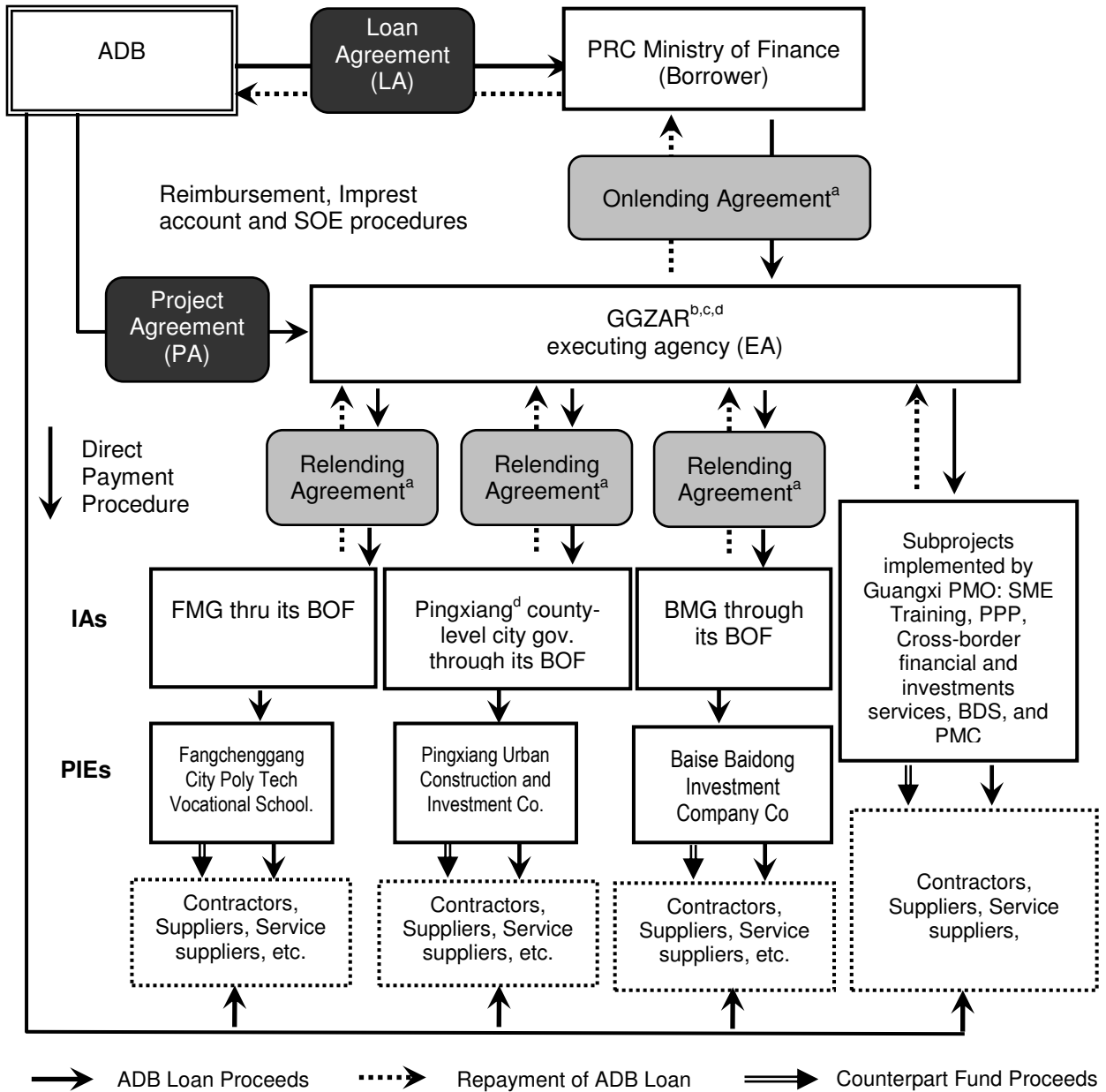
---

<sup>6</sup> Disbursement eLearning. [http://wpqr4.adb.org/disbursement\\_elearning](http://wpqr4.adb.org/disbursement_elearning)

<sup>7</sup> To ensure that ADB loan proceeds, as well as interest payments and principal repayments from the subborrowers, are not co-mingled with the other funds being administered by BOCOM, a separate REA will be established at, and maintained by BOCOM for all transactions related to the project and administration of the FIL. This will ensure that the account is kept distinct from BOCOM's own assets, and provides protection against adverse results from other BOCOM financial operations. The repaid principal will flow back to REA for recycling of the FIL for subloans. The interest payment will be separately kept in the interest rate differential account (IDA).

<sup>8</sup> ADB. 2015. *Loan Disbursement Handbook*. Appendix 10B.

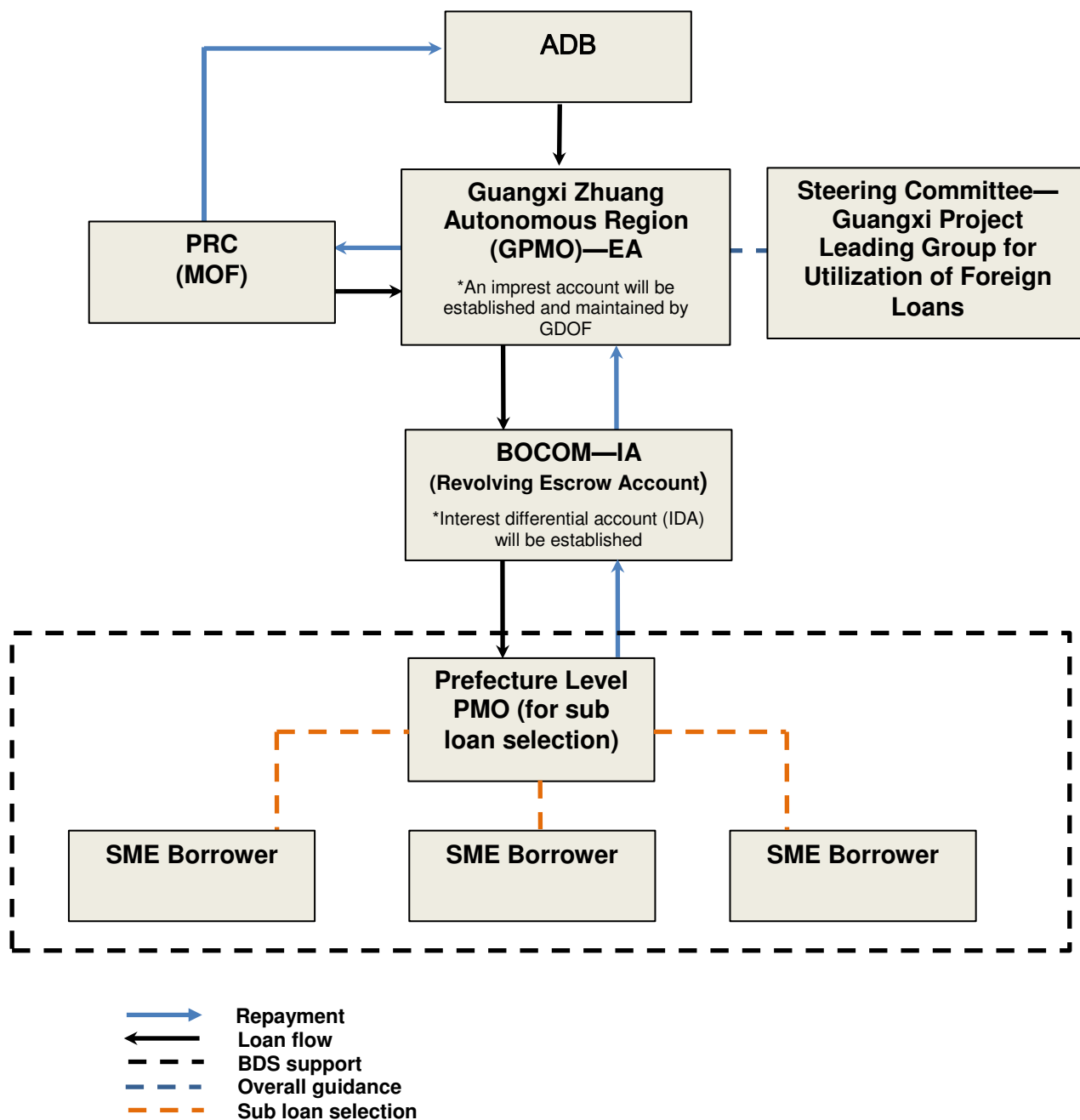
**Figure 5: Fund Flow Diagram for Tranche 1 Investment Loan**



<sup>a</sup> ADB loan will be onlent or relent on the same terms and conditions as those received by the PRC Ministry of Finance.  
<sup>b</sup> Imprest account is established and administered by Guangxi Department of Finance (GDOF).  
<sup>c</sup> GGZAR, BMG, PCG, FMG and PIEs will establish and manage separate project accounts.  
<sup>d</sup> PCG through its BOF will establish and manage separate loan account for the ADB loan, and repay its loan directly to GGZAR DOF without going through Chongzuo Municipal Government (CMG)'s prefecture BOF, while their day-to-day subproject management is supervised by CMG.

ADB = Asian Development Bank, BDS = Business Development Services, BMG = Baise Municipal Government, BOF = Bureau of Finance, DOF = Department of Finance, FMG = Fangchenggang Municipal Government, GGZAR = Government of Guangxi Zhuang Autonomous Region, IA = implementing agency, PCG = Pingxiang county-level city government, PMC = project management and capacity building consulting services, PPP = public-private partnership, PRC = People's Republic of China, SME = small and medium-sized enterprises, SOE = statement of expenditure.  
 Source: Asian Development Bank.

**Figure 6: Fund Flow for Expansion of SME Financing (Financial Intermediation Loan)**



ADB = Asian Development Bank, BOCOM = Guangxi Branch of Bank of Communications, EA = executing agency; GDOF = Guangxi Department of Finance, GPMO = Guangxi Zhuang Autonomous Region Foreign Loans Project Management Office, IA = implementing agency, MOF = Ministry of Finance, PMO = Project Management Office, PRC = People's Republic of China, SME = small and medium-sized enterprise.  
 Source: Asian Development Bank.

17. **Statement of expenditure procedure.**<sup>9</sup> For both loans, the statement of expenditure procedure may be used for reimbursement of eligible expenditures or liquidation of advances to the imprest accounts. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

18. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the Government of the PRC, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is \$100,000. Individual payments below this amount should be paid (i) by the executing agency and subsequently claimed to ADB through reimbursement, or (ii) through the imprest fund procedure, unless otherwise accepted by ADB.

### **C. Accounting**

19. The GPMO, implementing agencies and PIEs will maintain, or cause to be maintained, separate books and records by funding source for all expenditures incurred on the project in accordance with their respective financial reporting frameworks. This is to be ensured by (i) support to the GPMO under the ADB loan by provision of a financial management consultant who will assist in developing project accounting and reporting systems; (ii) engagement of a specific accounting staff by GPMO, implementing agencies, and PIEs—covered by an assurance—to prepare project financial statements in accordance with their respective financial reporting standards; and (iii) strengthening of project accounting systems through engagement of a professional accounting firm by the GPMO—covered by an assurance—to assess internal controls of the implementing agencies and PIEs and recommend measures for strengthening and improvement. For the FIL loan, each subborrower of the SME financing component under BOCOM will also maintain separate accounts and records by funding source for all expenditures incurred on the project. BOCOM will prepare a Statement of Utilization of Funds for the FIL in accordance with the International Financial Reporting Standards.

### **D. Auditing and Public Disclosure**

20. The GPMO will cause the detailed consolidated project financial statements to be audited in accordance with International Standards on Auditing by an independent auditor acceptable to ADB. The audited project financial statements, together with the auditor's opinion will be presented in the English language to ADB within six months from the end of the fiscal year by the GPMO.

21. For entities preparing independent entity financial statements, the audited entity financial statements, together with the auditor's report and management letter, will be submitted in the English language to ADB within one month after their approval by the relevant authority.

22. The audit report for the project financial statements will include a management letter and auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the loan were used only for the

---

<sup>9</sup> SOE forms are available in Appendix 9B and 9C of ADB's *Loan Disbursement Handbook* (2015, as amended from time to time).

purpose(s) of the project; and (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the legal agreements (where applicable).

23. 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.

24. The Government, GPMO and the PIEs have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and acceptable quality of the audited project financial statements.<sup>10</sup> ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), 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.

25. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Public Communications Policy 2011.<sup>11</sup> After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited entity financial statements will not be disclosed.<sup>12</sup>

---

<sup>10</sup> ADB's approach and procedures regarding 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 are not 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 are not received within 12 months after the due date, ADB may suspend the loan.

<sup>11</sup> Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

<sup>12</sup> This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting and Retroactive Financing

26. **Advance contracting.** All advance contracting will be undertaken in conformity with ADB Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The issuance of invitations to bid under advance contracting will be subject to ADB approval. The borrower, executing agency, implementing agencies and PIEs have been advised that approval of advance contracting does not commit ADB to finance the project. Advance contracting will include advertisement, issuance of bidding document and evaluation of bids, and up to the recommendation of contracts award. Advance contracting is envisaged for business development services and other consulting service contracts.

27. **Retroactive financing.** Retroactive financing, which applies to the investment loan only, will be available for expenditures incurred prior to loan effectiveness, but not more than 12 months prior to loan signing, up to 20% of the loan amount under a tranche. The borrower, executing agency, implementing agencies and PIEs have been advised that approval of retroactive financing does not commit ADB to finance the project.

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

28. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).<sup>13</sup> International competitive bidding (ICB) procedures will be used for civil works contracts estimated to exceed \$40 million, and goods contracts estimated to exceed \$10 million.<sup>14</sup> Contract estimated at less than the ICB thresholds would be procured following national procedures in accordance with the People's Republic of China (PRC) Tendering and Bidding Law (1999), subject to modifications as agreed with ADB and consigned in the national competitive bidding (NCB) annex to the procurement plan. Contracts for works estimated to cost less than the ICB threshold values, but from \$100,000 and contracts for goods estimated to cost less than the ICB threshold values, but from \$100,000 will be procured on the basis of NCB procedures. Shopping will be used for contracts for procurement of works and goods estimated at less than \$100,000.

29. Before the start of any procurement, ADB and the government will review the public procurement laws of the central and state governments to ensure consistency with ADB's Procurement Guidelines (2015, as amended from time to time). For procurement under NCB, the following provisions will apply: (i) the advertisement may be limited to the national press, an official gazette or an open access website; (ii) bidding shall follow the standard bidding documents issued by MOF and approved by ADB; and (iii) bidding documents may be only in the Chinese language, and Chinese Yuan (CNY) currency, may be used for the purpose of bidding and payment. Procurement under NCB and shopping will be subject to the provisions of the NCB annex of the procurement plan.

30. Procurement under ICB shall use the latest ADB standard bidding documents which can be downloaded from ADB's website.

31. For subloans through financial intermediation loan, the procurement will be undertaken by the respective subborrowers in accordance with established private sector or commercial

---

<sup>13</sup> Available at <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

<sup>14</sup> Subjected to further market assessment for the goods to be procured.



practices, which are acceptable to ADB. The Guangxi Foreign Loans Project Management Office and Guangxi Branch of Bank of Communications will ensure that the subborrowers use procurement practices acceptable to ADB. Subborrowers will be encouraged to procure through competitive bidding or shopping when such procurements are most appropriate in the interest of economy and efficiency. A procurement manual will be prepared to provide guidance to the subborrowers on procurement activities.

32. All consultants will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).<sup>15</sup> The terms of reference for all consulting services are detailed in Attachment 1.

33. An estimated 1,239 person-months of consulting services are required to (i) facilitate project management and implementation, (ii) strengthen the institutional and operational capacity of the executing and implementing agencies, and (iii) conduct project advisory support on public-private partnership, business development services, and cross-border financial and investment services. Consulting firms will be engaged using the quality- and cost-based selection (QCBS) method with a quality-cost ratio of 80:20.

### C. Procurement Plan

**Table 17: Basic Data**

<b>Project Name:</b> Guangxi Regional Cooperation and Integration Promotion Investment Program – Tranche 1	
<b>Project Number:</b> 50050-002	<b>Approval Number:</b>
<b>Country:</b> PEOPLE'S REPUBLIC OF CHINA	<b>Executing Agency:</b> Government of Guangxi Zhuang Autonomous Region, through Foreign Loan Projects Management Office
<b>Project Procurement Classification:</b> B	<b>Implementing Agency:</b> PIU in Baise, Fangchenggang, and Pingxiang City
<b>Procurement Risk:</b> Moderate	<b>Project Closing Date:</b> 30 June 2025
<b>Project Financing Amount:</b> \$ 280.0 million <b>ADB Financing:</b> \$130.0 million <b>Non-ADB Financing:</b> \$150.0 million	
<b>Date of First Procurement Plan:</b> 14 October 2016	<b>Date of this Procurement Plan:</b> 14 October 2016

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

##### (a) Procurement and Consulting Methods and Thresholds

34. Except as ADB may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding (ICB) for Works	\$40,000,000 or more	Prior review
International Competitive Bidding for Goods	\$10,000,000	Prior review
National Competitive Bidding (NCB) for Works	Beneath that stated for ICB, Works	Prior review for each implementing agency's first package

<sup>15</sup> Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

National Competitive Bidding for Goods <sup>2</sup>	Beneath that stated for ICB, Goods	Prior review for each implementing agency's first package
Shopping for Works	Below \$100,000	
Shopping for Goods	Below \$100,000	

<b>Consulting Services</b>	
<b>Method</b>	<b>Comments</b>
Quality and Cost Based Selection (QCBS)	80:20
Quality Based Selection	
Individual Consultants' Selection	
Consultants' Qualifications Selection <sup>1</sup>	
Least-Cost Selection <sup>2</sup>	
Fixed Budget Selection	

<sup>1</sup> Refer to Para. 29 of PAI 2.02 for Consultants' Qualification Selection.

<sup>2</sup> Refer to Para. 26 of PAI 2.02 for Least-Cost Selection.

**D. Goods and Works Contracts Estimated to Cost \$1 Million or More**

35. 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.

<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (\$'000)</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
BS-E1	Longbang Smart Port: Security and Vehicle Management Systems (Phase 1)	8,560	NCB	Prior	1S1E	Q2 2017	
BS-E2	Longbang Smart Port: Data Center and Network Systems (Phase 1)	5,103	NCB	Post	1S1E	Q2 2017	
BS-E3	Longbang Smart Port: Customs and O&M Systems (Phase 1)	4,376	NCB	Post	1S1E	Q2 2017	
BS-E4	Longbang Smart Port: Phase 2 Expansion	6,003	NCB	Post	1S1E	Q3 2018	
BS-E5	Longbang Smart Port: Phase 3 Expansion (Data Center and O&M Systems)	1,894	NCB	Post	1S1E	Q4 2019	
PX-C1	Pingxiang Border Trade Comprehensive Service Center Buildings (5 buildings)	9,379	NCB	Prior	1S1E	Q2 2017	
PX-E1	Vehicle Weigh Scales in Pingxiang Border Trade Comprehensive Service Center	199	NCB	Prior	1S1E	Q4 2017	
PX-C2	Pingxiang Cross-border Labor Cooperation Park Buildings (5 buildings)	5,735	NCB	Prior	1S1E	Q4 2017	
FGS-C1	Fangchenggang City Poly Tech Vocational School Buildings (5 buildings)	13,330	NCB	Prior	1S1E	Q2 2017	

**E. Consulting Services Contracts Estimated to Cost \$100,000 or More**

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

<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (\$'000)</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
GX-CS1	Project Management and Implementation Support for Executing and Implementing Agencies	6,000	QCBS (80:20)	Prior	FTP	Q1 2017	
GX-CS3	Project Management and Procurement Specialist	150	ICS	Prior	National	Q1 2017	
GX-CS5	Project advisory support on Exploring PPP Opportunities for Improving Border Services	1,430	QCBS (80:20)	Prior	STP	Q1 2017	
GX-CS6	Project advisory support on Improving Cross-border	570	QCBS (80:20)	Prior	STP	Q1 2017	

Package Number	General Description	Estimated Value (\$'000)	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	Financial Services and Guarantees for Noncommercial Risks						
GX-CS7	Project advisory support on Strengthening Business Development Services in Guangxi	650	QCBS (80:20)	Prior	BTP	Q1 2017	
GX-CS8	Improvement of Training for PRC and Vietnamese Workers and Local SMEs	928	QCBS (80:20)	Prior	FTP	Q1 2017	
GX-CS9	Improvement of Training for PRC and Vietnamese Workers and Local SMEs in Fangchenggang	2,110	QCBS (80:20)	Prior	FTP	Q1 2018	
GX-CS10	Improvement of Training for PRC and Vietnamese Workers and Local SMEs in Chongzuo	2,110	QCBS (80:20)	Prior	FTP	Q1 2018	
GX-CS11	Improvement of Training for PRC and Vietnamese Workers and Local SMEs in Baise	2,110	QCBS (80:20)	Prior	FTP	Q1 2018	
GX-CS12	External Monitoring Consultant (Environment)	100	ICS	Prior	National	Q1 2017	
GX-CS13	External Monitoring Consultant (Involuntary Resettlement and Social)	100	ICS	Prior	National	Q4 2016	

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

37. 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.

Package Number	General Description	Estimated Value (\$'000)	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
PX-E1	Vehicle Weigh Scales in Pingxiang Border Trade Comprehensive Service Center	199	NCB	Prior	1S1E	Q4 2017	
GX-CS2	ICT and e-Commerce Specialist	80	ICS	Prior	National	Q1 2017	
GX-CS4	Public-Private Partnership Specialist	70	ICS	Prior	National	Q1 2017	

**G. Indicative List of Packages Required Under the Project**

38. The following table provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

<b>Goods and Works</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (cumulative)</b>	<b>Estimated Number of Contracts</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Comments</b>
							N/A
							N/A

<b>Consulting Services</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (cumulative)</b>	<b>Estimated Number of Contracts</b>	<b>Recruitment Method</b>	<b>Review (Prior / Post)</b>	<b>Type of Proposal</b>	<b>Comments</b>
							N/A
							N/A

**H. List of Awarded and On-going, and Completed Contracts**

39. The following tables list the awarded and on-going contracts, and completed contracts.

**Table 18: Awarded and On-going Contracts**

<b>Goods and Works</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value</b>	<b>Awarded Contract Value</b>	<b>Procurement Method</b>	<b>Advertisement Date (quarter/year)</b>	<b>Date of ADB Approval of Contract Award<sup>1</sup></b>	<b>Comments<sup>2</sup></b>
							N/A
							N/A
							N/A

<sup>1</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>2</sup> Indicate the Contractor's name and the contract signing date.

<b>Consulting Services</b>							
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value</b>	<b>Awarded Contract Value</b>	<b>Recruitment Method</b>	<b>Advertisement Date (quarter/year)</b>	<b>Date of ADB Approval of Contract Award<sup>3</sup></b>	<b>Comments<sup>4</sup></b>
							N/A
							N/A
							N/A

<sup>3</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>4</sup> Indicate the Consulting Firm's name and the contract signing date.

**Table 19: Completed Contracts**

<b>Goods and Works</b>								
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value</b>	<b>Contract Value</b>	<b>Procurement Method</b>	<b>Advertisement Date (quarter/year)</b>	<b>Date of ADB Approval of Contract Award<sup>5</sup></b>	<b>Date of Completion<sup>6</sup></b>	<b>Comments</b>
								N/A
								N/A

<sup>5</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>6</sup> The Date of Completion is the physical completion date of the contract.

<b>Consulting Services</b>								
<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value</b>	<b>Contract Value</b>	<b>Recruitment Method</b>	<b>Advertisement Date (quarter/year)</b>	<b>Date of ADB Approval of Contract Award<sup>7</sup></b>	<b>Date of Completion<sup>8</sup></b>	<b>Comments</b>
								N/A
								N/A

<sup>7</sup> Date of ADB Approval of Contract Award is the date of No-Objection letter to the EA/IA.

<sup>8</sup> The Date of Completion is the physical completion date of the contract.

## **I. Non-ADB Financing**

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

**Goods and Works:**

Package Number	General Description	Estimated Value	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
BS-E6	Longbang Smart Port: O&M equipment (Phase 1, 2)	44	Government	N/A		Q2 2017	
BS-E7	Longbang Smart Port: Custom Equipment (Phase 1, 2)	572	Government	N/A		Q2 2017	
PX-E2	IT System for Workers Security in Pingxiang Cross-border Labor Cooperation Park	301	Government	N/A		Q2 2018	
FGS-E1	Fangchenggang City Poly Tech Vocational School: Training Facility and Equipment	1,654	Government	N/A		Q4 2017	
FGS-E2	Fangchenggang City Poly Tech Vocational School: Student Dormitory Facility	500	Government	N/A		Q4 2017	
FGS-E3	Fangchenggang City Poly Tech Vocational School: Teaching Support Equipment	677	Government	N/A		Q4 2017	
FGS-E4	Fangchenggang City Poly Tech Vocational School: Teaching Material (books)	246	Government	N/A		Q4 2017	

**Consulting Services**

Package Number	General Description (Goods and Works)	Estimated Value	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
BS-CS1	Longbang Smart Port: Application System Development for the Customer Service	473	Government	N/A		Q3 2017	
BS-CS2	Longbang Smart Port: Detail Design for the Implementation Scheme	47	Government	N/A		Q1 2017	
PX-CS1	Design, survey, project supervision, etc. (Pingxiang Border Trade Comprehensive Service Center)	1,213	Government	N/A		Q1 2017	
PX-CS1	Design, survey, project supervision, etc. (Pingxiang Cross-border Labor Cooperation Park)	1,517	Government	N/A		Q1 2017	

## **National Competitive Bidding**

### **A. Regulation and Reference Documents**

41. The procedures to be followed for national competitive bidding shall be those set forth in *The Government Procurement Law of People's Republic of China* approved on 29 June 2002 and *Law of the People's Republic of China on Bid Invitation and Bidding* promulgated on August 30, 1999 with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of the *ADB Procurement Guidelines*.

### **B. Procurement Procedures**

**1. Competitive Bidding Procedure** (Procurement Law Art. 26 and Law on Bidding Art. 10).

42. Public tendering is the acceptable method of government procurement, and public invitation is the accepted bid invitation mode.

#### **2. Eligibility**

43. The eligibility of bidders shall be as defined under section I of the Procurement Guidelines; accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those provided in section I of the Guidelines, as amended from time to time.

#### **3. Advertising**

44. All invitations to prequalify or to bid shall be advertised in the national press (China Daily Newspaper) or a free and open access website ([www.chinabidding.com](http://www.chinabidding.com)). 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 twenty-eight (28) 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.

#### **4. Bidding Period**

45. The minimum bidding period is 28 days prior to the deadline for the submission of bids.

#### **5. Participation by Government-Owned Enterprises**

46. 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.

#### **6. Rebidding**

47. Rebidding shall not be allowed solely because the number of bids is less than three (3).



## **C. Bidding Documents**

### **7. Qualification requirements**

48. 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.

### **8. Bid Submission and Opening**

49. Bidders shall be allowed to submit bids by mail or by hand.

50. 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.

### **9. Bid Evaluation and Award**

51. 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.

52. 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.

### **10. ADB Policy Clauses**

53. 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.

54. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question.

55. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB-financed contract.

**D. Consultant's Terms of Reference**

56. The detailed terms of reference of consulting services are given under the descriptions of respective project advisory support summary and the summary on project management and capacity building in Attachment 1.

## VII. SAFEGUARDS

57. **Safeguards classifications.** Tranche 1 of the multitranche financing facility (MFF) is classified as B for environment, C for involuntary resettlement, and B for indigenous peoples. Each subsequent tranche will be screened, categorized and assessed using the safeguard procedures set out in the program environment assessment review framework (Attachment 2), resettlement framework (Attachment 3) and indigenous peoples planning framework (Attachment 4) which have been developed for the facility in accordance with ADB Safeguard Policy Statement (2009).<sup>16</sup>

58. **Grievance redress mechanism.** Government of Guangxi Zhuang Autonomous Region through Guangxi Foreign Loans Project Management Office (GPMO) will establish the project safeguards grievance redress mechanism (GRM) within 60 days of the loan effectiveness date, as detailed in the environmental management plan (EMP) (Attachment 5) and environmental and social management system (ESMS) (Attachment 6). The GRM sets out procedures for managing public concerns and safeguard issues which may arise during project implementation. The GRM will be established prior to any advance construction works. The GRM comprises a set of clear procedures to receive, record, and address any concerns or complaints raised and provides contact details of individuals from the GPMO, implementing agencies, PIEs, and contractors teams, and other relevant safeguard authorities and stakeholders within project administration authorities. All contractors will be briefed by the GPMO on the project safeguards GRM. Multiple entry points to the GRM will be available including verbal and written complaints, hotline number, anonymous dropboxes, and/or e-mail. The GPMO will report complaints and their resolution to ADB in quarterly project progress reports and safeguard monitoring reports.

59. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement, ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement. All GPMO, implementing agencies and PIEs will ensure that their investments are in compliance with applicable national laws and regulations and will apply the prohibited investment activities list to subprojects financed by ADB.

### Environment

60. An **environmental assessment and review framework (EARF)** has been prepared to categorize and provide guidance on environmental safeguards for subsequent tranches of the MFF. These documents comply with the People's Republic of China's (PRC) regulatory requirements and ADB's Safeguard Policy Statement, and will be disclosed on the ADB website prior to board consideration.

61. **Environmental assessment, reports and approvals.** The 10 subprojects proposed through Tranche 1 have been classified by ADB as category B for environment. A consolidated initial environmental examination (IEE) and EMP have been prepared based on information provided in the domestic environment impact tables (EITs), feasibility study reports (FSRs) and site reconnaissance by the PPTA Consultants. The EIT for subproject 1 was approved by the Fangchenggang Environment Protection Bureau (EPB) in 2013. The EITs for subprojects 2 and 6 were approved by Pingxiang EPB in 2016. The IEE was disclosed on 25 October 2016. The IEE and EMP focus on the three subprojects that have infrastructure components.

---

<sup>16</sup> ADB. 2009. *Safeguard Policy Statement*. Manila.

62. **Environmental impacts.** During the construction of the buildings and facilities, potential impacts would include dust, noise and management of wastewater and solid waste. Land take is minor, about 16.3 hectares, in total and mostly within existing disturbed sites. During operation potential impacts are mostly occupational hazards related to proposed workshop reprocessing and finishing activities, and storage and management of refrigerant for the cold storage facility. A wildlife trafficking study has been carried out and a capacity building program for border officials is proposed to support wildlife law enforcement.

63. **Environment budget.** The EMP outlines potential impacts, mitigation and monitoring measures, institutional arrangements, training requirements, and an environment implementation budget. A budget of \$1,191,000 has been allocated for environmental mitigation and monitoring, which is about 0.5% of the total tranche 1 cost and about 3% of the total cost for the three infrastructure subprojects. Excluded from the budget are infrastructure costs which relate to environment and public health but which are already included in the civil works costs and remuneration for the GPMO environment focal point. The PIEs will bear the cost of environmental supervision engineers during construction (\$615,000) and environmental monitoring costs during operation. Contractors will bear the costs for all mitigation measures during construction, including those specified in the tender and contract documents (\$394,000) as well as those to mitigate unforeseen impacts due to their construction activities. Training (\$15,000), public consultation (\$10,000), costs of the Project Management Consultancy (PMC) environment specialist (\$100,000), external environmental monitor (\$50,000), wildlife trafficking specialist (\$30,000) and environmental quality monitoring (\$57,000) will be funded through the ADB loan (See EMP Table EMP-9: Estimated Budget for Environmental Management Plan Implementation). During implementation, records of actual budget should be maintained and included in the project completion report.

64. **Environmental management during implementation.** The responsible parties for environmental management and supervision during implementation are outlined in Table 20.

**Table 20: Environmental Management and Supervision**

Agency	Environmental Management Roles and Responsibilities
GZAR	The executing agency for the project responsible for overall implementation and compliance with loan assurances and the initial environmental examination (IEE), environmental management plan (EMP), environment assessment and review framework (EARF) and environment and social management system (ESMS).
Guangxi Foreign Loans Project Management Office (GPMO)	Established by the executing agency to be responsible for the day-to-day management of the project. Has overall responsibility delegated by the executing agency for supervising the implementation of environmental mitigation measures, coordinating the project level grievance redress mechanism (GRM), public consultation plan, and reporting to the Asian Development Bank (ADB).
Guangxi Branch of Bank of Communications (BOCOM) - financial intermediary for SME component	BOCOM will establish an Environment and Social Unit (ESU) to undertake screening and classification of investments to ensure that category A projects are excluded and that appropriate environmental assessment, management and reporting is carried out in accordance with the ESMS.
Project Implementing Entities (PIEs)	Responsible for day-to-day management during project preparation and implementation periods, assigns an environmental focal point to supervise the implementation of EMP, and liaise between GPMO and implementing agencies. Engage environmental supervision engineer through construction supervision consultancy to carry out day-to-day supervision.

Agency	Environmental Management Roles and Responsibilities
Contractors	Construction contractors will develop site-specific EMPs on the basis of the project EMP and will be responsible for implementing mitigation measures during construction under the supervision of the environmental supervision engineers.
Environment Specialist appointed through Project Management Consultancy (PMC) services	Overall management support and capacity building on environment for subproject tranche 1 in accordance with the IEE, EMP and ESMS and project preparation for tranche 2 in accordance with the EARF.
Environmental Supervision Engineers (ESE)	Responsible for supervising construction progress and quality and EMP implementation on construction sites, including (i) contractor's EMP implementation performance; and (ii) preparation of the contractor's environmental management performance section in monthly project progress reports to be submitted to the implementing agencies and GPMO.
External Environmental Monitor (EEM)	Provide technical assistance to the PMO, implementing agencies, and contractors to implement the EMP. Review updated EMP and confirm that mitigation measures have been included in the detailed engineering design. Review bidding documents to ensure that the EMP clauses are incorporated. Advise on mitigation measures, provide technical support, and conduct environmental training. Conduct semiannual EMP compliance audit, support GPMO in preparing environment section of project progress reports, annual environmental monitoring, and project completion report.
ADB	Monitor and supervise the overall environmental performance of the project, conduct review missions, review environment issues and advise on corrective actions, review the annual environment monitoring reports and disclose the reports on ADB website upon receipt (within 14 calendar days) in line with ADB Public Communications Policy (2011). Ensure GRM is established and is operating effectively.
County Environmental Monitoring Station or Certified Environmental Entity	Conduct environmental quality monitoring (air, noise, and water) according to the EMP monitoring plan and submit monitoring results to the PMO on a monthly basis.
County Environmental Protection Bureaus	Inspect the subprojects during construction and operation to ensure compliance and enforce applicable environmental laws and regulations.

65. **Capacity development and training.** The capacity of GPMO, the implementing agency, and PIEs to coordinate environmental management will be strengthened through the appointment of qualified staff within the GPMO and each PIE as environmental focal points in charge of EMP coordination, implementation and site inspections including GRM. An Environment Specialist will be appointed through the PMC services to provide overall environmental management support for implementation of tranche 1 and preparation of tranche 2. The PMC will also include appointment of an External Environmental Monitor (EEM) to guide GPMO and PIEs in implementing the EMP and ensuring compliance with ADB's Safeguard Policy Statement. PMC will also include appointment of the local environmental monitoring station to undertake environmental quality monitoring. Each PIE will also commission an independent Environmental Supervision Engineer (ESE) to provide independent monitoring and verification of EMP implementation.

66. The capacity of GPMO, PIEs and contractors' staff responsible for EMP implementation and supervision will be strengthened through the appointment of qualified staff and training. All parties involved in implementing and supervising the EMP must have an understanding of the goals, methods, and practices of project environmental management. A training plan is included

in the EMP (see Table EMP-7: Training Program).

67. **Consultation.** Proposed public consultation during construction and operation stages are set out in the EMP (Table EMP-8: Public Consultation Plan). Proposals include site visits, interviews, workshops and investigation of specific issues.

68. **Climate risk and vulnerability assessment.** The project area of the investment program is characterized by complex geology and has frequent geological disasters, such as landslide and is at high risk from climate change impacts. A climate risk and vulnerability assessment indicated that there will be an increased risk of extreme rainfall events, flooding, landslides and heatwave. It is recommended that an 8-10% increase in design standard is adopted for the drainage systems and a higher design standard is considered for slope stabilization to ensure resilience to future climate change impacts. Recommendations are also made to reduce risk of heatwave impacts, such as appropriate specification of building materials, provision of adequate ventilation, air conditioning, covered walkways and training and preparedness for heatwave. An assurance requiring consideration of climate change recommendations has been included in the project agreement. The incremental cost of adaptation is estimated to be \$6.0 million. This will be confirmed following the detailed design.

### **Land Acquisition and Resettlement**

69. Tranche 1 of the Investment Program is classified as category C for Involuntary Resettlement (IR). Land for all the three subprojects involving infrastructure was acquired not in anticipation of ADB financing. Three due diligence reports (DDRs) have been prepared that confirms that there are no gaps with ADB's Safeguard Policy Statement. The DDRs states that all land acquisition undertaken by local governments is in compliance with the PRC's Land Law (1999) and other related regulations and do not have any pending LAR issues. No additional collective land acquisition and house demolition will be induced as a result of the Investment Program. In 2013, a total land area of 247.5 mu was acquired for the Fangchenggang Training Center for PRC and Vietnamese Workers and SMEs including 27.035 mu for developing the Pingxiang Cross-border Labor Cooperation Demonstration Park.<sup>17</sup> There is no outstanding noncompliance issue or complaints. Land acquisition did not affect the villager's income. Cash compensation improved their living and production conditions. In addition, local government allocated additional funds of CNY2 million to improve the village road, water and power supply, and the funds were utilized for given purpose. Meaningful consultation activities were conducted, and all the affected persons' concerns were addressed well. GRM was established and there was no grievance received during implementation. For the Expansion of Pingxiang Border Trade Service Center, 165.67 mu was acquired in 1993. All construction will be on the existing state-owned land, and the Pingxiang Urban Construction Investment Company obtained the state-owned land using right in May 2015. A resettlement framework (RF) is prepared to guide preparation of resettlement plan (RPs) for the subsequent tranches, as required.

---

<sup>17</sup> mu = Chinese unit of measurement (1 mu = 666.7 square meters)

No.	Subproject	Area of land (mu)	Year of land acquisition
1	Construction of Fangchenggang Training Center for PRC and Vietnamese Workers and SMEs	247.5	2013
2	Development of Pingxiang Cross-border Labor Cooperation Demonstration Park	27.035	2013
3	Expansion of Pingxiang Border Trade Service Center	165.67	1993

Source: Asian Development Bank.

### Indigenous Peoples/Ethnic Minorities

70. Although Zhuang, Han, Jing, Miao, Yao are officially designated as the long-dwelling ethnic groups in the project areas, the Zhuang constitute the dominant population and there is no concentrated settlement of any other ethnic group. Based on due diligence in accordance with the Safeguard Policy Statement, it is confirmed that tranche 1 will not incur any adverse impacts on ethnic minorities. Indigenous Peoples Plan elements were included in the project design following Paragraph 17 of Safeguard Requirement 3 (Indigenous Peoples). An Indigenous Peoples Planning Framework was prepared to guide the preparation of any Indigenous Peoples Plan for further tranches. Each subsequent tranche of the MFF will be screened, classified and assessed in accordance with the Indigenous Peoples Planning Framework.

### Environmental and Social Management System

71. The SME financing subcomponent is categorized as financial intermediary. BOCOM has developed an ESMS covering environmental and social policies; safeguards screening, categorization and review process; institutional arrangements; and monitoring and reporting procedures for subprojects under the FIL. A social compliance audit confirmed that BOCOM has sufficient capacity to implement the system. The ESMS will exclude subprojects that will trigger category A for environment and category A or B for social safeguards, and that are in the prohibited investment list as per ADB Safeguard Policy Statement. Subprojects classified as category B or C for environment will be subject to requirements set out in the ESMS. As part of ESMS, the Environmental and Social Unit of the financial intermediary would submit to ADB for prior review and approval the proposed safeguards classifications and a project description for the first two subprojects of a target sector classified as environment category B. If satisfactory, then other subprojects will only be subject to post review in the annual environmental monitoring report. ESMS will ensure that SMEs supported are not engaged in commercial development of cultural resources of indigenous peoples without their consent. Each subproject will undergo due diligence based on the criteria in the ESMS. The GPMO will be required to submit an annual ESMS performance report.

## VIII. GENDER AND SOCIAL DIMENSIONS

72. Focus group discussions and interviews with women's federations and local women revealed that gender issues have long been the main focus of local governments. The local women's federations have been advocating for women's interests to improve their economic situation. Women's federations of each county and/or city, in coordination with various local government departments (particularly public security bureaus and courts) and nongovernment institutions, have been making great efforts to guarantee women's rights in families and communities and to improve their living conditions. E-commerce is one of the important trainings the women's federation is providing to women in border areas. The investment program will strengthen the efforts of the local government on gender mainstreaming and empowerment.

### **Social Development and Gender Action Plan**

73. The strategy for the social development and gender action plan (SGAP) is to develop a strong socioeconomic base upon which communities, government agencies, and the subprojects can be built. The focus will be on building the capacity of communities to respond to the opportunities created by the subprojects to ensure that there is equitable participation of women and benefits are maximized for the community with positive gender impacts. Based on the findings of the poverty and social analysis, the suggested outputs of SGAP will include the following:

- (i) Creation of employment opportunities during project construction and operation
- (ii) Enhancement of capacity of community development and regional cooperation
- (iii) Enhancement and prevention of communicable diseases and human trafficking
- (iv) Institutional strengthening and capacity building for project implementation and management

74. The SGAP is intended to help maximize the project benefit through: (i) training of PRC and Vietnamese workers (particularly the local villagers) with careful consideration of the needs from different social groups of gender, ethnicity and vulnerability; (ii) promoting cross-border trade opportunities for the local people; (iii) creating more job opportunities and made available to the local people in consideration of their gender, ethnicity and vulnerability; (iv) enhancing the awareness and prevention of communicable diseases which are common or have the potential to become epidemic in the project areas.

75. While the precise nature of the maximizing activities to be undertaken will only be known after a period of participatory planning among the affected communities, the proposed activities, targets, responsible agencies, monitoring indicators, budget and time are included in Table 21.



**Table 21: Social Development and Gender Action Plan –Tranche 1**

<b>Proposed Activities</b>	<b>Action</b>	<b>Monitoring Indicators</b>	<b>Responsible Agencies</b>	<b>Budget</b>
<b>Output 1: Creation of Employment opportunities during the Project</b>				
Employment opportunities created during the construction period	60% of the unskilled workforce will be employed from the local area, of which 33% will be women. Of the unskilled workforce employed, at least 10% should come from poor households.	(i) Number of the local unskilled workers employed from the local area (ii) Out of total local unskilled workers employed <ul style="list-style-type: none"> <li>Number of women workers</li> <li>Number of the unskilled workers employed from poor households</li> </ul>	FPTVS, PUCIC, BBIC	Additional fund not required
Employment opportunities created during the operation period	(i) 60% of unskilled workers will be employed from the local areas (including Vietnamese workers), with preferential consideration for poor, vulnerable, women and ethnic minorities.  (ii) 70% of the workers employed from the local areas of which 50% women are trained.	(i) Number of the local unskilled workers employed from the local area (ii) Out of total local unskilled workers employed <ul style="list-style-type: none"> <li>Number of women workers</li> <li>Number of worker from poor, vulnerable households</li> <li>Number of workers from ethnic minorities</li> </ul>	FPTVS, PUCIC, BBIC, GPMU, WF, PMO and other local government agencies	Additional fund not required
<b>Output 2: Enhancement of Capacity of Community development and regional cooperation</b>				
Identification of vulnerable groups	Identification of the vulnerable groups in the local communities, regardless of their gender or ethnic identities.	(i) Number of vulnerable people identified in line with the definition mentioned in ADB's Safeguard Policy Statement (2009)	Social Development Specialist with GPMO, IAs and other governmental agencies	Project budget
Encourage local people to participate actively in the community development and regional	Local people are consulted and encouraged to participate in the designing, implementation and management of the	(ii) Number of local people who participated in design and management of community development and regional cooperation	Village Committees with implementing agencies under the coordination	Additional fund is not required

<b>Proposed Activities</b>	<b>Action</b>	<b>Monitoring Indicators</b>	<b>Responsible Agencies</b>	<b>Budget</b>
cooperation plan and its implementation	community development and regional cooperation together with implementing agencies.	(iii) Number of women members who participated in these consultations	of GPMO	
Improvement of the economic status of local people through cross-border trade	Encouragement and capacity enhancement of the local people to participate in cross-border trade.	(i) Number of people especially women who participate in capacity building trainings (particularly e-commerce) (ii) Number of people especially women who participate in cross-border trade (iii) Amount of income generated for each household (iv) Access and control over income by women members of the family (v) Number of income resources generated through cross-border trade	FPTVS, PUCIC, BBIC, PMU, WF, GPMO and other local government agencies	Additional fund is not required
Counseling on business plan preparation and starting new business	Capacity building of local people on business plan preparation to initiate new business.	(i) Number of counseling sessions undertaken (ii) Number of local people and women counselled (iii) Number of new business initiated by women and other members of community	GPMO, PMU, WF and other local government agencies	Project budget
<b>Output 3. Enhancement of Awareness on and Prevention of Communicable Diseases and Human Trafficking</b>				
Awareness, prevention, and monitoring of the communicable diseases and human trafficking	All workers understand dangers of communicable diseases (HIV/AIDS) and human trafficking.  Testing and medical	(i) Number of posters/ pamphlets/ meetings/ workshops organized to create awareness on communicable diseases and human trafficking (ii) Number of workers m	Executing agency, implementing agencies, county health departments, and civil	Included in local government regular health work

Proposed Activities	Action	Monitoring Indicators	Responsible Agencies	Budget
	<p>referral service for workers and local residents. Carry out health checks for the project-related staff.</p> <p>Ensure provision of condoms in the entertainment center.</p> <p>Awareness campaigns and training on HIV/AIDS, sexually transmitted diseases and human trafficking.</p>	<p>ade aware of the dangers of communicable diseases and human trafficking</p> <p>(iii) Number of people tested for communicable diseases</p>	affairs bureaus	
<b>Output 4: Institutional Strengthening and Capacity Building for Project Implementation and Management</b>				
Capacity building of executing agency and implementing agency staff on gender and social development	<p>Provide SGAP orientation to key executing agency/implementing agency staff (each subproject has at least one training).</p> <p>Engage a social development gender specialist to design and implement training on gender and social development.</p>	<p>(i) Number of trainings organized</p> <p>(ii) Number of staff trained</p>	Executing agency, implementing agencies, social development specialist	Included in the training program

ADB = Asian Development Bank, BBIC = Baise Baidong Investment Company, FPTVS = Fangchenggang Poly Technic Vocational School, GRIP = Guangxi Regional Cooperation and Integration Promotion Investment Program, GPMO = Guangxi project management office, PMU = project management unit, PUCIC = Pingxiang Urban Construction and Investment Company, SGAP = social development and gender action plan, WF = Women's Federation.

Source: Asian Development Bank.

### Budget and implementation arrangement

76. A Social Development/Gender Specialist consultant support will provide guidance for implementation of the SGAP, which will be financed as part of the project budget, and will be implemented over the life of the project. With support from the gender specialist, the executing agency will be responsible for coordinating implementation of the plan and will assign a focal point to coordinate the SGAP implementation. The local units of Women's Federation (WF) will also participate in implementation of the SGAP.

## **Monitoring and evaluation**

77. SGAP monitoring and evaluation will be incorporated into the overall monitoring and evaluation plan for the project. The social development/gender specialist consultant(s) will work with the executing agency and implementing agencies to orient them on SGAP requirements and develop a detailed implementation and monitoring plan for gender activities. The specialist(s) will also provide guidance to drafting the first SGAP implementation progress report, and review the subsequent reports prepared by the implementing agencies and will submit annual reports to the executing agency and ADB. Updated information on the status of SGAP implementation shall be included in all project progress reports. ADB staff with expertise in gender issues will participate in the midterm review.

## **Poverty and Social**

78. A social and poverty analysis was conducted in accordance with ADB guidelines. The poverty rates are 3.59% in Fangchenggang, 16.50% in Baise, 13.74% in Chongzuo, and 4.20% in Qinzhou in 2015 against the provincial average of 8.2%.<sup>18</sup> The investment program will contribute to economic growth in border areas and beyond in the PRC and Viet Nam. The improved cross-border connectivity and increased trade and investment will facilitate growth, create employment opportunities for local communities during the construction and operation phases, and raise the income of local residents. Local and Vietnamese unskilled workers, over one third of which are women, will be trained for better employment. All construction workers will be covered by the awareness campaigns and training on HIV/AIDS, sexually transmitted infections, and human trafficking. A social development and gender action plan has been prepared and will be implemented to strengthen the investment program impact. The project will collect and include gender-disaggregated data as part of the social and poverty analysis.

79. The Investment Program aims to contribute to economic growth in border areas and beyond in PRC and Viet Nam. The cross-border transactions and improved connectivity across the border will facilitate growth, create employment opportunities during construction and operation phase for local communities, and raise their income. 60% of the unskilled workers will be employed from the local area with 33% women if conditions are qualified. For the project operation phase, 60% of unskilled workers will be employed from the local areas (including Vietnamese workers) that will undergo skill training for better employment. Out of this, at least 50% will be women. 100% construction workers will be covered through the awareness campaigns and training on HIV/AIDS, sexually-transmitted diseases and human trafficking. A social development and gender action plan includes the above measures, which will be implemented in collaboration with local concerned departments to strengthen the program impact.

---

<sup>18</sup> Targeted Poverty Incidence Survey issued by the Guangxi Poverty Reduction Office, January 2016.

**IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION**

**A. Project Design and Monitoring Framework**

<b>Impacts the Investment Program is Aligned With</b>			
Economic growth potential for border areas in the PRC and Viet Nam realized (Strategy and Action Plan for Participation in the Greater Mekong Subregion Economic Cooperation Program) <sup>a</sup>			
Efficient transport and trade operations along GMS North–South Economic Corridor achieved (GMS North–South Economic Corridor Strategy and Action Plan) <sup>b</sup>			
Economic integration between GZAR and rest of the GMS further strengthened (Strategy and Action Plan for Participation in the Greater Mekong Subregion Economic Cooperation Program) <sup>a</sup>			
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Data Sources or Reporting Mechanisms</b>	<b>Risks</b>
<b>Outcome</b> Benefits of regional cooperation and integration in border areas of Guangxi and northern Viet Nam captured	By 2025 a. Cross-border trade between GZAR and Viet Nam doubled (2015 baseline: \$16.3 billion) b. Annual cross-border investment between GZAR and Viet Nam tripled (2015 baseline: \$77 million, including \$27 million of GZAR investment in Viet Nam, and \$ 50 million of Viet Nam’s investment in GZAR)	a–b. Periodic reports to the GMS Economic Corridor Forum  a–b. BEZ task force reports to GMS Governors Forum	Weak coordination between the governments of the PRC and Viet Nam on border area development.
<b>Outputs</b> 1. Support for SMEs in border areas expanded	1a. By 2022, the ratio of PRC and Vietnamese SMEs serviced by SME financing platforms in Baise, Chongzuo, Fangchenggang, and Qinzhou border prefectures doubled (2015 baseline: 10%) 1b. By 2022, business development services platform established to benefit both PRC and Vietnamese SMEs (2015 baseline: Not applicable) 1c. By 2022, the number of SME workers trained by local institutions in Baise, Chongzuo, Fangchenggang, and	1a–1c. Quarterly progress reports from executing and implementing agencies	Weak institutional and staff capacities to implement the project, particularly for procurement.  Weak capacity of executing agency and financial intermediary in implementing financial intermediation loan.  Weak capacity of PIEs for internal auditing.  Weak financial sustainability of PUCIC.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
<p>2. Cross-border financial transactions and investments increased</p> <p>3. Integrated and interoperable cross-border e-commerce platforms for the PRC and Viet Nam developed</p> <p>4. Key infrastructure and trade-related services in BEZs provided</p>	<p>Qinzhou tripled—with share of Vietnamese reaching 20% and female reaching 33% of total workers (2015 baseline: 9,000)</p> <p>2a. By 2024, cross-border trade settlement in local currencies in GZAR doubled (2015 baseline: \$26 billion equivalent)</p> <p>2b. By 2021, policy recommendations for mitigating non-commercial risks for cross-border investment between GZAR and Viet Nam adopted (2015 baseline: Not applicable)</p> <p>3a. By 2022, ratio of cross-border trade conducted through e-commerce reaches 25% (2015 baseline: 10%)</p> <p>3b. By 2022, 70% of SMEs in border areas have access to e-commerce platforms</p> <p>4a. By 2024, 70% of investments in GZAR BEZs under the PRC–Viet Nam Joint Master Plan for Border Economic Zone Development realized (2015 baseline: Not applicable)</p> <p>4b. By 2024, road networks in Dongxing, Longbang and Pingxiang BEZs and Shuolong border crossing point fully completed (2015 baseline: Not applicable)</p> <p>4c. By 2024, water supply and sewage treatment facilities in Chongzuo and Yuexu industrial parks completed and operational (2015 baseline: Not applicable)</p> <p>4d. By 2018, coordinated</p>	<p>2a–2b. Quarterly progress reports from executing and implementing agencies</p> <p>3a–3b. Quarterly progress reports from executing and implementing agencies</p> <p>4a. Quarterly progress reports from executing and implementing agencies</p> <p>4b. Quarterly progress reports from executing and implementing agencies</p> <p>4c. Quarterly progress reports from executing and implementing agencies</p> <p>4d. Updates from BEZ</p>	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources or Reporting Mechanisms	Risks
5. Physical and informational connectivity and policy coordination improved	border management conducted in at least one border-crossing point (2015 baseline: 0)  5a. By 2024, number of class A border-crossing points increased to five (2015 baseline: 3)  5b. By 2018, regular (quarterly) consultations between GZAR and Viet Nam northern border provinces on BEZ and border area development conducted (2015 baseline: Ad hoc consultations)	task force to GMS Governors Forum  5a–5b. Quarterly progress reports from executing and implementing agencies	
<p><b>Key Activities with Milestones</b></p> <p>1. Support for SMEs in border areas expanded  1.1 Complete tranche 1 implementation by Q4 2021  1.2 Complete tranche 2 implementation by Q4 2022</p> <p>2. Cross-border financial transactions and investments increased  2.1 Complete tranche 2 implementation by Q4 2022  2.2 Complete tranche 3 implementation by Q4 2024</p> <p>3. Integrated and interoperable cross-border e-commerce platforms for the PRC and Viet Nam developed  3.1 Complete tranche 1 implementation by Q4 2021  3.2 Complete tranche 2 implementation by Q4 2022  3.3 Complete tranche 3 implementation by Q4 2024</p> <p>4. Key infrastructure and trade-related services in BEZs provided  4.1 Complete tranche 1 implementation by Q4 2021  4.2 Complete tranche 2 implementation by Q4 2022  4.3 Complete tranche 3 implementation by Q4 2024</p> <p>5. Physical and informational connectivity and policy coordination improved  5.1 Complete tranche 2 implementation by Q4 2022  5.2 Complete tranche 3 implementation by Q4 2024</p>			
<p><b>Project Management Activities</b></p> <p>Prepare and manage implementation and procurement plans (Q2 2017–Q4 2024)  Prepare and update monitoring and evaluation system and ensure timely delivery of outputs (Q2 2017–Q4 2024)</p>			
<p><b>Inputs</b></p> <p>Asian Development Bank: \$450,000,000  Government of the PRC: \$730,000,000</p>			
<p><b>Assumptions for Partner Financing</b></p> <p>Not applicable</p>			

BEZ = border economic zone, GMS = Greater Mekong Subregion, GZAR = Guangxi Zhuang Autonomous Region, PIE = project implementing entity, PRC = People's Republic of China, PUCIC = Pingxiang Urban Construction and Investment Company, Q = quarter, SMEs = small and medium-sized enterprises.

<sup>a</sup> Government of Guangxi Zhuang Autonomous Region. 2014. *Strategy and Action Plan for Participation in the Greater Mekong Subregion Economic Cooperation Program, 2014–2022*. Nanning.

<sup>b</sup> ADB. 2010. *Strategy and Action Plan for the Greater Mekong Subregion North–South Economic Corridor*. Manila.

Source: Asian Development Bank.

## B. Monitoring

80. **Project performance monitoring.** The project performance monitoring system (PPMS) indicators as specified in the design and monitoring framework, will include (i) gross domestic product growth, (ii) Guangxi's cross-border trade with Viet Nam etc. At the start of project implementation, the executing agency, implementing agencies, and PIEs, with support from the project management consultants, will develop comprehensive PPMS procedures to generate data systematically on project outcome, inputs, and outputs of each component. These will be used to measure the project impact, outcome, output, and compliance with ADB safeguard policy requirements. The executing agency will (i) refine the PPMS framework, (ii) establish and/or verify the baselines, (iii) confirm achievable targets, (iv) finalize the monitoring and recording arrangements, and (v) establish data collection systems and reporting procedures no later than nine months after loan effectiveness. In the design and development of the PPMS framework, special attention for this MFF program will be paid to the demonstration effect of the project in tranches, which should enable systematic data collection and analysis for dissemination of the lessons, experiences and knowledge products to cities beyond four cities in border area. Disaggregated baseline data and output and outcome indicators gathered during project processing will be updated and reported quarterly through the quarterly progress reports and after each ADB review mission. These quarterly reports will provide information necessary to update ADB's project performance reporting system.<sup>19</sup>

81. GPMO and the PIU for Expansion of Pingxiang Border Trade Service Center (subproject 6) will ensure that (i) operation of the center will commence only after the commissioning of either the wastewater treatment station on the neighboring Pingxiang Border Trade Logistics Center or the Kafeng Wastewater Treatment Plant, whichever is sooner for treatment wastewater generated from this subproject; (ii) the design for liquid ammonia storage in the cold storage facility conforms to applicable standards; (iii) personal protective equipment is provided to workers working in the liquid ammonia storage room; and (iv) an emergency response plan is prepared; and (v) training on the use of liquid ammonia, handling of liquid ammonia drums and emergency response is organized.

82. **Compliance monitoring.** The executing agency, with assistance of the implementing agencies, PIEs, and the project management consulting service will conduct compliance monitoring, submit periodic (at least semi-annual) reports to ADB concerning the use of the loan proceeds, project implementation, project implementation performance, and compliance of loan and project covenants. These reports will include (i) progress reports on project implementation including resettlement, ethnic minority elements and SGAP; (ii) consolidated annual reports; (iii) annual environmental progress report; (iv) annual ESMS performance report, (v) semi-annual external resettlement monitoring report including ethnic minority elements and SGAP; and (vi) a project completion report, which should be submitted not later than three months after the completion of the project facilities. The compliance status of loan and project covenants will be reported and assessed through quarterly progress report and consolidated annual reports. ADB review missions will verify the status.

83. **Safeguards monitoring.** Implementation of EMP and RPs will be monitored by internal and external environment, resettlement and social development specialists.

84. **Environmental compliance monitoring.** Three types of project monitoring will be

---

<sup>19</sup> ADB's project performance reporting system is available at <http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>



conducted under the EMP:

- (i) Project readiness monitoring: Conducted by the EEM or GPMO environmental focal point (under the support of EEM);
- (ii) Environmental quality monitoring: Conducted by local EMS (contracted by the PIUs) involving the collection and analyses of air quality and noise data at designated monitoring locations to assess compliance with applicable environmental quality and emission standards during construction; and
- (iii) Compliance monitoring or auditing: Conducted by the ESE (contracted by the PIUs) and EEM to verify EMP compliance during project implementation. The EEM will function as an external monitor/auditor for ADB.

85. The Environmental Supervision Engineers will carry out day-to-day supervision of implementation of the EMP. The EEM will visit the project sites twice a year and support GPMO in developing the quarterly project progress reports and the annual EMRs. The reports should confirm the project's compliance with the EMP and local legislation, identify any environment-related implementation issues and necessary corrective actions. Operation and performance of the project GRM, environmental institutional strengthening and training, public consultation, compliance with all covenants under the project and site photographs will also be included in the report. A template for the environmental monitoring report is included in Attachment 7.

86. ADB will oversee project compliance on the basis of the quarterly project progress reports and annual environmental monitoring reports provided by GPMO and review missions (generally 1-2 times/year). Monitoring and reporting arrangements for the three subprojects are described below.

87. **Land acquisition and Resettlement:** Internal and external monitoring will be conducted. GPMO will carry out internal supervision and monitoring to ensure compliance with local regulations and ADB's Safeguard Policy Statement.

88. **Internal Progress and Monitoring by GPMO for each tranche:** The monitoring scope includes (i) investigation, coordination of and suggestion on key issues of the resettlement and implementing agencies during implementation; (ii) status of land acquisition and house demolition and any variations from the final resettlement plan; (iii) restoration of the household income of the affected persons after land acquisition; (iv) preparation of housing site and relocation; (v) restoration and resettlement of women and vulnerable persons; (vi) payment, use and availability of compensation fees for resettlement; (vii) degree of public participation and consultation during resettlement; (viii) livelihood training and job arrangement. The GPMO shall submit an internal monitoring report to ADB quarterly. Such report shall indicate the statistics of the past months in tables, and reflect the progress of LA, HD, relocation and payment and use of compensation. GPMO will also be responsible to prepare a resettlement completion report; this can be done in conjunction with the external monitor.

89. **External Monitoring by Independent Agency for the facility:** GPMO shall employ a qualified, independent and experienced agency as the external M&E agency for resettlement using loan proceeds. The external agency shall conduct baseline survey, follow-up monitoring and evaluation (M&E) of resettlement activities periodically, monitor resettlement progress, livelihood restoration, and advise GPMO. The external M&E agency will attend public consultation meetings held during resettlement implementation to evaluate the effectiveness of

public participation. The external M&E agency will visit the affected villages and groups regularly, and interview the township government and implementing agency to evaluate about how grievances have been handled. It will also meet complainants, and propose corrective measures and advice for existing issues so as to make the resettlement process more effective.

90. It will also conduct follow-up monitoring of the APs satisfaction levels and living standards and submit M&E reports to GPMO for their review, follow-up and disclosure to APs. GPMO shall submit the external monitoring report to ADB semiannually for review and disclosure on website. The baseline survey will be carried out before the RP implementation and external monitoring should be conducted semiannually during the implementation of RP and the subproject. After resettlement implementation, the post-evaluation will be conducted to evaluate the Project's resettlement activities on the basis of M&E to (i) confirm the RP objectives have been met and (ii) experience and lessons in land acquisition and property demotion as a reference for future work.

91. Gender and social dimensions monitoring: In accordance with the ADB's PPMS requirement, a monitoring and evaluation plan of poverty and social poverty impacts of the project will be developed during the implementation. A number of key indicators are proposed for monitoring the poverty and social aspects of the project. Aside from the internal monitoring conducted by the project city governments and the project management consulting service, a resettlement and social external monitoring consultant, such as a qualified consulting company or a research institute or individual consultant will be engaged by the GPMO in the analysis on socioeconomic and poverty impacts and monitoring and evaluation. The key indicators in the SGAP will be monitored and included in the PPMS.

### **C. Evaluation**

92. The executing agency, implementing agencies, and ADB will undertake semiannual review mission to evaluate the progress of project implementation. The executing agency, implementing agencies, and ADB will undertake a comprehensive midterm review two years after the start of project implementation to have a detailed evaluation of the scope, implementation arrangements, resettlement, achievement of scheduled targets, and progress on the agenda for policy reform and capacity building measures. Feedback from the PPMS activities will be analyzed. Within three months of physical completion of the project, the executing agency will submit a project completion report to ADB.<sup>20</sup>

### **D. Reporting**

93. The executing agency and implementing agencies have agreed on the following reporting commitments: (i) submission of quarterly progress reports during project implementation in a format consistent with ADB's project performance reporting system, (ii) consolidated annual reports; (iii) submission of semiannual reports on the progress of resettlement safeguards monitoring, i.e., resettlement activities, SGAP implementation including ethnic minority elements; and (iv) a project completion report within three months of physical completion of the project. The consolidated annual report will provide all relevant project implementation including: (i) progress achieved by output as measured through the indicator's performance targets, (ii) key implementation issues and solutions, (iii) updated procurement plan, and (iv) updated implementation plan for next 12 months. The quarterly progress

---

<sup>20</sup> Project completion report format is available at: <http://www.adb.org/Consulting/consultants-toolkits/PCR-Public-Sector-Landscape.rar>

monitoring report will also report the progress made, problems encountered during the period under review, steps taken or proposed remedy to the problems, the proposed program for the planned project implementation activities, progress expected in the following six months, and implementation of the environmental management plan, resettlement plans and ethnic minority development plan if any. To ensure projects continue to be both viable and sustainable, project accounts and the executing agency annual financial statements, together with the associated auditor's report, should be adequately reviewed.

94. The following table summarizes the key reporting requirements during the project implementation.

**Table 22: Key Reporting Requirements**

<b>Related LA/PA Clauses</b>	<b>Name of the Report/Document/Content</b>	<b>Timing of Reporting</b>
<b>Project Implementation Management</b>		
PA Article II, Section 2.09 (a)	- Audited financial statements of the project accounts - Auditor's Report (including Auditor's opinion)	Before 30 June of each year from 2017 throughout the implementation period (six months within the end of each fiscal year)
PA Article II, Section 2.08 (b)	- Quarterly progress reports on project implementation - Consolidated annual report	Every quarter until the completion of the project
PA Article II, Section 2.08 (c)	Project Completion Report	Within three months after the physical completion of the project
<b>Safeguards</b>		
	Annual Environmental and Social Management System Report	Annually until project completion
PA Schedule, Para. 28	Internal Resettlement and Social Monitoring Report	Included in the quarterly progress report
PA Schedule, Para. 28	Semiannual External Resettlement and Social Monitoring Report	Semiannually until the project completion and annually until two years after the completion of the resettlement activities
PA Schedule, Para. 28	Resettlement Completion Report (provided for each resettlement plan)	When the resettlement process is completed
PA Schedule, Para. 35	Internal Environmental Monitoring	Included in the quarterly progress report
PA Schedule, Para. 35	Semi-annual Environmental Progress Report	Semiannually until the project completion and annually until two years after the completion of the project
PA Schedule, Para. 35	Annual Environmental Monitoring Report	Annually until the project completion and annually until two years after the completion of the project
<b>Gender and Social Aspects</b>		
PA Schedule, Para. 42	Progress of Social Action Plan and Gender Action Plan	Reported annually in the consolidated annual report, and verified by the external resettlement and social monitoring report

**E. Stakeholder Communication Strategy**

95. The Stakeholder Communication Strategy is based on the principles of transparency, timeliness, meaningful participation and inclusiveness, especially for this MFF program. The

strategy ensures that vulnerable groups, such as the poor and women, who risk marginalization, are provided opportunities for communication and feedback during subproject design and implementation. For instance, meaningful participation is defined as a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in the Facility Administration Manual.

96. Stakeholders include (i) project direct and indirect beneficiaries with a focus on small business operators and employees of border trade related businesses; (ii) mass organizations; (iii) BEZ and BCP management committees, and PIEs responsible for community-level border social economic development, site management; (iv) private sector operators who share an interest in the outcomes and/or impacts of the project; and (v) government agencies having a role in implementation. The strategy serves to inform and support community development, enhance government capacity to manage project outcomes, and enhance project benefits while mitigating negative impacts.

97. The stakeholder communication strategy is designed to ensure: (i) a regular flow of reliable project information; (ii) ownership over project outcomes and interest and/or willingness to take advantage of the project benefits; (iii) inclusion of vulnerable groups in benefit distribution and project implementation; and (iv) promotion of border regional development.

98. The executing agency and implementing agencies will develop, establish and maintain a dedicated website or new media tools like we-chat public platform for this project. The website or platform will include at a minimum the following information: (i) project document (RRP) and the FAM; (ii) procurement information (bidding procedures, bidders, and contract awards); (iii) annual work plans; (iv) quarterly and annual progress reports and the project completion report; (v) environmental and social safeguards documents; (vi) grievance redress mechanisms; and (vii) technical reports and knowledge products produced by the project. ADB will provide a quarterly update on the program on its website. The executing agency and implementing agencies will provide information on the program on its website or platform to be strengthened and in its annual report.

## **X. ANTICORRUPTION POLICY**

99. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.<sup>21</sup> All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.<sup>22</sup>

100. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the project.

## **XI. ACCOUNTABILITY MECHANISM**

101. 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

---

<sup>21</sup> Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

<sup>22</sup> ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

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 an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>23</sup>

---

<sup>23</sup> Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>

**XII. RECORD OF CHANGES TO THE FACILITY ADMINISTRATION MANUAL**

## Tranche 1 Subproject Summaries

### Subproject 1: Fangchenggang Training Center for PRC and Vietnamese Workers and SMEs

#### A. Project Description

1. The purpose of the project is to improve vocational education for the industrial workers who need skills development through professional training. The project will support the industrial and commercial economic base of Fangchenggang City. About 4,000 Vietnamese laborers are employed in the city mainly due to their low labor cost as labor cost in the People's Republic of China (PRC) has increased over time.

2. The facilities are located within the campus of the Fangchenggang Science and Engineering Vocational School, adjacent to the Fangchenggang Institute of Technology. The buildings of the Fangchenggang training center are described in Table 1.

**Table 1: Summary of Facility**

Item		Area	Unit	Equipment Note	
Total surface area		45,727.8	m <sup>2</sup>		
Total capacity of the area		43,372.9	m <sup>2</sup>		
among them	# 3 training building	6,973.6	m <sup>2</sup>		
	student dormitory	14,655.6	m <sup>2</sup>		
	among them	# 3 quarters	7,327.8	m <sup>2</sup>	Overhead layer containing 319.3 m <sup>2</sup>
		# 4 Hostel	7,327.8	m <sup>2</sup>	Overhead layer containing 319.3 m <sup>2</sup>
	student cafeteria		9,852	m <sup>2</sup>	Including the cafeteria and indoor playground.
	Building Information		9,303.7	m <sup>2</sup>	Including reading room, teacher preparation
	among them	reading room	2,500	m <sup>2</sup>	Space, life and ancillary buildings.
		Teacher preparation space	3,000	m <sup>2</sup>	
		Space management	3,126	m <sup>2</sup>	
		Life ancillary buildings	677.7	m <sup>2</sup>	
	Sports Management and Life ancillary buildings		1,790	m <sup>2</sup>	Life and ancillary space.
	Stadium bleachers		798	m <sup>2</sup>	Life and ancillary space.
	Information Building basement		2,354.9	m <sup>2</sup>	Excluding content
	Teaching and training equipment		Shipment		Including modern logistics, tourism services, electronic commerce, port machinery, vehicle maintenance, electronic information equipment, training and teaching
The number of trainees		2,000			

m<sup>2</sup> = square meter.

Source: Asian Development Bank.



**B. Costs and Financing**

3. The total cost of the Fangchenggang facility will be \$19.10 million of which \$10.00 million will be funded by the Asian Development Bank (ADB) in Tranche 1.

**Table 2: Cost Estimates by Expenditure Category**

(\$ million)			
Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Investment Costs</b>			
1. Civil works	0.00	13.57	13.57
2. Mechanical and equipment	0.00	2.94	2.94
3. Consultants	0.00	0.00	0.00
a. Project management	0.00	0.00	0.00
b. Capacity development	0.00	0.00	0.00
<b>Subtotal (A)</b>	<b>0.00</b>	<b>16.51</b>	<b>16.51</b>
<b>B. Recurrent Costs</b>			
1. Salaries	0.00	0.92	0.92
2. Equipment operation and maintenance	0.00	0.28	0.28
<b>Subtotal (B)</b>	<b>0.00</b>	<b>1.20</b>	<b>1.20</b>
<b>Total Base Cost</b>	<b>0.00</b>	<b>17.71</b>	<b>17.71</b>
<b>C. Contingencies</b>			
1. Physical	0.00	0.40	0.40
2. Price	0.00	0.35	0.35
<b>Subtotal (C)</b>	<b>0.00</b>	<b>0.75</b>	<b>0.75</b>
<b>D. Financial Charges During Implementation</b>			
1. Interest during construction	0.00	0.63	0.63
2. Commitment charges	0.00	0.01	0.01
<b>Subtotal (D)</b>	<b>0.00</b>	<b>0.64</b>	<b>0.64</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>0.00</b>	<b>19.10</b>	<b>19.10</b>

Source: Asian Development Bank estimates.

Table 3: Cost Estimates by Financier (\$ million)

Item	Asian Development Bank		Government		Total Cost
	Amount {A}	% of Cost Category {A/D}	Amount {B}	% of Cost Category {B/D}	
<b>A. Investment Costs</b>					
(i) Civil works	9.36	69.0%	4.21	31.0%	13.57
(ii) Mechanical and equipment	0.00	0.0%	2.94	100.0%	2.94
(iii) Consultants	0.00	0.0%	0.00	0.0%	0.00
<b>Subtotal (A)</b>	<b>9.36</b>	<b>56.7%</b>	<b>7.15</b>	<b>43.3%</b>	<b>16.51</b>
<b>B. Recurrent Costs</b>					
1. Salaries	0.00	0.0%	0.92	100.0%	0.92
2. Equipment operation and maintenance	0.00	0.0%	0.28	100.0%	0.28
<b>Subtotal (B)</b>	<b>0.00</b>	<b>0.0%</b>	<b>1.20</b>	<b>100.0%</b>	<b>1.20</b>
<b>Total Base Cost</b>	<b>9.36</b>	<b>52.9%</b>	<b>8.35</b>	<b>47.1%</b>	<b>17.71</b>
<b>C. Contingencies</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.75</b>	<b>100.0%</b>	<b>0.75</b>
<b>D. Financial Charges During Implementation</b>	<b>0.64</b>	<b>100.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.64</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>10.00</b>	<b>52.4%</b>	<b>9.10</b>	<b>47.6%</b>	<b>19.10</b>
<b>% Total Project Cost</b>		<b>52.4%</b>		<b>47.6%</b>	<b>100%</b>

Source: Asian Development Bank estimates.

Table 4: Cost Estimates by Year (\$ million)

Item	Total Cost	Year 1	Year 2	Year 3	Year 4	Year 5
<b>A. Investment Costs</b>						
1. Civil works	13.57	1.31	12.26	0.00	0.00	0.00
2. Mechanical and equipment	2.94	1.18	1.76	0.00	0.00	0.00
3. Consultants	0.00	0.00	0.00	0.00	0.00	0.00
a. Project management	0.00	0.00	0.00	0.00	0.00	0.00
b. Capacity development	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal (A)</b>	<b>16.51</b>	<b>2.49</b>	<b>14.02</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>B. Recurrent Costs</b>						
1. Salaries	0.92	0.46	0.46	0.00	0.00	0.00
2. Equipment operation and maintenance	0.28	0.11	0.17	0.00	0.00	0.00
<b>Subtotal (B)</b>	<b>1.20</b>	<b>0.57</b>	<b>0.63</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Base Cost</b>	<b>17.71</b>	<b>3.06</b>	<b>14.65</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>C. Contingencies</b>	<b>0.75</b>	<b>0.19</b>	<b>0.56</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>D. Financial Charges During Implementation</b>	<b>0.64</b>	<b>0.02</b>	<b>0.10</b>	<b>0.17</b>	<b>0.17</b>	<b>0.18</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>19.10</b>	<b>3.27</b>	<b>15.31</b>	<b>0.17</b>	<b>0.17</b>	<b>0.18</b>
<b>% Total Project Cost</b>		<b>17%</b>	<b>80%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>

Source: Asian Development Bank estimates.

**C. Procurement Packages****(i) ADB Financing**

<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (\$'000)</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
FGS-C1	Fangchenggang City Poly Tech Vocational School Buildings (5 buildings)	13,330	NCB	Prior	1S1E	Q2 2017	

**(i) Non-ADB Financing****Goods and Works:**

<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
FGS-E1	Fangchenggang City Poly Tech Vocational School: Training Facility and Equipment	1,654	Government	N/A		Q4 2017	
FGS-E2	Fangchenggang City Poly Tech Vocational School: Student Dormitory Facility	500	Government	N/A		Q4 2017	
FGS-E3	Fangchenggang City Poly Tech Vocational School: Teaching Support Equipment	677	Government	N/A		Q4 2017	
FGS-E4	Fangchenggang City Poly Tech Vocational School: Teaching Material (books)	246	Government	N/A		Q4 2017	

## Tranche 1 Subproject Summaries

### Subproject 2: Development of Pingxiang Cross-border Labor Cooperation Demonstration Park

#### A. Project Description

1. The areas of Viet Nam close to the border have surplus labor and labor costs in Guangxi have been rising rapidly. Each year, 1 million to 1.5 million workers are added to the labor force in Viet Nam but only about 50% can be absorbed locally. This leaves a large surplus of unemployed Vietnamese workers. In Guangxi, in order to attract new companies to locate in the border region, lower labor cost is a good inducement. However, at the moment, Vietnamese workers are only able to stay for 30 days on a single entry visa, inconvenience for employers and workers. The new center will address this problem.

2. The total land area of the site is 17,999 square meters (approximately 4.5 acres). This includes: (i) entrepreneurial job skills exchange center, (ii) experimental demonstration center, (iii) training base, (iv) integrated business houses, and (v) ancillary staff quarters. The total allocation of space to these functions is shown below in Table 1.

**Table 1: Physical Facilities**

No.	Item	Unit	Land area	Floor area
1	Entrepreneurial employment skills exchange center	m <sup>2</sup>	830.00	2,000.00
2	Experimental demonstration center	m <sup>2</sup>	1,175.00	3,525.00
3	Training base	m <sup>2</sup>	1,590.40	4,771.20
4	Integrated business premises	m <sup>2</sup>	830.00	2,000.00
5	Staff quarter	m <sup>2</sup>	655.06	3,930.36
Total		m <sup>2</sup>	5,080.5	16,026.6

Source: Asian Development Bank estimates.

3. The training facilities are essentially warehouse style with three or four floors with a number of large training rooms. The dormitory has 90 rooms, with four to a room, for a total capacity of 360 trainees or workers.

4. The new facility will be constructed on an existing industrial/commercial park with approximately 10 buildings in various states of repair. Other than one warehouse size building, which is currently being used to construct highly decorated red wood furniture, all other buildings are empty or used for storage. The current warehouse style buildings will be removed and new facilities will be constructed in their place.

#### B. Costs and Financing

5. Detailed project costs are shown in Table 2. The total floor area of the buildings will be 16,026.6 square meters for a total price of CNY34.8 million. Cost per square meter is at CNY 2,140.

Table 2: Project Detailed Costing

No.	Items	Estimated Cost (CNY '000)					Technical and Economic Indicators			Remark
		Architectural Engineering	Installation Engineering	Equipment and Tools	Others	Total	Unit	Quantity	Average (CNY)	
<b>A</b>	<b>Physical works</b>	3,477.62	979.64			4,457.26	m <sup>2</sup>	16,226.56	2,747	
1	Architectural Engineering	2,998.56	619.66			3,618.21	m <sup>2</sup>	16,227.00	2,230	
1.1	Entrepreneurial employment skills exchange center	390.00	86.00			476.00	m <sup>2</sup>	2,000.00	2,380	
1.2	Experimental demonstration center	687.38	151.58			838.95	m <sup>2</sup>	3,525.00	2,380	
1.3	Training base	882.67	219.48			1,102.15	m <sup>2</sup>	4771.20	2,310	
1.4	Integrated business premises	390.00	84.00			474.00	m <sup>2</sup>	2,000.00	2,370	
1.5	Staff quarter	648.51	78.61			727.12	m <sup>2</sup>	3,930.36	1,850	
<b>B</b>	<b>Other Cost</b>				1,002.55	1,002.55				
	A+B	3,477.62	979.64		1,002.55	5,459.81				
<b>C</b>	<b>Contingencies</b>				436.79	436.79				(A+B)×8%
D	Total (A+B+C)	3,477.62	979.64		1,439.34	5,896.60				A+B+C
<b>E</b>	<b>Financial Charges during construction period</b>				92.29	92.29				
<b>F</b>	<b>Liquidity</b>				301.71	301.71				
<b>G</b>	<b>Total Investment</b>	3,477.62	979.64		1,833.34	6,290.60				
	Share (%)	55%	16%		29%	100%				

Source: Asian Development Bank estimates.

**Table 3: Cost Estimates by Expenditure Category**

Item	(\$ million)		
	Foreign Exchange	Local Currency	Total Cost
<b>A. Investment Costs</b>			
1. Civil works	0.00	5.95	5.95
2. Mechanical and equipment	0.00	0.28	0.28
3. Consultants	0.00	1.41	1.41
a. Project management	0.00	1.41	1.41
b. Capacity development	0.00	0.00	0.00
<b>Subtotal (A)</b>	<b>0.00</b>	<b>7.64</b>	<b>7.64</b>
<b>B. Recurrent Costs</b>			
1. Salaries	0.00	0.93	0.93
2. Equipment operation and maintenance	0.00	0.43	0.43
<b>Subtotal (B)</b>	<b>0.00</b>	<b>1.36</b>	<b>1.36</b>
<b>Total Base Cost</b>	<b>0.00</b>	<b>9.00</b>	<b>9.00</b>
<b>C. Contingencies</b>			
1. Physical	0.00	0.31	0.31
2. Price	0.00	0.19	0.19
<b>Subtotal (C)</b>	<b>0.00</b>	<b>0.50</b>	<b>0.50</b>
<b>D. Financial Charges During Implementation</b>			
1. Interest during construction	0.00	0.29	0.29
2. Commitment charges	0.00	0.01	0.01
<b>Subtotal (D)</b>	<b>0.00</b>	<b>0.30</b>	<b>0.30</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>0.00</b>	<b>9.80</b>	<b>9.80</b>

Source: Asian Development Bank estimates.

Table 4: Cost Estimates by Financier (\$ million)

Item	Asian Development Bank		Government		Total Cost {D}
	Amount {A}	% of Cost Category {A/D}	Amount {B}	% of Cost Category {B/D}	
<b>A. Investment Costs</b>					
1. Civil works	4.90	82.4%	1.05	17.6%	5.95
2. Mechanical and equipment	0.00	0.0%	0.28	100.0%	0.28
3. Consultants	0.00	0.0%	1.41	100.0%	1.41
<b>Subtotal (A)</b>	<b>4.90</b>	<b>64.1%</b>	<b>2.74</b>	<b>35.9%</b>	<b>7.64</b>
<b>B. Recurrent Costs</b>					
1. Salaries	0.00	0.0%	0.93	100.0%	0.93
2. Equipment operation and maintenance	0.00	0.0%	0.43	100.0%	0.43
<b>Subtotal (B)</b>	<b>0.00</b>	<b>0.0%</b>	<b>1.36</b>	<b>100.0%</b>	<b>1.36</b>
<b>Total Base Cost</b>	<b>4.90</b>	<b>54.4%</b>	<b>4.10</b>	<b>45.6%</b>	<b>9.00</b>
<b>C. Contingencies</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.50</b>	<b>100.0%</b>	<b>0.50</b>
<b>D. Financial Charges During Implementation</b>	<b>0.30</b>	<b>100.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.30</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>5.20</b>	<b>53.1%</b>	<b>4.60</b>	<b>46.9%</b>	<b>9.80</b>
<b>% Total Project Cost</b>		<b>53.1%</b>		<b>46.9%</b>	<b>100%</b>

Source: Asian Development Bank estimates.



**Table 5: Cost Estimates by Year (\$ million)**

<b>Item</b>	<b>Total Cost</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
<b>A. Investment Costs</b>						
1. Civil works	5.95	0.00	4.16	1.79	0.00	0.00
2. Mechanical and equipment	0.28	0.00	0.11	0.17	0.00	0.00
3. Consultants	1.41	0.99	0.28	0.14	0.00	0.00
a. Project management	1.41	0.99	0.28	0.14	0.00	0.00
b. Capacity development	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal (A)</b>	<b>7.64</b>	<b>0.99</b>	<b>4.55</b>	<b>2.10</b>	<b>0.00</b>	<b>0.00</b>
<b>B. Recurrent Costs</b>						
1. Salaries	0.93	0.31	0.31	0.31	0.00	0.00
2. Equipment operation and maintenance	0.43	0.00	0.17	0.26	0.00	0.00
<b>Subtotal (B)</b>	<b>1.36</b>	<b>0.31</b>	<b>0.48</b>	<b>0.57</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Base Cost</b>	<b>9.00</b>	<b>1.30</b>	<b>5.03</b>	<b>2.67</b>	<b>0.00</b>	<b>0.00</b>
<b>C. Contingencies</b>	<b>0.50</b>	0.13	0.18	0.19	0.00	0.00
<b>Financial Charges During Implementation</b>	<b>0.30</b>	0.01	0.03	0.08	0.09	0.09
<b>Total Project Cost (A+B+C+D)</b>	<b>9.80</b>	<b>1.44</b>	<b>5.24</b>	<b>2.94</b>	<b>0.09</b>	<b>0.09</b>
<b>% Total Project Cost</b>		<b>15%</b>	<b>53%</b>	<b>30%</b>	<b>1%</b>	<b>1%</b>

Source: Asian Development Bank estimates.

1. **Procurement Packages**(i) **ADB Financing**

Package Number	General Description	Estimated Value (\$'000)	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
PX-C2	Pingxiang Cross-border Labor Cooperation Park Buildings (5 buildings)	5,735	NCB	Prior	1S1E	Q4 2017	

(ii) **Non-ADB Financing**

6. The following table lists goods, works and consulting services contracts over the life of the project, financed by nonADB sources.

**Goods and Works:**

Package Number	General Description	Estimated Value	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
PX-E2	IT System for Workers Security in Pingxiang Cross-border Labor Cooperation Park	301	Government	N/A		Q2 2018	

**Consulting Services**

Package Number	General Description (Goods and Works)	Estimated Value	Procurement Method	Review [Prior / Post/Post (Sampling)]	Bidding Procedure	Advertisement Date (quarter/year)	Comments
PX-CS1	Design, survey, project supervision, etc. (Pingxiang Cross-border Labor Cooperation Park)	1,517	Government	N/A		Q1 2017	

## Tranche 1 Subproject Summaries

### Subproject 3: Improvement of Training for PRC and Vietnamese Workers and Local SMEs

#### Project Outline

1. As a soft component, the investment program will support the improvement of training quality for local small and medium-sized enterprises (SMEs) and People's Republic of China (PRC) and Vietnamese workers in Baise, Chongzuo, and Fangchenggang. High-quality and demand-driven training programs at key border prefectures can help the SME labor force in the PRC and from Viet Nam enhance its technical skills, increase job opportunities, and contribute labor mobilization between the two countries. At present, local universities and/or vocational schools have provided training programs for local SMEs and their workers including Vietnamese in these three prefectures. However, their programs are relatively new and have encountered a lack of funds for accommodating the surging demand for training, especially from Vietnamese workers, and improving the quality of their training programs.
2. The Guangxi Normal University for Nationalities (Economics and Management Department) has provided training programs covering tourism, logistics, international trade, marketing, finance, and human resource development, targeting potential SME managers and workers. They also launched an incubation center in 2015 to support start-up businesses run by students and have provided management guidance for them. They are willing to develop and improve their training programs in response to the demand from local SMEs and their workers. The Chongzuo Guangxi ASEAN International Vocational Education Institute, established in 2013, has provided a year-free training program for Vietnamese workers and SME employees, addressing areas of information technology, electronics assembly, automotive maintenance, food processing, and household services. They estimated the training demand from Vietnamese workers as 100,000, but the limited budget for training has not allowed them to fulfil these demands.
3. The project will provide two levels of training: (i) training for trainers, and (ii) training for local SMEs and PRC and Vietnamese workers, targeting three border prefectures. This modality will encourage sustainable effect of the project, given that the training chain is created (i.e., trained trainers train other local trainers). In the first level, the recognized training experts hired will review the existing training curriculums provided by local training institutions, recommend the improvements needed, and propose the improved training modules for local SMEs and PRC and Vietnamese workers. Then, they will train trainers from selected partner training institutions who implement the improved training modules in Baise, Chongzuo, and Fangchenggang.
4. In the second level, the delivery of training services will be tendered out to existing local training institutions on a competitive basis. The selected partner training institutions will provide three types of training programs: (i) management training (short-term executive program), (ii) job skill training (1-3 month program), and (iii) special course on Chinese language and cultural/business environment for Vietnamese workers. The management training will include logistics, international trade, marketing and branding strategies, financial management, and human resource management. The job skill training will mainly focus on two areas: (i) manufacturing including food processing, electronics, and automotive parts and components; and (ii) services including cross-border tourism, automotive repair, and retail and wholesale trade. Each training program will accommodate around 30 participants. The maximum of 18

management trainings will be arranged while the maximum of 9 job skill trainings in manufacturing and services respectively will be provided.

**Table 1: Activities with Milestones**

Activities	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Training for trainers:								
• Selection of consulting firm								
• Curriculum improvements and design								
• Training programs for trainers in Baise, Chongzuo, and Fangchenggang								
Training implementation in Baise, Chongzuo, and Fangchenggang:								
• Selection of partner training institutions								
• Training as trainers								
• Administration (selection of students)								
• Training implementation (management)								
• Training implementation (job skills)								
• Special course for Vietnamese workers								
Activities	2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Training implementation in Baise, Chongzuo, and Fangchenggang:								
• Administration (selection of students)								
• Training implementation (management)								
• Training implementation (job skills)								
• Special course for Vietnamese workers								
• Evaluation								
Project completion								

**A. Training for trainers:**

- 1) January 2017: advertise the position of a consulting firm.
- 2) July 2017: hire a consulting firm.
- 3) July–December 2017: review training curriculums provided by existing training institutions, recommend the improvements needed, design new curriculums upon necessity, and set the improved training modules for local SMEs and PRC and Vietnamese workers.
- 4) January–June 2018: train trainers who implement the improved training modules in selected partner training institutions in Baise, Chongzuo, and Fangchenggang.

**B. Training implementation:**

- 1) July 2017: negotiate with partner training institutions in Baise, Chongzuo, and Fangchenggang and select 1 partner institution from each municipality.
- 2) January 2018: conclude the agreement/contract with partner training institutions in Baise, Chongzuo, and Fangchenggang (total 3 contracts).
- 3) January–June 2018: participate in a training program for trainers to implement the improved training modules, to be held in Baise, Chongzuo, and Fangchenggang respectively (3 training programs considering the specific needs of each prefecture).

- 4) April 2018–June 2020: select students (local SMEs and PRC and Vietnamese workers) per training program (each prefecture).
- 5) July 2018–September 2020: implement the management training (1 month program, for each prefecture).
- 6) July 2018–September 2020: implement the job skill training (1–3 month program, for each prefecture).
- 7) July 2018–September 2020: implement the special course for Vietnamese workers (Chinese language and cultural/business environment) (1–3 month program, each prefecture).
- 8) October–November 2020: make an evaluation report of the training (each prefecture).
- 9) December 2020: complete the project.

**Project Implementing Entity (PIE):** Guangxi Foreign Loans Project Management Office (GDRC)

### Cost Estimates

**Table 2: Consulting firm (training for trainers)**

Item	Number	Person-months	Working days/month	Rate \$/day	Cost (\$)
Senior consultant	1	12	22	500	132,000
Junior consultants	5	12	22	250	330,000
Training programs for trainers					206,400
Travel and accommodation					216,000
Sub-total					884,400
Contingency					44,220
<b>Total</b>	<b>6</b>				<b>928,620</b>

Source: Asian Development Bank estimates.

**Table 3: Partner training institutions (training implementation)**

Item	Implementing prefectures	Cost (\$)
Training program implementation		1,109,520
Travel and accommodation		576,000
Outsourcing (special program)		118,800
Equipment		30,000
Sub-total		1,834,320
Contingency		276,140
<b>Total</b>		<b>2,110,460</b>
<b>Grand total</b>	<b>3</b>	<b>6,331,380</b>

Source: Asian Development Bank estimates.

<b>A+B</b>	<b>7,260,000</b>
------------	------------------

## **Outline Terms of Reference for Consultants**

5. The project will employ services from a consulting firm for training for trainers. The consulting firm will provide two types of services. The first is to review the existing training curriculums provided by local training institutions, recommend the improvements needed, and propose improved training modules for local SMEs and PRC and Vietnamese workers. The second is to train trainers from selected partner training institutions who implement the improved training modules in Baise, Chongzuo, and Fangchenggang. The delivery of training services to local SMEs and PRC and Vietnamese workers will be tendered out to existing local training institutions on a competitive basis as partner training institutions.

6. The consulting firm will be composed of an international consultant (SME management training expert) and national consultants (SME job skill training experts). The international consultant will also coordinate and supervise overall works of national consultants. The consultants will be selected and engaged in accordance with ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time).

### **A. SME Management Training Expert** (1 international consultant, 12 person-months)

7. In consultation with Asian Development Bank (ADB) and PIE, an international consultant with proven expertise in improving and designing training programs for target groups and training trainers will be hired as the SME management training expert. The target groups include managers of local SMEs. Under the supervision of ADB and PIE staff, the consultant will be assigned to: (i) review the existing management training curriculums provided by local training institutions; (ii) recommend the improvements needed; (iii) propose the improved modules for the management training program that covers five modules, i.e., logistics, international trade, marketing and branding strategies, financial management, and human resource management; and (iv) train trainers from selected partner training institutions who implement the improved management training modules in Baise, Chongzuo, and Fangchenggang. The international consultant will also coordinate and supervise overall works of national consultants. The consultant should have in-depth knowledge of training methodologies for local SMEs and PRC and Vietnamese workers and key managerial topics including logistics, international trade, marketing and branding strategies, financial management, and human resource management, with proven experiences as trainers for trainers.

### **B. SME Job Skill Training Experts** (5 national consultants, 60 person-months)

8. In consultation with ADB and PIE, national consultants with proven expertise in improving and designing training programs for target groups and training trainers will be hired as the SME job skill training experts. The target groups include PRC and Vietnamese workers. Under the supervision of ADB and PIE staff, the consultants will be assigned to: (i) review the existing job skill training curriculums provided by local training institutions; (ii) recommend the improvements needed; (iii) propose the improved modules for the specialized job skill training programs that cover the manufacturing sector (food processing, electronics, automotive parts and components, and/or priority industries set by the Guangxi Zhuang Autonomous Region or prefectures) and the service sector (cross-border tourism, automotive repair, retail and wholesale trade, and/or priority sectors set by the Guangxi Zhuang Autonomous Region or prefectures); and (iv) train trainers from selected partner training institutions who implement the improved job skill training modules in Baise, Chongzuo, and Fangchenggang. The consultants should have in-depth knowledge of training methodologies for local SMEs and PRC and

Vietnamese workers and key skill training topics including the above-mentioned manufacturing and service sectors, with proven experiences as trainers for trainers.

## Tranche 1 Subproject Summaries

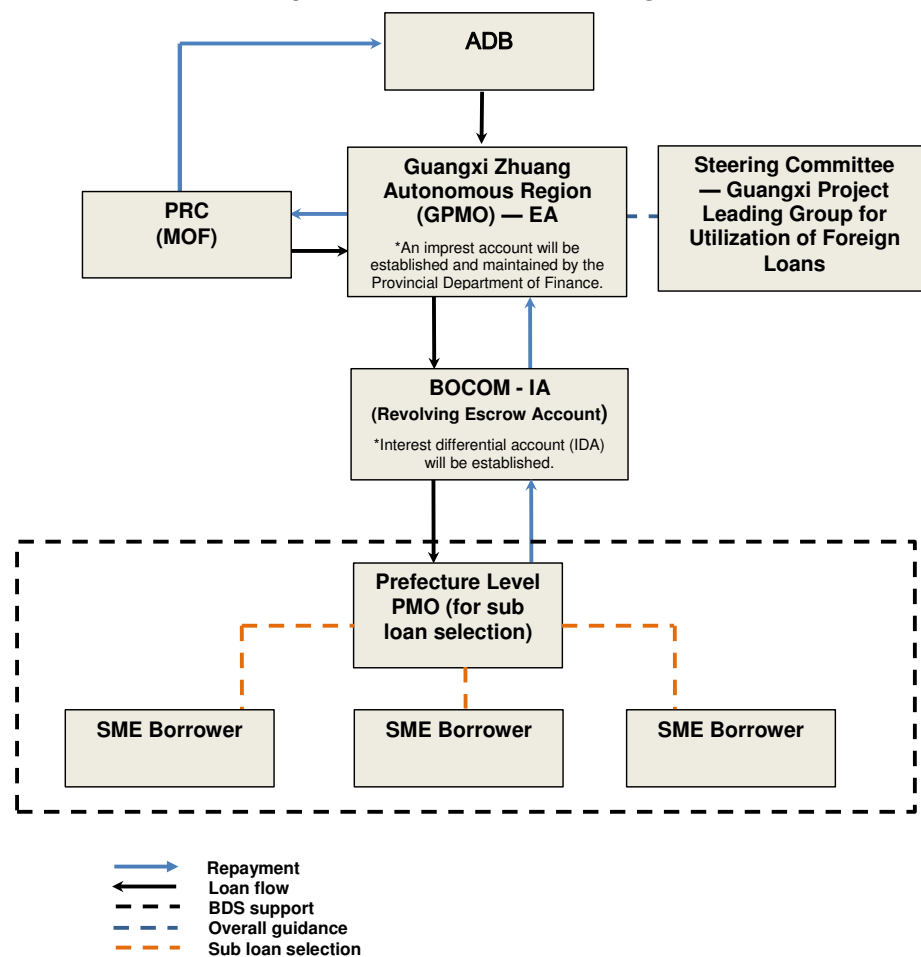
### Subproject 4: Expansion of SME Financing in Guangxi

1. Many of the small and medium-sized enterprises (SMEs) in the border areas of the People's Republic of China (PRC) and Viet Nam cite difficulties in accessing financing as one of the main restrictions in growing and improving their businesses. The SME Financing component under Tranche 1 of the MFF will provide financing to SMEs in Guangxi Zhuang Autonomous Region (GZAR), in particular Baise, Chongzuo, Fangchenggang, and Qinzhou municipalities, through a financial institution using the financial intermediation loan (FIL) modality. The financing provided is expected to enable eligible SMEs to gain access to competitively priced, medium to long term debt in order to fund their value addition proposals and increase profitability of their business and productivity of the cities and counties in which they operate in. The first tranche loan for SME financing amounts to \$63.58 million (CNY 413.29 million).
2. A number of measures have been adopted in designing this project to address the financing barriers for SMEs in border areas. Accordingly, the FIL modality was chosen to (i) allow multiple rollover of the ADB loan amount; thus, providing larger investments for SMEs over the loan tenor; (ii) build knowledge and capacity of the provincial government and domestic financial institutions in evaluation and risk assignments on SME lending; (iii) reduce transaction complexities and costs due to familiarity and experience gained by both the Foreign Loans Projects Management Office (GPMO) and financial intermediary from subprojects; and (iv) enhance governance and improve safeguard compliance for SME investments beyond the first tranche investment subprojects. The business development services (BDS) component of the MFF will be designed to build the capacity of SMEs in the above prefectures so they can approach financial institutions with value added business proposals through improved credit standing.
3. The financial institution that shall act as the intermediary in Tranche 1 is the Guangxi Branch of Bank of Communications (BOCOM). BOCOM was selected based on the ADB's set of eligibility criteria for lending transactions of this nature. These criteria include BOCOM's financial creditworthiness, institutional capabilities to manage an SME financing scheme of this nature, extent of reach to SME markets in the target prefectures, and ability to fulfill the ADB's reporting standards, including in areas of environmental and safeguards management.
4. The borrower will be the PRC through the Ministry of Finance (MOF). Loan proceeds will be relented by MOF to the Department of Finance of GZAR (GDOF) on the same terms and conditions as the loan between ADB and the PRC. The Government of GZAR, through the GPMO will serve as the executing agency (EA) for day-to-day management of the overall transaction. GDOF will make available the loan proceeds to BOCOM. Under this modality, BOCOM will act as a financial intermediary between the PRC and the SME borrowers. As the financial intermediary, BOCOM will disburse, monitor, and collect loans extended to SMEs in the above target prefectures. BOCOM will earn management fees for its role in administering the SME loans. The BOCOM will establish a project implementation unit (PIU) to manage the implementation of this transaction. BOCOM will establish a separate Revolving Escrow Account (REA) to ensure that the account is kept distinct from BOCOM's own assets. The REA further provides protection against adverse results from other BOCOM financial operations. For subsequent SME borrowers of subprojects, BOCOM will on-lend the repayment proceeds to the eligible sub-borrowers via this REA. Figure 1 presents transaction flow.
5. GDOF will make available the loan proceeds to BOCOM, under the terms and conditions of the REA management agreement for further onlending to selected subborrowers through sub



loan agreements between GDOF and the subborrower. Since the loan proceeds will not be relent to BOCOM, the requirement to relend ADB proceeds to a financial intermediary on terms no more favorable than ordinary capital resources terms is not applicable. The REA management fee will be set at 0.5% per annum of the disbursed SME loan amount and will be collected from SME loan interest repayment. GDOF will be responsible to pay the REA management fee directly to BOCOM in case of SME loan repayment delays or failure.

**Figure 1: Fund Flow for Expansion of SME Financing (Financial Intermediation Loan)**



ADB = Asian Development Bank, BOCOM = Guangxi Branch of Bank of Communications, EA = executing agency; GPMO = Guangxi Zhuang Autonomous Region Project Management Office, IA = implementing agency, MOF = Ministry of Finance, PMO = Project Management Office, PRC = People's Republic of China, SME = small and medium-sized enterprises.

Source: Asian Development Bank.

6. The broad parameters of the eligibility criteria set for SME borrowers will include granting of loans to SMEs involved in cross-border trade in the agribusiness, logistics, manufacturing, and border tourism sectors in the above prefectures. Eligible borrowers will also include those SMEs with sustainable business models and those who demonstrate a commitment to adopt the ADB's environmental and safeguards management standards.

7. The GPMO will also be responsible for implementing the project advisory support for business development services, public-private partnerships, and cross-border investment and financial services, in addition to project management support.

8. Subsequent tranches of the SME Financing component will then include the involvement of other local financial institutions.

9. Broad Lending Terms – the loan will have a 15-year term including a grace period of 12 years, an interest rate determined in accordance with ADB's LIBOR-based lending facility, an applicable commitment charge, and such other terms and conditions set forth in the loan and project agreements. The PRC government has the option to choose between eligible currencies and the interest rate regime. The longer grace period is essential to maximize the benefits of FIL so that the full amount of the loan is available for relending to a greater number of SME borrowers. The \$63.58 million FIL from ADB is expected to fully revolve about two to three times, supporting an additional financing for SME.

10. Specific Lending Terms – the term of each sub loan will be no more than six years. The on-lending interest rate will be set at the range of prevailing market rate for SME loans for similar terms based on the rate permissible by the People's Bank of China for a SME loan.<sup>1</sup> Specifically, the on-lending interest rate will be determined by reflecting funding cost (ADB loan interest rate), REA management fee paid to BOCOM, guarantee fee paid for guarantee companies, hedging cost for currency exchange risk, and credit spread applied to the SME (including loan loss contingency). GDOF will bear the risks of currency exchange and interest rate fluctuations. Only subprojects satisfying the selection criteria and approved by the GPMD with the assistance of BOCOM will be financed.

11. Interest Rate Differential Account – GDOF will establish the interest rate differential account (IDA) in BOCOM. The account will be principally funded from the interest rate differential between the FIL on-lending rate to the subborrowers and ADB's interest rate. The account will accrue the interest rate differential derived from on-lending under FIL and will be used to (i) support guarantee fee for SME subborrowers, (ii) to cover potential loan loss from SME loans, and (iii) to shoulder currency exchange risk hedging cost, and (iv) to cover the expenditure and capacity building for project management.

12. The small and medium-sized enterprise (SME) financing under the financial intermediation loan (FIL) modality will target SMEs in GZAR, particularly those in the 4 border municipalities. Specifically, selection of the SME subborrowers will be guided by the following criteria:

- (i) The targeted SMEs should be legally registered, and law abiding.
- (ii) Priority will be given to those SMEs that are engaged in cross-border trade and logistics, agribusiness, manufacturing, and cross-border tourism.
- (iii) The targeted SMEs should have sustainable business models, and sound business strategy and corporate governance.
- (iv) Proper safeguards due diligence will be conducted in accordance with the Environment and Social Management System (ESMS) and ADB's environmental and safeguards policies and standards.
- (v) No FIL subloans will finance activities included in ADB's prohibited investment activity list.
- (vi) Average SME subloan size is not to exceed CNY20 million and the maximum is not to exceed CNY40 million.
- (vii) To facilitate financial inclusiveness for women, women borrowers should sign or co-

---

<sup>1</sup> PBOC guided SME lending rate for one year is 4.35% per annum and for 2 year is 4.75%. (subject to change).

sign at least 20% of subloans.

13. For SME finance under the FIL, the selection of candidate SME subborrowers will be carried out jointly by the financial intermediary and Guangxi Foreign Loan Projects Management Office (GPMO), with support of project management offices in the municipalities and counties concerned in the project area, particularly in border areas. Once loan applications from the candidate SMEs' are submitted, GPMO will conduct initial review and screening to ensure the candidate SME projects are broadly in line with GZAR's development strategies and relevant industrial policies. The financial intermediary will then (i) carry out detailed credit assessment and safeguards screening in accordance with the ESMS, and (ii) decide to approve or reject the applications in consultation with GPMO. The subloan agreement will be signed by the three parties, including the subborrower, the financial intermediary, and Guangxi Department of Finance

14. Disbursement - in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) and detailed arrangement agreed upon between the government and ADB. For the ADB loan proceeds that will be on-lent via FI to SMEs, imprest fund procedure will be used for the disbursement as the loan will be disbursed to numerous SME borrowers. A separate USD imprest account will be established at the provincial level and managed by the GDOF. The loan proceeds will be transferred from the imprest account to the REA with BOCOM after the receipt of funds by GDOF from ADB, following the necessary domestic procedures. GDOF will make available the loan proceeds to BOCOM, under the terms and conditions of the REA management agreement for further onlending to selected sub-borrowers through subloan agreements between GDOF and the subborrower.<sup>2</sup> The REA will be managed by BOCOM. The advance to the imprest account will not exceed 6 months' estimated cash flow required for payments to be made to sub-borrowers for eligible subprojects. Considering GPMO and GDOF's burden of attaching voluminous documentation for numerous and small amounts of subloans to withdrawal applications (WAs), the statement of expenditure (SOE) procedure will be used. The SOE ceiling is set at the free limit of the SME loans, CNY30 million. If an individual loan size exceeds the SOE ceiling, a subloan agreement and a summary sheet will need to be submitted for liquidation.

15. The initial advance request should be submitted with WA together with an estimate of expenditure for the forthcoming 6 months to support the amount of the initial advance. For liquidation and replenishment of the imprest account, WA and SOE, or WA and summary sheet above the SOE ceiling will be submitted by GDOF to ADB. Before the submission of the first withdrawal application, the Borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the Government of the PRC, together with the authenticated specimen signatures of each authorized person. The minimum value of \$100,000 per withdrawal application is in accordance with the Loan Disbursement Handbook.

16. Accounting - the GDOF and each subborrower will maintain separate accounts and records by funding source for all expenditures incurred on the project. BOCOM will submit to GDOF and the GPMO quarterly financial reports. GPMO will compile the consolidated project

---

<sup>2</sup> To ensure that ADB loan proceeds, as well as interest payments and principal repayments from the sub-borrowers are not co-mingled with the other funds being administered by BOCOM, a separate REA will be established and maintained by BOCOM for all transactions related to the project and administration of the FIL. This will ensure that the account is kept distinct from BOCOM's own assets, and provides protection against adverse results from other BOCOM financial operations.

accounts and related financial statements. The EA and IA will maintain separate project accounts and records by funding source for all expenditures incurred on the project. Project accounts will follow international accounting principles and practices prescribed by the Accounting Law of the PRC.

17. Auditing – the Government of Guangxi will cause the detailed consolidated project accounts to be audited in accordance with international standards on auditing by an auditor acceptable to ADB. The audited accounts will be submitted in the English language to ADB within six months of the end of the fiscal year by the executing agency. The annual audit report will include a separate audit opinion on the GDOF account, the REA, and the IDA, the use of the loan proceeds, and compliance with the financial covenants of the loan agreement. The GLG and PMO have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB financing is used in accordance with ADB's policies and procedures.

18. The SME financing subcomponent is categorized as financial intermediary. BOCOM has developed an ESMS covering environmental and social policies; safeguards screening, categorization and review process; institutional arrangements; and monitoring and reporting procedures for subprojects under the FIL. A social compliance audit confirmed that BOCOM has sufficient capacity to implement the system. The ESMS will exclude subprojects that will trigger Category A for environment and Category A or B for social safeguards, and that are in the prohibited investment list as per ADB Safeguard Policy Statement. Subprojects classified as Category B or C for environment will be subject to requirements set out in the ESMS. As part of ESMS, the Environmental and Social Unit of the financial intermediary would submit to ADB for prior review and approval the proposed safeguards classifications and a project description for the first two subprojects of a target sector classified as environment Category B. If satisfactory, then other subprojects will only be subject to post review in the annual environmental monitoring report. ESMS will ensure that SMEs supported are not engaged in commercial development of cultural resources of Indigenous Peoples without their consent. Each subproject will undergo due diligence based on the criteria in the ESMS. The GPMO will be required to submit an annual ESMS performance report.

19. Reporting and communications – the EA will provide ADB with (i) periodic (at least semi-annual) progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including: progress achieved by output as measured through the indicator's performance targets, key implementation issues and solutions, updated procurement plan, and updated implementation plan for the next 12 months; and (iii) a project completion report within six months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and the executing agency's audited financial statement together with the associated auditor's report, should be adequately reviewed.

**Table 1: Cost Component**

CATEGORY		ADB FINANCING	
No.	Category	Total Amount Allocated for ADB Financing (\$m)	Percentage and Basis for Withdrawal from the Loan Account
1	SME Credit Line	58.38	100% of total expenditure claimed
2	Financing Charges	5.20	100% of amount due
<b>Total</b>		<b>63.58</b>	

**Table 2: Implementation Schedule**

Activities	2016(Yr1)				2017(Yr2)				2018(Yr3)				2019(Yr4)				2020(Yr5)				2021(Yr6)				2022(Yr7)			
	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4	Qtr1	Qtr2	Qtr3	Qtr4
Design and monitoring framework																												
Loan origination																												
Loan disbursement																												
Loan monitoring																												
Collection of loans from SMEs																												
Loan recovery (defaulted loans)																												

Assumptions:  
 Average loan tenor 2 years, maximum tenor 3 years  
 Quarterly repayment  
 1% loan portfolio defaults (after 1 year)  
 Recovery period 2 years  
 50% recovery rate on defaulted loans  
 Proceeds collected from loans will be reloaned to other eligible borrowers. The above diagram shows milestones for one cycle.

**Tranche 1 Subproject Summaries**  
**Subproject 5: Development of Smart Port for**  
**Longbang Border Economic Zone**

**A. Project Description**

1. The subproject will establish a comprehensive cross-border logistics services platform in Longbang Border Economic Zone (BEZ) with real-time trade-logistics data exchange and trade process optimization. The project features high-speed communications networks, data centers, logistics equipment, online solutions and their support platform, e-commerce platform and interconnectivity with government agencies. It includes customs inspection and clearance and sanitation and phytosanitary services (SPS); global multi-modal transportation services; global supply chain management services; and cross-border order management.

2. The project implementing entity (PIE) is Baise Baidong Investment Company. The Baise City Government has established a project leading group to provide overall guidance for implementation of the subproject, comprising the Baise Department of Finance, Open Border Pilot Area Management Committee, Jingxi City Government, Baise Baidong Investment Company, and other relevant departments of Baise City.

3. The physical goods handling facilities are designed to handle 2,500 trucks per day. On the Viet Nam side of the border, the access road to the border crossing is local. The project will fund:

- (i) Project engineering design and supervision;
- (ii) IT infrastructure - total integration of information system (in three phases, including infrastructure construction);
- (iii) hardware and system software; and
- (iv) application/operating systems.

4. Aspects considered based on schematic layouts in the preparation of project costs are:

- (i) Information resources planning and database development plans;
- (ii) Construction plan for application supporting platform and application systems;
- (iii) Construction plan of data processing and storage system;
- (iv) Construction plan of terminal and network systems;
- (v) Construction plans of security system;
- (vi) Construction plan of backup system;
- (vii) Construction plan of operation and maintenance system; and
- (viii) Construction plan of other systems.

**B. Costs and Financing**

5. The total cost is CNY258.70 million, of which Asian Development Bank (ADB) will finance CNY177.45 million equivalent to \$27.30 million. Cost estimates by component of cost are included in Table 1.

**Table 1: Details of construction elements and costs**

Components	Cost Estimation (\$'000)	Phase I (\$'000)		Phase II (\$'000)		Phase III (\$'000)	
		ADB Loan	Counterpart Funds	ADB Loan	Counterpart Funds	ADB Loan	Counterpart Funds
Planning and Detailed Design	470.00	0.00	470.00	0.00	0.00	0.00	0.00
Communications network	1,578.00	1,200.00	0.00	378.00	0.00	0.00	0.00
Data Center	5,360.00	3,660.00	0.00	630.00	0.00	1,070.00	0.00
Field equipment (Security system)	5,338.80	4,641.30	0.00	697.50	0.00	0.00	0.00
Field equipment (Smart Toll Gate)	4,188.20	3,510.70	0.00	677.50	0.00	0.00	0.00
Interconnection systems	1,275.60	757.80	0.00	343.80	0.00	174.00	0.00
Field equipment (Customs Facility)	5,446.50	0.00	117.50	0.00	5,329.00	0.00	0.00
Field equipment (Operations equipment)	3670.00	1,800.00	370.00	1,450.00	50.00	0.00	0.00
Logistics Information platform	7,515.40	1,880.00	2,290.40	780.00	1,410.00	450.00	705.00
Customized mobile terminal	320.00	0.00	320.00	0.00	0.00	0.00	0.00
System integration fee	600.00	600.00	0.00	0.00	0.00	0.00	0.00
Consulting fees International Trade Facilitation	300.00	100.00	0.00	100.00	0.00	100.00	0.00
<b>Total</b>	<b>36,060.25</b>	<b>18,149.80</b>	<b>3,567.90</b>	<b>5,056.80</b>	<b>6,789.00</b>	<b>1,794.00</b>	<b>705.00</b>

Source: Asian Development Bank estimates.

**Table 2: Cost Estimates by Expenditure Category**

Item	(\$ million)		
	Foreign Exchange	Local Currency	Total Cost
<b>A. Investment Costs</b>			
1. Civil works	0.00	0.00	0.00
2. Mechanical and equipment	0.00	31.14	31.14
3. Consultants	0.00	5.23	5.23
a. Project management	0.00	5.23	5.23
b. Capacity development	0.00	0.00	0.00
<b>Subtotal (A)</b>	<b>0.00</b>	<b>36.37</b>	<b>36.37</b>
<b>B. Recurrent Costs</b>			
1. Salaries	0.00	0.00	0.00
2. Equipment operation and maintenance	0.00	0.00	0.00
<b>Subtotal (B)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Base Cost</b>	<b>0.00</b>	<b>36.37</b>	<b>36.37</b>
<b>C. Contingencies</b>			
1. Physical	0.00	0.60	0.60
2. Price	0.00	1.08	1.08
<b>Subtotal (C)</b>	<b>0.00</b>	<b>1.68</b>	<b>1.68</b>
<b>D. Financial Charges During Implementation</b>			
1. Interest during construction	0.00	1.70	1.70
2. Commitment charges	0.00	0.05	0.05
<b>Subtotal (D)</b>	<b>0.00</b>	<b>1.75</b>	<b>1.75</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>0.00</b>	<b>39.80</b>	<b>39.80</b>

Source: Asian Development Bank estimates.



Table 3: Cost Estimates by Financier (\$million)

Item	Asian Development Bank		Government		Total Cost {D}
	Amount {A}	% of Cost Category {A/D}	Amount {B}	% of Cost Category {B/D}	
<b>A. Investment Costs</b>					
1. Civil works	0.00	0.0%	0.00	0.0%	0.00
2. Mechanical and equipment	25.55	82.0%	5.59	18.0%	31.14
3. Consultants	0.00	0.0%	5.23	100.0%	5.23
a. Project management	0.00	0.0%	5.23	100.0%	5.23
b. Capacity development	0.00	0.0%	0.00	0.0%	0.00
<b>Subtotal (A)</b>	<b>25.55</b>	<b>70.3%</b>	<b>10.82</b>	<b>29.7%</b>	<b>36.37</b>
<b>B. Recurrent Costs</b>					
1. Salaries	0.00	0.0%	0.00	0.0%	0.00
2. Equipment operation and maintenance	0.00	0.0%	0.00	0.0%	0.00
<b>Subtotal (B)</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.00</b>
<b>Total Base Cost</b>	<b>25.55</b>	<b>70.3%</b>	<b>10.82</b>	<b>29.7%</b>	<b>36.37</b>
<b>C. Contingencies</b>	<b>0.00</b>	<b>0.0%</b>	<b>1.68</b>	<b>100.0%</b>	<b>1.68</b>
<b>D. Financial Charges During Implementation</b>	<b>1.75</b>	<b>100.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>1.76</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>27.30</b>	<b>68.6%</b>	<b>12.50</b>	<b>31.4%</b>	<b>39.80</b>
<b>% Total Project Cost</b>		<b>68.6%</b>		<b>31.4%</b>	<b>100%</b>

Source: Asian Development Bank estimates.

Table 4: Cost Estimates by Year (\$million)

Item	Total Cost	Year 1	Year 2	Year 3	Year 4	Year 5	
<b>A.</b>	<b>Investment Costs</b>						
1.	Civil works	0.00	0.00	0.00	0.00	0.00	0.00
2.	Mechanical and equipment	31.14	10.09	13.49	5.85	1.72	0.00
3.	Consultants	5.23	0.17	0.11	1.98	2.97	0.00
	a. Project management	5.23	0.17	0.11	1.98	2.97	0.00
	b. Capacity development	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal (A)</b>	<b>36.37</b>	<b>10.26</b>	<b>13.60</b>	<b>7.83</b>	<b>4.69</b>	<b>0.00</b>
<b>B.</b>	<b>Recurrent Costs</b>						
1.	Salaries	0.00	0.00	0.00	0.00	0.00	0.00
2.	Equipment operation and maintenance	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Subtotal (B)</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
	<b>Total Base Cost</b>	<b>36.37</b>	<b>10.26</b>	<b>13.60</b>	<b>7.83</b>	<b>4.69</b>	<b>0.00</b>
<b>C.</b>	<b>Contingencies</b>	<b>1.68</b>	<b>0.22</b>	<b>0.26</b>	<b>0.51</b>	<b>0.69</b>	<b>0.00</b>
<b>D.</b>	<b>Financial Charges During Implementation</b>	<b>1.75</b>	<b>0.11</b>	<b>0.28</b>	<b>0.40</b>	<b>0.47</b>	<b>0.49</b>
	<b>Total Project Cost (A+B+C+D)</b>	<b>39.80</b>	<b>10.59</b>	<b>14.13</b>	<b>8.74</b>	<b>5.85</b>	<b>0.49</b>
	<b>% Total Project Cost</b>		<b>26%</b>	<b>36%</b>	<b>22%</b>	<b>15%</b>	<b>1%</b>

Source: Asian Development Bank estimates.

## C. Procurement

6. The project will follow the procurement requirements of the Government of People's Republic of China (PRC) and the ADB, following appointment of a procurement agent. Regarding the equipment procurement, an option may be ADB's standard bidding documents for "IT Products and/or Services (Trial Version)" with (i) single-stage, one-envelope, (ii) single-stage, two-envelope, and (iii) two-stage. However, it could be very cumbersome for the IE since these bidding documents are complex and contract forms may not be appropriate for relatively small value contracts unless the packages can be grouped together (currently the total of \$25.9 million is separated into five packages with expected values of \$1.8-\$8.6 million in each package).

7. The IE commits to working with the ADB to finalize the bidding arrangements and follow on implementation. The project will provide full equipment fitting out of a planned border area e-Commerce data port. The components include:

- (i) data collection for all incoming and outgoing traffic through X-ray or other RFID scanners;
- (ii) automatic CCTV and license recognition camera port scanning for enhanced security;
- (iii) networking of information exchange including customs clearance data, government data, trading data and finance data, data mining; and
- (iv) data storage services.

**D. Non-ADB Financing**

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

**Table 11: List of Goods, Works and Consulting Contracts Financed by Non-ADB Sources****Goods and Works:**

<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
BS-E6	Longbang Smart Port: O&M equipment (Phase 1, 2)	44	Government	N/A		Q2 2017	
BS-E7	Longbang Smart Port: Custom Equipment (Phase 1, 2)	572	Government	N/A		Q2 2017	

**Consulting Services**

<b>Package Number</b>	<b>General Description (Goods and Works)</b>	<b>Estimated Value</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
BS-CS1	Longbang Smart Port: Application System Development for the Customer Service	473	Government	N/A		Q3 2017	
BS-CS2	Longbang Smart Port: Detail Design for the Implementation Scheme	47	Government	N/A		Q1 2017	

## Tranche 1 Subproject Summaries

### Subproject 6: Expansion of Pingxiang Border Trade Service Center

#### A. Project Description

1. The Pingxiang border trade service center will be expanded to meet the rapidly increasing trade volumes through Pingxiang border crossing. The project implementing entity is the Pingxiang Urban Construction and Investment Company.

2. The service center is a standard processing facility. It contains a parking area for trucks and cars, warehousing space, trading areas, unloading and loading docks, an administration and service building, customs and sanitary and phytosanitary services (SPS), a platform balance/scale, and complementary support building facilities. The buildings are largely low rise, steel and concrete structures similar to many facilities of this type across People's Republic of China (PRC). The service center is located in Kafeng Village, Youyi Town, Pingxiang City close to the border gate.

3. Pingxiang is clearly the main border crossing for trade between Viet Nam and PRC. The volume is growing rapidly and the current facilities are overburdened. A similar facility located close by is very congested. The border trade statistics for the past four years are as shown in Table 1.

**Table 1: Border Trade Pingxiang (Imports)**

	Tons	Value (CNY million)
2012	205,367	747
2013	485,952	2,905
2014	556,943	3,806
2015	1,803,462	7,786

Source: Asian Development Bank estimates.

4. The buildings are comprised of the following:

- (i) The mutual trade area is a building with single-story steel structure and color steel roofing with total floor area of 6,300 square meters (m<sup>2</sup>);
- (ii) Warehouse is a building with two-story concrete frame structure with total floor area of 3,000 m<sup>2</sup>;
- (iii) Declaration room are building with single story concrete frame structure with total floor area of 1,000 m<sup>2</sup>;
- (iv) Comprehensive service building is a building with three-story reinforced concrete frame structure, and its main function is to deal with declaration business. Men's and women's toilets and two stairways are set up on each floor. The total floor area is 6,500 sm<sup>2</sup>;
- (v) supporting accessory occupancy is a building with two-story concrete frame structure; with total floor area of 2,040 m<sup>2</sup>.

#### B. Costs and Financing

5. The project is comprised of the detailed components and costs shown in Table 2.

Table 2: Components and Cost of Pingxiang Border Service Center

No.	Engineering and cost	Estimated value (RMB 10000 Yuan)					Technical and economic index			Remarks
		Construction engineering	Equipment purchase	Installation engineering	Other expense	Total	Unit	Quantity	Index	
I	Construction and installation engineering cost	5644.91	557.16	199.78	0	6401.85	m <sup>2</sup>	18840	3398.01	
1	Construction engineering	3561.3	557.16	199.78	0	4078.68	m <sup>2</sup>	18840	2164.9	
1.1	Comprehensive service building	1267.5	218.4	54.6	0	1449.5	m <sup>2</sup>	6500	2230	Frame structure
1.2	Mutual trade area	1071	119.07	51.03	0	1241.1	m <sup>2</sup>	6300	1970	Steel-frame structure
1.3	Warehouse	600	50.4	21.6	0	672	m <sup>2</sup>	3000	2240	Steel-frame structure
1.4	Declaration Room	225	19.6	8.4	0	253	m <sup>2</sup>	1000	2530	Frame structure
1.5	Supporting accessory occupancy	397.8	65.69	28.15	0	463.08	m <sup>2</sup>	2040	2270	Frame structure
1.6	Weighbridge		84	36		120	Set	20	60000	
2	Outdoor engineering	2083.61	0	0	0	2083.61	m <sup>2</sup>	110443	188.66	
2.1	Road hardening in field region	1614.2				1614.2	m <sup>2</sup>	57650	280	
2.2	Greening project	193.3				193.3	m <sup>2</sup>	38660	50	
2.3	Outdoor electrical engineering	165.66				165.66	m <sup>2</sup>	110443	15	
2.3	Outdoor water supply and drainage engineering	110.44				110.44	m <sup>2</sup>	110443	10	
II	Other expenses of engineering				788.66	788.66				
III	Basic reserve funds				575.24	575.24			8.00%	
IV	Fixed assets investment	5644.91	557.16	199.78	1363.9	7765.74				
V	Loan interest in construction period	0	0	0	247.4	247.4	Annual interest rate of the loan is calculated according to 4.90%. The loan amount is RMB 40 million. The loan period is 2 years.			
VI	Total project investment estimation	5644.91	557.16	199.78	1611.3	8013.15		18840	4252.73	

Source: Asian Development Bank estimates.

6. As shown above, the total cost of the border trade service center will be CNY 84.50 million or \$13.0 million of which 53% will be provided from ADB funding (\$6.90 million).

**Table 3: Cost Estimates by Expenditure Category**

(\$ million)			
Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Investment Costs</b>			
1. Civil works	0.00	9.44	9.44
2. Mechanical and equipment	0.00	0.18	0.18
3. Consultants	0.00	1.13	1.13
a. Project management	0.00	1.13	1.13
b. Capacity development	0.00	0.00	0.00
<b>Subtotal (A)</b>	<b>0.00</b>	<b>10.75</b>	<b>10.75</b>
<b>B. Recurrent Costs</b>			
1. Salaries	0.00	0.76	0.76
2. Equipment operation and maintenance	0.00	0.30	0.30
<b>Subtotal (B)</b>	<b>0.00</b>	<b>1.06</b>	<b>1.06</b>
<b>Total Base Cost</b>	<b>0.00</b>	<b>11.81</b>	<b>11.81</b>
<b>C. Contingencies</b>			
1. Physical	0.00	0.44	0.44
2. Price	0.00	0.31	0.31
<b>Subtotal (C)</b>	<b>0.00</b>	<b>0.75</b>	<b>0.75</b>
<b>D. Financial Charges During Implementation</b>			
3. Interest during construction	0.00	0.43	0.43
4. Commitment charges	0.00	0.01	0.01
<b>Subtotal (D)</b>	<b>0.00</b>	<b>0.44</b>	<b>0.44</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>0.00</b>	<b>13.00</b>	<b>13.00</b>

Source: Asian Development Bank estimates.

Table 4: Cost Estimates by Financier (\$ million)

Item	Asian Development Bank		Government		Total Cost {D}
	Amount {A}	% of Cost Category {A/D}	Amount {B}	% of Cost Category {B/D}	
<b>A. Investment Costs</b>					
1. Civil works	6.28	66.5%	3.16	33.5%	9.44
2. Mechanical and equipment	0.18	100.0%	0.00	0.0%	0.18
3. Consultants	0.00	0.0%	1.13	100.0%	1.31
<b>Subtotal (A)</b>	<b>6.46</b>	<b>60.1%</b>	<b>4.29</b>	<b>39.9%</b>	<b>10.75</b>
<b>B. Recurrent Costs</b>					
1. Salaries	0.00	0.0%	0.76	100.0%	0.76
2. Equipment operation and maintenance	0.00	0.0%	0.30	100.0%	0.30
<b>Subtotal (B)</b>	<b>0.00</b>	<b>0.0%</b>	<b>1.06</b>	<b>100.0%</b>	<b>1.06</b>
<b>Total Base Cost</b>	<b>6.46</b>	<b>54.7%</b>	<b>5.35</b>	<b>45.3%</b>	<b>11.81</b>
<b>C. Contingencies</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.75</b>	<b>100.0%</b>	<b>0.75</b>
<b>D. Financial Charges During Implementation</b>	<b>0.44</b>	<b>100.0%</b>	<b>0.00</b>	<b>0.0%</b>	<b>0.44</b>
<b>Total Project Cost (A+B+C+D)</b>	<b>6.90</b>	<b>53.1%</b>	<b>6.10</b>	<b>46.9%</b>	<b>13.00</b>
<b>% Total Project Cost</b>		<b>53.1%</b>		<b>46.9%</b>	<b>100%</b>

Source: Asian Development Bank estimates.



Table 5: Cost Estimates by Year (\$million)

Item	Total Cost	Year 1	Year 2	Year 3	Year 4	Year 5
<b>A. Investment Costs</b>						
1. Civil works	9.44	0.91	8.53	0.00	0.00	0.00
2. Mechanical and equipment	0.18	0.00	0.18	0.00	0.00	0.00
3. Consultants	1.13	0.79	0.34	0.00	0.00	0.00
a. Project management	1.13	0.79	0.34	0.00	0.00	0.00
b. Capacity development	0.00	0.00	0.00	0.00	0.00	0.00
<b>Subtotal (A)</b>	<b>10.75</b>	<b>1.70</b>	<b>9.05</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>B. Recurrent Costs</b>						
1. Salaries	0.76	0.38	0.38	0.00	0.00	0.00
2. Equipment operation and maintenance	0.30	0.00	0.30	0.00	0.00	0.00
<b>Subtotal (B)</b>	<b>1.06</b>	<b>0.38</b>	<b>0.68</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Total Base Cost</b>	<b>11.81</b>	<b>2.08</b>	<b>9.73</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>C. Contingencies</b>	<b>0.75</b>	0.18	0.57	0.00	0.00	0.00
<b>D. Financial Charges During Implementation</b>	<b>0.44</b>	0.02	0.06	0.12	0.12	0.12
<b>Total Project Cost (A+B+C+D)</b>	<b>13.00</b>	<b>2.28</b>	<b>10.36</b>	<b>0.12</b>	<b>0.12</b>	<b>0.12</b>
<b>% Total Project Cost</b>		<b>18%</b>	<b>79%</b>	<b>1%</b>	<b>1%</b>	<b>1%</b>

Source: Asian Development Bank estimates.

**C. Procurement Packages**

7. A detailed procurement plan will be updated by the PIE with the support of the procurement agent.

**(i) ADB Financing**

<b>Package Number</b>	<b>General Description</b>	<b>Estimated Value (\$'000)</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
PX-C1	Pingxiang Border- Trade Comprehensive Service Center Buildings (5 buildings)	9,379	NCB	Prior	1S1E	Q2 2017	
PX-E1	Vehicle Weigh Scales in Pingxiang Border Trade Comprehensive Service Center	199	NCB	Prior	1S1E	Q4 2017	

**(ii) Non-ADB Financing****Consulting Services**

<b>Package Number</b>	<b>General Description (Goods and Works)</b>	<b>Estimated Value</b>	<b>Procurement Method</b>	<b>Review [Prior / Post/Post (Sampling)]</b>	<b>Bidding Procedure</b>	<b>Advertisement Date (quarter/year)</b>	<b>Comments</b>
PX-CS1	Design, survey, project supervision, etc. (Pingxiang Border Trade Comprehensive Service Center)	1,213	Government	N/A		Q1 2017	

## Tranche 1 Subproject Summaries

### Subproject 7: Project Advisory Support for Exploring PPP Opportunities for Improving Border Services

#### A. Impact and Outcome

1. The project advisory support is aligned with the State Council's goal of promoting Public–Private Partnerships (PPPs) to boost private investment. The outcome will be a strengthened operational framework for Guangxi Regional Cooperation and Integration (RCI) PPPs. Performance will be assessed by the contractual close of at least two RCI PPPs over 2017-2021 that pass fiscal affordability and value-for-money tests. The project advisory support is expected to prepare PPPs with a total value of at least \$200 million.

#### B. Methodology and Key Activities

2. The design and monitoring framework for the project advisory support is in Appendix 1. It will help complete the PRC's first new RCI PPPs. Candidate projects will be screened and at least two of the priority PPPs will then proceed to detailed preparation and procurement.

3. The project advisory support will offer secondary benefits of helping build the capacity of participating local governments for PPPs through a “learning-by-doing” approach, which will address capacity and institutional development while emphasizing project preparation.

4. **Output 1** will be screened RCI PPPs. At least five candidate PPPs nominated by participating local governments will be screened. A screening assessment report will be prepared for each and submitted to the implementing agencies (IAs) of each project. The format and length of this report will be agreed with the executing agency (EA) once the list of candidate projects is finalized.

5. While the bulk of the work will be undertaken by consultants, the screening will be led by local government staff and thereby provide a valuable learning-by-doing exercise.

6. Projects to be screened will provide essential RCI services and feature in government-approved RCI investment plans. Priority will be given to projects at an advanced stage of preparation (e.g., feasibility studies are complete). Candidate PPPs for screening include logistics terminal, logistics parks, roads, water and wastewater plants, and waste management and recycling facilities.

7. Project identification and screening will utilize tools already developed by ADB for the PRC's local governments.<sup>1</sup> The screening process will assess whether a project is likely to deliver value for money by considering the scale of a project, the specificity of the outputs, risk transfer opportunities, the likelihood of financial viability and market interest in the project, and affordability for the government. Screening will identify any potential fiscal obligations and their affordability. The affordability to users will also be assessed.

8. Terms of reference (TOR) for transaction advisory services will also be prepared under this output for at least two PPPs that are to proceed and will require the engagement of external advisors.

---

<sup>1</sup> Project identification and screening will utilize the tools developed by ADB under ADB. 2015. Technical Assistance for Municipality-Level Public–Private Partnership Operational Framework for Chongqing (TA-8940). Beijing.

9. **Output 2** will be completed agreements for RCI PPPs. At least two PPPs that can provide quick benefits to priority needs for RCI will be completed (i.e. the PPP agreement will be signed by the public and social capital partner, which amounts to contractual close). Successful completion of these simple projects will provide a visible demonstration of the effectiveness of PPPs and their potential contribution to RCI. Output 2 will only commence following the successful identification candidate PPPs under the project screening of Output 1.

10. Project preparation will be led by the IA's staff, who will retain responsibility for key decisions including project approvals. All legal liability will be retained by the IAs. The consultants will provide advisory support under the guidance of these IA staff.

11. The support will ensure preparation of bankable RCI PPPs in compliance with relevant laws, regulations, government policies and guidance of the PRC.<sup>2</sup> Designs will generally align with good international practices in PPPs, while tailoring for local circumstances. The support will complement and strengthen the work undertaken by the IAs of each project. Project advisory support is to help ensure that the PPP project delivers public services efficiently and effectively, while providing value-for-money (VfM) for the IA. The PPP design is to help ensure adequate earnings for the social capital partner and providers of equity and loan finance with a balanced allocation of risks.

12. The support will encompass the preparation and due diligence of proposed projects. It may include technical, financial, economic, legal, regulatory, insurance, climate, environmental, social, institutional, governance, anticorruption and integrity, transaction structuring, and project management matters. Assistance will be provided for development, marketing, procurement, negotiation, and award of projects, including but not limited to: (i) preparing information memoranda and marketing materials; (ii) managing market testing; (iii) the conduct of assessments of economic and financial viability, fiscal affordability and value-for-money; (iv) creating and overseeing data rooms and other channels for dissemination of project information for due diligence; (iv) preparing prequalification and bidding documents inclusive of draft agreements, and financial models; (vi) managing the procurement process; and (vii) assisting with evaluations, negotiations, and awards.<sup>3</sup>

13. The PPP projects completed will achieve high standards in relation to environmental and social safeguards and gender balance. Project preparation will follow good practice procedures that are continuously improved through a learning-by-doing approach. The knowledge gained will be fed back via a continual process of improving the tools used to prepare and manage PPPs. PPP procurement will be expected to align with the principles set out in a 2012 guidance note from the multinational development banks Heads of Procurement PPP Working Group.<sup>4</sup> Competitive procurement will be followed (other modes of procurement may only be supported on an exceptional basis). Satisfaction of these international standards will ensure the PPP is suitable for ADB financing, should that be needed and requested by the government.

14. Targeted workshops and seminars and other outreach activities will raise awareness among stakeholders, disseminate findings, and seek feedback on the project advisory support.

---

<sup>2</sup> Bankable means a project that is acceptable to providers of equity and debt finance.

<sup>3</sup> The detailed tasks and structure of project advisory teams is set out in the sample terms of reference for project advisors provided at Appendix 6.

<sup>4</sup> Multinational Development Banks Heads of Procurement PPP Working Group. 2012. *Procurement & PPP Transactions Guidance for MDB Public Sector Engagements*.

### C. Cost and Financing

15. The project advisory support is estimated to cost \$1,510,000 to be financed by a loan from the ADB. The government will also provide counterpart support in the form of office space, counterpart staff, other services to consultants, and other in-kind contributions; and will assist in arranging meetings with counterpart agencies.

16. If the budget for project preparation under Output 2 is insufficient to fully complete the proposed projects, the project IAs may also be make additional contributions. They could include preparing key studies (e.g., prefeasibility and feasibility studies) or providing legal support. The mix of activities undertaken under the project advisory support or directly by local governments will be determined on a case-by-case basis.

17. The cost estimates and financing plan are in Attachment 1.

### D. Implementation Arrangements

18. The project advisory support will be implemented over 36 months from 1 April 2017 to 31 March 2020. The executing agency will be Guangxi Zhuang Autonomous Regional Government, and will also be the IA for the project screening of Output 1. Local governments responsible for each project will be the IAs for the project-specific support of Output 2.

19. As a single firm is likely to find it difficult to provide the diversity of skills and experience required, some of which will only be known once project identification is completed, and timeliness in recruitment is important, consultants will be recruited individually for Output 1. Resource persons may be engaged to provide specialist inputs to workshops and other events.

20. Separate firms will undertake the project preparation of Output 2. Unless otherwise required by the funding source, firms will be recruited using quality and cost-based selection with a quality–cost ratio of 80:20. Teams provided by firms under Output 2 are expected to be engaged on an output, lump-sum basis.<sup>5</sup> Consultants will be engaged on an individual basis if firm recruitment is unsuccessful.

21. Outline TORs for consultants and resource persons for Output 1 are in Appendix 3. Each project advisory team formed under Output 2 will have a TOR tailored to the project and the specific needs of the IA. The commercial, financial, technical, legal, environmental, economic, safeguards, procurement, and other skills and experience that the IA requires will depend on the nature and complexity of each proposed PPP project. Sample TORs for the project advisory teams for Output 2 are in Appendix 4. These TORs will be refined before recruitment.

22. The support will be monitored and evaluated based on the implementation of activities and satisfactory delivery of outputs, following the agreed time line and budget allocation. To support monitoring and evaluation, consultants will submit an inception report, midterm report, draft final report, and final report to the government and ADB for output 1 and for each PPP prepared under Output 2. Project review missions will provide the main means of monitoring progress, assessing performance, and ensuring relevance.

---

<sup>5</sup> ADB will engage consultants, as well as resource persons, in accordance with its Guidelines on the Use of Consultants (2013, as amended from time to time). Consultants funded by the A3PF will be engaged in accordance with the facilities' guidelines. The proceeds of the project advisory support will be disbursed in accordance with ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time). An advance payment facility can be used for equipment, seminars, workshops, and conferences.

**COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

Item	Output 1	Output 2	Total
<b>Asian Development Bank loan<sup>a</sup></b>			
1. Consultants			
a. Remuneration and per diem			
i. International consultants	30.00	545.00	575.00
ii. National consultants	50.00	455.00	505.00
b. International and local travel	6.50	93.50	100.00
c. Reports and communications <sup>b</sup>	5.00	20.00	25.00
2. Training, seminars, and conferences <sup>c</sup>			
a. Seminars and workshops	10.00	20.00	30.00
b. Resource persons	10.00	40.00	50.00
3. Miscellaneous administration and support costs	5.00	10.00	15.00
4. Contingencies	8.50	121.50	130.00
5. Financial Charges During Implementation	40.0	40.00	
<b>Total</b>	<b>165.00</b>	<b>1,345.00</b>	<b>1,510.00</b>

Note: The project advisory support is estimated to cost \$1,510,000, of which contributions from the proposed ADB loan are presented in the table above. The government will provide counterpart support in the form of studies, advisors, office space, counterpart staff, other services to consultants, and other in-kind contributions; and will assist in arranging meetings with counterpart agencies.

<sup>a</sup> The executing agency is the Guangxi Zhuang Autonomous Regional Government.

<sup>b</sup> Includes the cost of translation and interpretation of reports and other project advisory support outputs.

<sup>c</sup> For training, stakeholder participation, awareness-raising events, and other related workshops within the PRC.

Source: Asian Development Bank estimates.

## **OUTLINE TERMS OF REFERENCE FOR CONSULTANTS (Output 1: Project Screening)**

### **A. Overview**

1. The consultants will be responsible for conducting the project screening and producing deliverables effectively and on time, consistent with the design and monitoring framework (DMF), and for organizing and carrying out all project screening activities including workshops.
2. The executing agency (EA) will coordinate with government authorities, potential private partners to public-private partnerships (PPPs) and their financiers, and other stakeholders; and assign counterpart staff to assist the consultants. The EA will also be the implementing agency (IA), and will supervise the day-to-day work of the consultants and assume overall responsibility for seminars and workshops.
3. The team leader, in cooperation with the IA and the Asian Development Bank (ADB) project officer, will oversee, coordinate, and monitor the consultants' work.
4. The consultants will maintain close working relations with the EA and ADB, and will regularly discuss project progress and findings. Meetings involving the consultants, the EA, and as feasible, ADB staff, will be held to provide guidance to the consultants and to review their reports. The consultants will help ensure that knowledge products are disseminated (e.g., at workshops, conferences, and on government and ADB websites) and made available to stakeholders.
5. Key stakeholders will be consulted to ensure their effective participation in the conduct of the project screening. This will include the circulation among stakeholders of key materials produced, and the coordination of a workshop with government stakeholders and relevant development partners to present the key findings and lessons of the project screening. Reports are to be of high quality and produced in Chinese, with key material also produced in English. Precise reporting arrangements and time lines will be defined at inception and agreed with the IA and ADB. The outline terms of reference (TOR) will be refined before consultant recruitment.

### **B. International Consultants**

1. **Team Leader and public-private partnership (PPP) Advisor** (1 position, 1 person-month, intermittent)
6. The team leader and public-private partnership (PPP) institutional advisor will have a postgraduate degree in economics, law, management, public policy, international development, or a closely related field, as well as at least 10 years of experience in helping government agencies develop an enabling environment for PPPs, and preparing and implementing PPP projects. Previous experience in the region (Central and West Asia, or East Asia) is desirable.
7. The team leader will report to the EA, and will have overall responsibility within the consulting team for ensuring the delivery of all project screening outputs and the conduct of all activities through a government-led process that ensures local ownership of the project screening. The responsibilities will include:



- (i) assisting the EA in the identification of priority PPPs to undergo screening;
- (ii) conducting the project screening under the guidance of the EA, including coordination, communication, and information sharing and dialogue with senior members of the government and stakeholders; and establishing reporting arrangements to the EA and ensuring they are followed throughout the project screening;
- (iii) assisting in the preparation of TOR for transaction advisory services for the screened PPPs that are to proceed;
- (iv) supporting the EA in establishing an effective communication system that will raise awareness among the government and external stakeholders of PPPs, including through seminars and workshops, and preparing as necessary knowledge products and other information releases;
- (v) transferring skills and building the capacity of staff of the EA and other government agencies involved in the candidate PPPs;
- (vi) assisting the staff of the EA and other government agencies involved in the candidate PPPs to understand good practices for the identification, prioritization, and preparation of PPPs;
- (vii) reviewing the relevant internal procedures within relevant local governments, particularly between these departments and other government agencies; and relevant laws and regulations that may govern the planning process and the process of developing PPPs; and
- (viii) identifying any essential capacity development and training needs of the staff of the EA and other local governments regarding their roles and responsibilities in the subsequent preparation of PPPs.

8. In leading the project screening implementation in accordance with the terms and conditions specified in the agreement between the government and ADB, the team leader will:

- (i) coordinate and manage the inputs, activities, and outputs of the consultants, including the allocation of responsibilities between consultants, and monitoring the performance of all consultants to achieve the results sought by the DMF, including initiating and leading discussions of key implementation issues with the government and managing project screening quality control and quality assurance;
- (ii) organize project screening inception and concluding workshops with senior representatives of the government, government officials, and other relevant stakeholders to inform the preparation and/or review of the project screening;
- (iii) prepare and monitor progress and identify key risks to sustainability and the actions required to minimize these risks;
- (iv) ensure timely preparation and submission of the inception report, midterm report, and final report; and assist with project screening reviews undertaken by ADB and the government; and
- (v) consult with relevant development partners on project screening activities, ensuring that development partners are frequently informed of activities and that a high level of coordination is maintained to avoid duplication or overlap of work.

2. **Resource Persons** (up to 2 persons, up to 10 person-days each, intermittent)

9. The resource persons will have a degree in finance, economics, law, management, public policy, international development, engineering, or a closely related field, preferably with at least 10 years of experience in helping government agencies develop an enabling environment for PPPs, and preparing and implementing PPP projects and institutional reforms. Previous experience in the region (Central and West Asia, or East Asia) is desirable. The resource persons will participate in awareness raising and meetings, consultations, or workshops to provide specific expertise and experience.

### **C. National Consultants**

10. National consultants will work with local government counterparts on the conduct of the project screening, research and compile relevant documents and information, organize workshops and other events, and as necessary provide administrative and logistical support. The national consultants will be supervised by the team leader and PPP advisor.

1. **PPP Specialist** (1 position, 1 person-month, intermittent)

11. The PPP specialist will have a degree in finance, economics, law, management, public policy, international development, engineering, or a closely related field, preferably with at least 5 years of experience in helping government agencies prepare and implement investment projects.

12. The specialist will support the team leader and PPP advisor across all their roles and responsibilities, and coordinate the input of other national consultants on a day-to-day basis. Special emphasis will be laid on identifying and prioritizing PPPs, and assisting in the screening of PPPs.

2. **Legal Specialist** (1 position, 0.5 person-months, intermittent)

13. The legal specialist will have a law degree and experience in civil and commercial law. The specialist will review legal and regulatory issues faced during project screening. The specialist will also work with the team leader and PPP advisor to raise awareness of legal and regulatory issues, and assist in addressing legal issues raised by project screening.

3. **Technical Specialist** (1 position, 1 person-month, intermittent)

14. The technical specialist will have a degree in finance, economics, law, management, public policy, international development, engineering, or a closely related field, preferably with at least 5 years of experience in helping government agencies prepare and implement investment projects. The technical specialist will support the identification and screening of priority PPPs.

4. **Resource Persons** (up to 2 persons, up to 10 days each, intermittent)

15. The resource persons will have a degree in finance, economics, law, management, public policy, international development, engineering, or a closely related field, preferably with at least 10 years of experience in helping government agencies prepare and implement PPPs or other forms of public investment projects. The resource persons will participate in awareness raising and meetings, consultations, or workshops to provide specific expertise and experience.

#### **D. Reporting Requirements**

16. The team leader and PPP advisor will be responsible for ensuring that all reports, documents, and submissions produced under the project screening will be of publishable and high professional standard. With the support of other consultants, in addition to the deliverables required in the DMF, the team leader will submit the following reports in English:

- (i) **Inception report.** This report (maximum of 3 pages plus appendixes) will be submitted when the project screening is 25% complete, and provide a clear plan for implementing the project screening, challenges to its success, and a summary of the status of performance. It will, to the extent feasible, provide (a) confirmation of the overall rationale and design of the support; or (b) adjustments recommended to improve performance, including to the TOR of consultants; and (c) a detailed implementation schedule.
- (ii) **Draft final report.** This report (maximum of 5 pages plus appendixes) will (a) be submitted when the project screening is 75% complete; (c) summarize project screening activities and results, reporting against the DMF; and (d) provide recommendations on any additional steps required to sustain the results of the project screening.
- (iii) **Final report.** This report (maximum of 5 pages plus appendixes) will be submitted by the consultants within 1 month of receipt of the comments on the draft final report from the government and ADB, and will respond to the comments received.

## **OUTLINE TERMS OF REFERENCE FOR CONSULTANTS (Output 2: PPP Projects Preparation)**

### **I. Objective/Purpose**

1. The success of a public-social capital partnership (PPP) rests on the quality of project preparation and implementation. To ensure delivery of a high quality PPP, a team of advisors will be engaged to provide advisory services to the government/public contracting entity [the implementing agency (“IA”)] that is seeking a social capital partner.

2. The advisory team will advise and assist the IA in the preparation of a sound, bankable PPP projects in regional cooperation and integration (RCI) in compliance with relevant laws, regulations, government policies and guidance of the People’s Republic of China (PRC).<sup>8</sup> The advisors will complement and strengthen the work undertaken by the IA. They are to help ensure that the PPP project delivers public services efficiently and effectively, while providing value-for-money (VfM) for the IA. The advisors are also to help ensure adequate earnings for the social capital partner and providers of equity and loan finance with a balanced allocation of risks.

3. The commercial, financial, technical, legal, environmental, economic, safeguards, procurement, and other skills and experience that the IA requires will depend on the nature and complexity of the proposed PPP project. Each advisory team will have a terms of reference (TOR) tailored to the project and the specific needs of the IA.

4. The IA will be responsible for all decisions during the preparation of the PPP project, including decisions on the selection of the social capital partner and finalization of PPP agreements.

### **II. Scope of Work**

5. Advisory teams will help the IA complete the project cycle of Figure 1 (as adjusted to meet local circumstances and project needs). To do so, advisory teams may be required to:

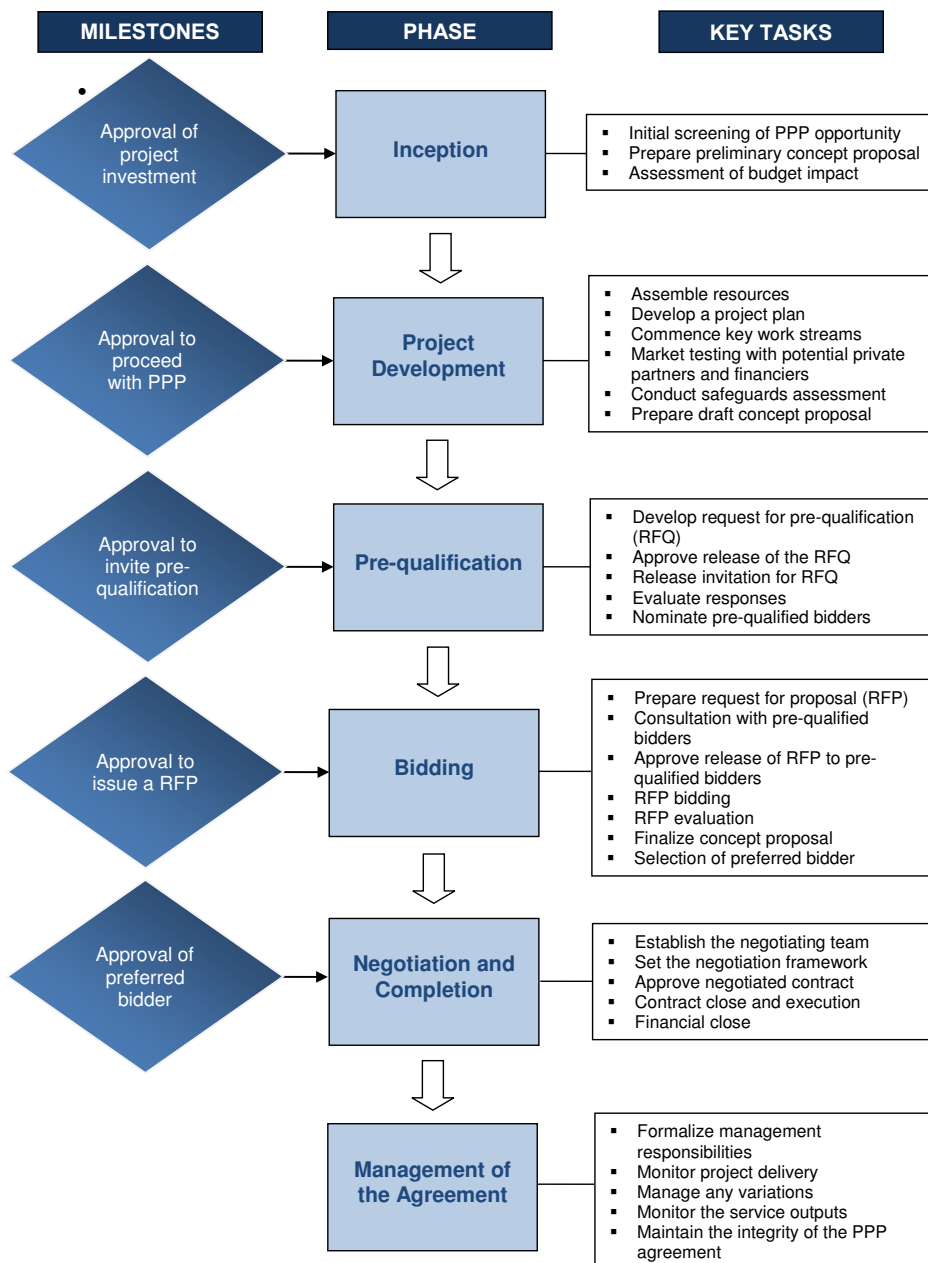
- (i) Review studies, design drawings, and concept papers, or as requested, prepare such material and the underpinning analysis (e.g., of required services and ability to pay of users and/or government, and expected demand, revenue, and cost);
- (ii) Advise on design features that will achieve the project objectives in an efficient and effective manner, including the output specification, payment mechanism, risk identification and allocation, and the commercial and financial structure of the proposed PPP project;
- (iii) Assess the PPP’s economic and financial feasibility, and whether it offers value-for-money and is fiscally affordable;
- (iv) Conduct due diligence of legal and regulatory aspects;
- (v) Prepare project information documents, tender documents, and PPP agreements;
- (vi) Test the market appetite for the PPP, and seek and incorporate into the PPP design the feedback from potential social capital partners and their financiers;
- (vii) Advise on the tender process and the evaluation of bid proposals;

---

<sup>8</sup> Bankable means a project that is acceptable to providers of equity and debt finance.

- (viii) Assist in the negotiation of PPP agreements and bringing the project to financial close,<sup>9</sup>
- (ix) Help prepare the PPP and the IA for effective contract management, and monitoring and evaluation of the PPP's performance; and
- (x) Keep accurate and up-to-date records of the process and decisions taken during the preparing and implementation of the PPP.

**Figure 1: Project Cycle**



PPP = public-private partnership, RFP = request for proposal  
 Source: Asian Development Bank estimates.

<sup>9</sup> Financial closure is achieved when all conditions necessary to permit the release of financing are satisfied.

### III. Detailed Tasks

6. The advisory team will provide timely, clear, and high quality advice to the IA on actions required to prepare and implement the PPP project in compliance with relevant laws, regulations, government policies and guidance, and within the project schedule set by the IA. As instructed by the IA, the advisory team will prepare to a high standard necessary project documents. The advisory team will follow the client's guidance and instructions on the project objective and required services, and other design features sought by the IA in the PPP. The team will help the IA develop a solid understanding of the PPP so as to ensure effective management by the IA of PPP preparation and implementation.

7. The advisory team will follow good practices for project preparation consistent with international standards and the Asian Development Bank's PPP Handbook.<sup>10</sup> Close attention will be paid to ensuring the economy, efficiency, transparency and openness of procurement.<sup>11</sup> High standards of safeguard management will be followed.<sup>12</sup>

8. The advisory team may be required to undertake the following detailed tasks:
- (i) Project management: liaison with the IA, government entities holding approval and/or review responsibilities or providing input to project preparation; informing and facilitating expert reviews and approvals; reviewing and updating the schedule for the PPP project; and coordination and management of advisors; ensuring compliance with probity requirements and the management of conflicts of interest;
  - (ii) Project analysis: Assess and review the project's underpinning analysis, including the clarification of policy goals, identification of required services, and assessment of the ability to pay of users and/or government, and expected demand, revenue, and cost;
  - (iii) PPP design: Advise on design features that will achieve the project objectives in an efficient and effective manner, including the:
    - Output specification: preparation and review of the output specification of services, procedures for ensuring compliance of assets with performance requirements and service, and identification of key performance indicators;
    - Payment mechanism: identification of relevant markets and revenue sources, including value-capture and charges for related services; preparation of and optimization of any required pricing and payment structures; development of a sustainable revenue model; and implementation through design of the PPP's payment mechanism;
    - Risk management: identification and allocation required to ensure risk is managed by the party best able to do so;
  - (iv) Financial assessment: constructing, and operating financial models; estimating the long term financial obligations of the IA including any contingent liabilities;

---

<sup>10</sup> ADB. 2008. Public-Private Partnership Handbook. Manila (available in English and Russian at <http://www.adb.org/documents/public-private-partnership-ppp-handbook>).

<sup>11</sup> Good procurement practices are set out in Multinational Development Banks Heads of Procurement PPP Working Group. 2012. Procurement & PPP Transactions Guidance for MDB Public Sector Engagements. February.

<sup>12</sup> Good practices for safeguards management are set out in the principles of the Asian Development Bank's Safeguard Policy Statement (2009). These practices include the screening of the project to (i) determine the significance of potential impacts with respect to environment and involuntary resettlement; (ii) identify the level of assessment and institutional resources required to address any safeguard issues identified, and (iii) assess whether there is adequate implementation practice, capacity, and commitment to plan, implement, monitor, and report on the safeguard measures for the project.

- (v) Commercial assessment: assessing and reporting on the bankability of the PPP; identification of financing and contractual arrangements that will ensure bankability review of project bankability while achieving project objectives; identification and as necessary formulation of guarantees or government financial contributions that may be required to ensure bankability;
- (vi) Building and equipment design; architectural, construction, and engineering support required to prepare, as required by the IA, preliminary and detailed designs with costing; identification of requirements under relevant legislation and standards; specification of the infrastructure to be provided by government to service the project site; requirements for the acceptance, maintenance, refurbishment, and handover of physical assets;
- (vii) Options appraisal: Assessment of the benefits and costs of options for delivering a project (e.g., a PPP or conventional public investment project), including the efficiency and effectiveness of the options;
- (viii) Confirmation of project viability: assessing the PPP project's economic and financial feasibility; identification and assessment of fiscal risk; and the conduct of value-for-money and fiscal affordability analysis;
- (ix) Promotion: marketing the proposed PPP project; testing market interest and seeking and incorporating market feedback on the PPP design and feasibility;
- (x) Project documentation: Review and preparation as required of preliminary; draft and final concept papers for the proposed PPP project; pre-feasibility studies and feasibility studies; preliminary and detailed design drawings; and other technical studies and requirements;<sup>13</sup>
- (xi) Environmental and social safeguards: due diligence of the management of environmental, poverty, social, gender and resettlement impacts; and as required strengthening of the project design and/or management practices applicable to the project so as to ensure the PPP will achieve good practice standards;
- (xii) Legal due diligence:
  - due diligence of the authority of government entities to enter into the PPP arrangement and to delegate responsibility for delivery of the PPP project facility and services to a social capital partner;
  - confirmation of the availability of land provided by the government, and compliance with required government approvals;
  - ensuring that project preparation, procurement and implementation is legally compliant with all applicable laws including commercial law, taxation, property, planning, environmental law, banking, competition law, and intellectual property;
- (xiii) Regulatory review: identification of any regulatory barriers to the proposed PPP and potential solutions;
- (xiv) Preparation of the PPP agreement: Drafting and refining the PPP agreement to ensure it is: legally valid; implements the proposed design; provides adequate protection of both the public and social capital partners in keeping with instructions

---

<sup>13</sup> Preparation of the concept paper is central to project preparation and implementation. Unless otherwise specified by local laws, regulations, and procedures, it will: generally follow the United Kingdom's Five Case Model, as set out in Her Majesty's Treasury. 2005. Public Sector Business Cases using the Five Case Model: a Toolkit. The Templates. A Publication of the Government of the United Kingdom. London. (available at <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>). align with good practice from Australia as set out in Commonwealth Department of Finance and Administration. 2006. Public Private Partnerships: Business Case Development, Financial Management Guidance Series No. 17. A Publication of the Australian Government. Canberra (available at [http://www.finance.gov.au/publications/fmg-series/docs/FMG\\_Business\\_Case\\_Development\\_FINAL.pdf](http://www.finance.gov.au/publications/fmg-series/docs/FMG_Business_Case_Development_FINAL.pdf)).

- from the IA and relevant laws and regulations; and will be practical to implement and provide for efficient contract monitoring and enforcement by the government;
- (xv) Procurement:
    - determination of the bidding process (e.g., single or two stage bidding);
    - preparation of the invitation to potential social capital partners to participate in the PPP process and management of a data room;
    - pre-qualification of potential social capital partners including the preparation of prequalification documents and the evaluation of responses received;
    - preparation of bidding documents and the request for proposal, including bid evaluation criteria;
    - responding to questions from bidder and the conduct of bidder conferences;
    - reviewing and evaluating bids against the bid evaluation criteria from a legal, financial, commercial, and architectural and construction perspective; review of the financial models of bidders; due diligence of the reputation of preferred bidders, including credit and other assessments on the potential social capital partners;
  - (xvi) Negotiations: preparation of the negotiating brief; participation in contract negotiations, and advising the IA during negotiations;
  - (xvii) Final appraisal: assessment (prior to PPP agreement signature and in the light of up-to-date knowledge of the market) of the extent to which the final terms obtained in negotiation represent an acceptable outcome for the IA that offers value-for-money and is fiscally affordable;
  - (xviii) Record keeping: ensuring accurate and up-to-date records of the process and decisions taken during the preparing and implementation of the PPP; and collecting and storing project documents, studies, reports, drawings, and other relevant material; and
  - (xix) Other tasks that may be necessary to the successful preparation of the PPP.

9. The final version of key project documents will be delivered to the IA in Chinese, with accompanying explanatory material provided if requested by the IA. Drafts may be prepared in English and translated as required by the IA. Project documents will, to the maximum extent possible, be written using plain language and be accessible to a wide audience.

10. So as to ensure the IA enters into project agreements on a well-informed basis, the advisory team will develop the IA's capacity to understand issues that arise during the preparation and implementation of the PPP project. The advisory team will endeavor to transfer skills and build the PPP capacity of staff of the IA and other relevant government agencies through a learning-by-doing approach. This may require advisory team members to participate in essential training and capacity development events directly relevant to the proposed PPP project and to prepare explanatory documents.

11. The detailed tasks of the advisory team will be discussed and agreed between the IA and the advisory team during the course of project preparation. A note detailing the agreed tasks will be prepared by the advisory team for approval of the IA at the commencement of the team's support, and the advisory team will commence work only after obtaining the IA's approval of the note. This note may be updated as preparation of the PPP proceeds. A maximum time input or cost may be set for each task, or for all work to be undertaken by the team or individual team members.

12. Meetings between the IA and advisory team will be held to review progress, provide guidance, and to discuss and agree findings and next steps. The IA will ensure that there is



coordination between government authorities and the advisory team, and will provide staff to work alongside the advisory team on the PPP project.

13. The IA reserves the right to end the engagement of the advisory team if it becomes apparent at any stage (e.g., at completion of the PPP feasibility studies, or concept paper) that the project is not suited to PPP, does not provide value for money, is not bankable, is no longer a development priority and should be deferred or cancelled, or is not affordable.

14. The final TORs of the advisory team will be prepared on a case-by-case basis and be tailored to the needs of each project.

#### **IV. Team Composition**

15. The advisory team will typically comprise staff members with transactional, financial modeling, legal, sector, architectural, construction, procurement, safeguard, and other relevant expertise. The typical team will include a team leader, project coordinator, and legal, financial, commercial, technical, safeguard, and procurement advisors. Advisors will generally have experience in other countries, or otherwise be familiar with good international practices, and be the lead source of advice to the project in their field. They may be supported by specialists in these fields, which will generally be national advisors. In some situations, specialists may be appointed without there also being an advisor.

16. The composition of a typical project advisory team and reporting arrangements are illustrated at Figure 2. The team leader and advisors will generally be international consultants, but may be national consultants. Specialists and the project coordinator will generally be national consultants.

17. The exact composition of a project advisory team will be tailored to the needs of each project. Advisors or specialists may be required to take on more than one role. Project teams for simpler projects, such as those prepared using standard tender documents and PPP contracts, may consist of a team leader, who may be a national consultant and some specialists only. Teams may be tasked to prepare more than one PPP.

**Figure 2: A Typical Advisory Team**



ADB = Asian Development Bank  
Source: ADB estimates.

## V. Sample TORS for Team Members

### A. Advisors

#### 1. Team Leader

18. The team leader will have strong expertise, extensive experience, and in-depth knowledge of the international experience with PPPs. Experience in preparing or implementing PPPs is essential, preferably with some of this experience in RCI. The team leader will have at least 15 years of relevant experience, and a master's degree or higher qualification in business, finance, accounting, economics, engineering, law, management, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

19. The scope of work involves team leadership and coordination. The team leader will have overall responsibility for completion of the scope of work and detailed tasks of the advisory team as agreed with the IA. This includes the overall responsibility for the assessment (prior to PPP agreement signature and in the light of up-to-date knowledge of the market) of the extent to which the final agreements represent an acceptable outcome for the IA that offers value-for-money and is fiscally affordable. The Team Leader will assist the IA decide on approvals required in the preparation and implementation of the PPP project, and will lead the provision of advice from the advisory team on the actions the IA must take to ensure the PPP project is prepared and completed to a high standard within the planned timetable.

In fostering implementation that ensures government ownership of the work of the advisory team, the team leader will have overall supervising responsibility for the following:

- (i) Agreeing with the IA the detailed tasks to be undertaken by the advisory team;
- (ii) Coordinating and managing the inputs, activities, and outputs of the advisory team members, including: allocating responsibilities; ensuring that advisory team members work in an effective, efficient, collaborative, and timely manner; monitoring the performance of advisory team members in achieving their terms of

- reference and results required by the IA; initiating and leading discussions of key implementation issues and managing TAS quality control and quality assurance;
- (iii) Guiding the conduct of the detailed tasks agreed with the IA, including: identifying key issues arising from the tasks, presenting and analyzing alternative responses to issues that arise, ensuring that relevant country requirements and experience and international experience are identified and included in the work of the advisory team, and explaining and justifying the responses recommended by the team;
  - (iv) Leading the transfer of skills and building the capacity of staff of the IA and other relevant government agencies through a learning-by-doing approach;
  - (v) Establishing reporting arrangements with the IA that promote awareness of the work undertaken under by the advisory team;
  - (vi) Preparing material for the IA to build understanding of the project and to prepare the IA for implementing the project and PPP contract management; and
  - (vii) Ensuring timely preparation and submission of all reports and other deliverables, and assisting with reviews undertaken by the IA.

## **2. Legal Advisor**

20. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with PPPs. Experience in advising on the legal aspects of preparing or implementing PPPs is essential, preferably with some of this experience in RCI. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in law. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

21. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on legal issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the legal specialist(s).

22. Detailed tasks are expected to include leadership of the legal due diligence, regulatory review preparation of the PPP agreement, and the conduct of negotiations. The advisor is also expected to play a key role during procurement.

## **3. Financial Advisor**

23. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with PPPs. Experience in the commercial aspects of preparing or implementing PPPs is essential, preferably with some of this experience in RCI. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in business, finance, accounting, economics, engineering, management, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

24. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on financial issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the financial specialist(s).

25. Detailed tasks are expected to include leadership of the financial assessment including the assessment of the PPP's financial viability. The advisor is also expected to play a key role in the design of the payment mechanisms, the provision of advice on risk management, and during procurement and the conduct of negotiations.

#### **4. Commercial Advisor**

26. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with PPPs. Experience in advising on the commercial aspects of preparing or implementing PPPs is essential, preferably with some of this experience in RCI. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in business, finance, accounting, economics, engineering, management, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

27. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on commercial issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the commercial specialist(s).

28. Detailed tasks are expected to include leadership of the commercial assessment, and promotion of the PPP. The advisor is also expected to play a key role in the design of the payment mechanisms, the provision of advice on risk management, and during procurement and the conduct of negotiations.

#### **5. Technical Advisor (Construction)**

29. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with PPPs. Experience in advising on the construction and building aspects of preparing or implementing PPPs is essential, preferably with some of this experience in RCI. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in engineering, construction, building, science, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

30. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on construction and building issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the technical specialist (construction).

31. Detailed tasks are expected to include leadership of building and equipment design. The advisor is also expected to play a key role in the project analysis, and design of the output specification and payment mechanisms, and during procurement and the conduct of negotiations.

#### **6. Technical Advisor (Regional Cooperation and Integration)**

32. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with regional cooperation and integration (RCI). Experience with

PPPs is preferred. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in business, finance, accounting, economics, engineering, management, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

33. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on RCI issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the technical specialist (RCI).

34. The advisor is expected to play a key role in the project analysis, and design of the output specification and payment mechanisms, and during procurement and the conduct of negotiations.

## **7. Procurement Advisor**

35. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with procurement. Experience in preparing or implementing PPPs is essential, preferably with some of this experience in RCI. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in procurement, engineering, construction, building, science, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

36. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on procurement issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the procurement specialist.

37. Detailed tasks are expected to include leadership of procurement.

## **8. Safeguard Advisor (Environment)**

38. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with environmental management. Experience in preparing or implementing PPPs is preferred. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in environmental management, science, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

39. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on environmental safeguard issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the social safeguard specialist.

40. Detailed tasks are expected to include leadership of the conduct of environmental assessments.

## **9. Safeguard Advisor (Social)**

41. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with social and gender analysis and management, and, resettlement and indigenous peoples safeguard management. Experience in preparing or implementing PPPs is preferred. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in social development, anthropology, public sector management, international development, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

42. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on social and gender issues, including safeguards, relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the social safeguard specialist.

43. Detailed tasks are expected to include leadership of the conduct of social safeguard assessments.

## **10. Economic Advisor**

44. The advisor will have strong expertise, extensive experience, and in-depth knowledge of the international experience with PPPs. Experience in advising on the economic aspects of preparing or implementing PPPs is essential, preferably with some of this experience in RCI. The advisor will have at least 10 years of relevant experience, and a master's degree or higher qualification in finance, economics, or other relevant field. Proficiency in English is essential. Relevant experience in the PRC, and fluency in Chinese, is desirable.

45. In working in accordance with the scope of work and detailed tasks of the advisory team, the advisor will be the lead source of advice on commercial issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The advisor will share responsibility with the team leader for the instruction and supervision of the economic specialist(s).

46. Detailed tasks are expected to include leadership of the conduct of value-for-money, fiscal affordability assessments, and options analysis. The advisor is also expected to play a key role in the project analysis, the design of the output specification and payment mechanism, and the regulatory review.

## **B. Specialists**

### **1. Legal Specialist**

47. The specialist will have legal expertise, experience, and knowledge relevant to the development of PPPs. Experience in advising on the legal aspects of preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in law. Fluency in Chinese is essential, with proficiency in English an advantage.

48. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on legal issues relevant to the preparation of

the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and legal advisor.

49. Detailed tasks are expected to include support for the legal due diligence, regulatory review preparation of the PPP agreement, and the conduct of negotiations. The specialist is also expected to play an important role during procurement.

## **2. Financial Specialist**

50. The specialist will have financial expertise, experience, and knowledge relevant to the development of PPPs. Experience in advising on the financial aspects of preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in business, finance, accounting, economics, engineering, management, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

51. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on financial issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and financial advisor.

52. Detailed tasks are expected to include support for the financial assessment including the assessment of the PPP's financial viability. The specialist is also expected to play an important key role in the design of the payment mechanisms, the provision of advice on risk management, and during procurement and the conduct of negotiations.

## **3. Commercial Specialist**

53. The specialist will have commercial expertise, experience, and knowledge relevant to the development of PPPs. Experience in advising on the commercial aspects of preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in business, finance, accounting, economics, engineering, management, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

54. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on commercial issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and commercial advisor.

55. Detailed tasks are expected to include support to the commercial assessment, and promotion of the PPP. The specialist is also expected to play an important role in the design of the payment mechanisms, the provision of advice on risk management, and during procurement and the conduct of negotiations.

## **4. Technical Specialist (Construction)**

56. The specialist will have construction and building expertise, experience, and knowledge relevant to the development of PPPs. Experience in advising on the construction and building aspects of preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in business, finance,

accounting, economics, engineering, or management, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

57. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on commercial issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and technical (construction) advisor.

58. Detailed tasks are expected to include support for building and equipment design. The specialist is also expected to play an important key role in the project analysis, and design of the output specification and payment mechanisms, and during procurement and the conduct of negotiations.

### **5. Technical Specialist (RCI)**

59. The specialist will have expertise, experience, and knowledge in RCI. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in law, business, finance, accounting, economics, engineering, management, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

60. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on RCI issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and technical advisor (RCI).

61. The specialist is expected to support the project analysis, and design of the output specification and payment mechanisms, and procurement and the conduct of negotiations.

### **6. Procurement Specialist**

62. The specialist will have expertise, experience, and knowledge in procurement. Experience in preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in science, medicine, nursing, management or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

63. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on procurement issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and procurement advisor.

64. Detailed tasks are expected to include support for procurement.

### **7. Safeguard Specialist (Environment)**

65. The specialist will have expertise, experience, and knowledge of environmental management. Experience in preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in environmental management, science, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.



66. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on environmental safeguard issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and safeguard advisor (environment) advisor.

67. Detailed tasks are expected to include support for the conduct of environmental assessments.

## **8. Safeguard Specialist (Social)**

68. The specialist will have expertise, experience, and knowledge of social and gender analysis and management, and, resettlement and indigenous peoples safeguard management. Experience in preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in social development, anthropology, public sector management, international development, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

69. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on social and gender issues, including safeguards, relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and safeguard advisor (social).

70. Detailed tasks are expected to include support for the conduct of social and gender analysis and safeguard assessments.

## **9. Economic Specialist**

71. The specialist will have economic expertise, experience, and knowledge relevant to the development of PPPs. Experience in advising on the economic aspects of preparing or implementing PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in finance, economics, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

72. In working in accordance with the scope of work and detailed tasks of the advisory team, the specialist will support the provision of advice on economic issues relevant to the preparation of the PPP. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The specialist will report to the team leader and economic advisor.

73. Detailed tasks are expected to include support for the conduct of value-for-money, fiscal affordability assessments, and options analysis. The specialist is also expected to play an important key role in the project analysis, the design of the output specification and payment mechanism, and the regulatory review.

## **C. Other Positions**

### **Project Coordinator**

74. The project coordinator will have economic expertise, experience, and knowledge relevant to the development of PPPs. Experience in advising on the preparing or implementing

PPPs is preferred. The specialist will have at least 5 years of relevant experience, and a bachelor degree or higher qualification in law, business, finance, accounting, economics, engineering, management, or other relevant field. Fluency in Chinese is essential, with proficiency in English an advantage.

75. In working in accordance with the scope of work and detailed tasks of the advisory team, the project coordinator will, as required, support the team leader in all aspects of the preparation of the PPP. The project coordinator may undertake an officer-in-charge role as needed, and provide the primary in-country focal point for the IA. The project coordinator will play a key role in ensuring the IA is well informed of and guiding project preparation at all times. The tasks will broadly follow those identified in the project cycle and as agreed with the IA. The coordinator will report to the team leader.

## VI. Output/Reporting Requirements

76. The outputs and reporting requirements of the advisory team will reflect the scope of work and detailed tasks that the IA requires. In addition, the Team Leader will, with the support of the team members, produce the reports described below in order to document and assess TAS activities. These reports are to be written in Chinese (and also in English on the request of the IA or ADB) and to be of high professional standard. Respecting all confidentiality requirements, the Team Leader will submit the following:

- (i) **Inception report.** This brief report (maximum of five pages plus appendices) will be submitted when support is 25% complete and provide a clear plan for implementing the advisory services, challenges to its success, and a summary of the status of TA performance;
- (ii) **Monthly progress reports.** This brief report (maximum of two pages plus appendices) will provide an update of implementation of the advisory services;
- (iii) **Midterm report.** This brief report (maximum of five pages plus appendices) will inform the IA of the status of implementing the terms of reference, plans for achieving the objectives of the advisory services, and a personnel schedule with accomplishments;
- (iv) **Draft final report.** This report (maximum of ten pages plus appendices) will (a) be submitted 2 months before completion of the advisory team's work, (b) summarize activities and results, reporting against the terms of reference, and (c) provide recommendations on any additional steps required to sustain the results of the advisory services; and
- (v) **Final report.** This report will be submitted within 1 month of receipt of the comments on the draft final report from the IA, and will respond to the comments received.

## Tranche 1 Subproject Summaries

### Subproject 8: Project Advisory Support on Improving Cross-border Financial and Investment Services, including Guarantees for Noncommercial Risks

#### I. OBJECTIVES

1. The objective of this project advisory support is to improve cross-border investment and financial services to meet the needs of cross-border trade and protect cross-border investments. There will be 2 outputs: (i) the development of innovative financing components to be implemented at border areas by competent financial institutions that can facilitate trade; and (ii) solutions to provide protection to foreign investors against noncommercial risks associated with cross-border investments such as currency inconvertibility and nontransferability, expropriation, civil disturbances, government breach of contractual obligations, and other material adverse government actions including change of law and regulations, and negation or cancellation of licenses and approvals.

2. Activities proposed to reach the above outcomes are:

- (i) A **baseline survey** conducted to estimate the market demand for cross-border financial services and products and current modalities used by the population in the target cities to complete cross-border trade. There will also be a **market study** on the Target Countries (defined hereinafter) to assess the non-commercial risks involved in the border economic areas and how these can be mitigated;
- (ii) A **study tour** for policy makers in the Guangxi Autonomous Region and the 3 Municipalities (to be defined hereafter) to 2 countries – one developed and one developing to study best practices and successful models in providing cross-border financial services and verify the financial and economic losses associated with noncommercial risks in such areas;
- (iii) An **international workshop** to be conducted in Nanning to share survey findings and provide capacity building support to prepare the EA and IAs in implementing the project recommendations; and
- (iv) A development of a **roadmap** to implement innovative cross-border financial services and solutions to protect cross-border investments against noncommercial risks for improving and strengthening cross-border financial services and investments in Guangxi. The roadmap will identify, design and estimate the costs of implementing the milestones to achieve the aforementioned outcome.

3. Specifically, the project advisory support will produce:

- (i) List of identified feasible trade finance products and services such as currency swaps and settlement systems to be implemented at border areas to facilitate trade;
- (ii) An innovative modality including eligibility criteria for participating financial institutions to offer the above products and services;
- (iii) List of identified noncommercial risks and estimates of the financial and economic loss caused by those risks in cross-border investments;

- (iv) Workable modality to mitigate the identified noncommercial risks including producing a manual on effective risk management strategies to mitigate the risks identified. The manual should also identify the guarantee institutions that may be eligible to act as guarantors to guarantee against those risks; and
- (v) Proposed project roadmap for implementation of recommendations.

4. The geographic areas to be covered by this project are: in Guangxi – Guangxi’s four prefecture-level municipalities in the border areas and the counties or county-level cities under their respective jurisdictions. These are (i) Fangchenggang Municipality and Dongxing City, (ii) Chongzuo Municipality and Pingxiang City and Daxin County, (iii) Baise Municipality and Jingxi County, and (iv) Qinzhou Municipality; in Viet Nam – the cities Quang Ninh, Lang Son and Cao Bang. The target countries for the international market study for the cross-border financial services will be India or Malaysia and Japan or Korea (“**Target Countries A**”) while the countries for the study on noncommercial risk on foreign investments will be Thailand or Myanmar or such other countries the consultants propose (“**Target Countries B**”).

## II. Milestones and Costs Estimates

5. The project advisory support will require following consulting services:
- Output (i): One (1) International Cross-border Financial Services Specialist and two (2) National Cross-border Financial Services Consultants;
  - Output (ii): One (1) International Investment Guarantee Specialist and two (2) National Investment Guarantee Consultants.
6. The cost estimates and budget are shown in the following tables:

Item	Output 1 (\$'000)	Output 2 (\$'000)	Total (\$'000)
ADB loan			
1. Consultants			
a. Remuneration and per diem			
i. International consultants	79.20	79.20	158.40
ii. National consultants	81.84	81.84	163.68
b. International and local travel	30.00	30.00	60.00
c. Base line survey costs including reports and communications <sup>b</sup>	20.00	30.00	50.00
2. International study tour	25.00	25.00	50.00
3. Workshops and meetings			
a. International workshop and meetings	7.50	7.50	15.00
b. Resource persons	7.50	7.50	15.00
4. Miscellaneous administration and support cost	18.00	12.00	30.00
5. Contingencies	13.96	13.96	27.92
6. Financial Charges During Implementation	25.00	25.00	50.00
<b>Total</b>	<b>308.00</b>	<b>312.00</b>	<b>620.00</b>

Note: The project advisory support is estimated to cost \$620,000, of which contributions from the proposed ADB loan are presented in the table above. The government will provide counterpart support in the form of office space, counterpart staff, other services to consultants, and other in-kind contributions; and will assist in arranging meetings with counterpart agencies. The value of government contribution is estimated to account for 17% of the total project advisory support cost.

b. Includes the cost of translation and interpretation of reports and other project advisory support outputs.  
Source: Asian Development Bank estimates.

<b>Expert</b>	<b>Person Months</b>
International Cross-border Financial Services Specialist	4
National Cross-border Financial Services Specialist	10
International Investment Guarantee Specialist	4
National Investment Guarantee Specialist Border	10
<b>Total</b>	<b>28</b>

7. The following is the proposed implementation schedule:

<b>ACTIVITIES</b>	<b>2017</b>			
	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
Hiring of consultants				
Baseline survey				
Study tours				
International workshop				
Project roadmap				

January 2017:	Advertise for consultants
February–April 2017:	Hiring of consultants
May–July 2017:	Baseline survey and survey report
May–September 2017:	Study tours and mission reports
August 2017:	International workshop and workshop report
July–Aug 2017:	Roadmap and final report

8. The Project Advisory Support will be implemented by the Guangxi Foreign Loans Project Management Office.

## Outline Terms of Reference for Consultants

### A. International Cross-Border Financial Services Specialist (4 person months)

1. The International Cross-Border Financial Services Specialist will undertake the following tasks:

- (i) Design a detailed outline of a base line survey covering three border prefectures in People's Republic of China (PRC) namely Fangchenggang, Chongzuo and Baise and three border provinces in Viet Nam namely Quang Ninh, Lang Son and Cao Bang to ascertain:
  - a. The number of active small and medium-sized enterprises (SMEs) in these prefectures and provinces involved in cross-border trade including their demographics and profile;
  - b. volume of annual cross-border trade between PRC prefectures and Viet Nam provinces including currency exchange transactions by tourists in these areas;
  - c. Type of financial services required by businesses and individuals;
  - d. Formal and informal channels used by businesses and individuals in conducting cross-border trade transactions;
  - e. Number of formal financial institutions and informal financial entities offering cross-border financial services in the survey areas;
  - f. Products and services offered by the formal financial institutions and informal financial entities;
  - g. Feedback from businesses and individuals on their level of satisfaction of the services offered by the formal and informal financial services channels;
  - h. Analyze the present flow of customs clearance, currency settlement flows and other clearance in performing cross-border trades;
  - i. Analyze existing government regulations and policies applicable on formal and informal financial institutions operating in border areas and obtain feedback from these institutions how these regulations and policies affect the way they conduct their businesses;
  - j. Other areas that the expert deem necessary to support the key assumptions of a survey of this nature.
- (ii) Provide guidance to the national consultant to perform the base line survey;
- (iii) Explore international examples of cross-border financial services models and assess usefulness of the components within those examples that can be replicated in the modalities to be recommended under this project advisory support;
- (iv) Provide content for and design of international study tours for policy makers in Target Countries A to study successful cross-border business economic zones and identify their best practices;
- (v) Perform a sectoral analysis of cross-border trades between PRC and Viet Nam based on the survey results;

- (vi) Verify the estimate of demand for cross-border financial services in the investment target areas as prepared by the national consultant;
- (vii) Verify and validate the key constraints of businesses and individuals in accessing financial services to complete cross-border trade transactions;
- (viii) Analyze the feedback received from formal and informal financial institutions on effects of government regulation and policies on their business and assess what other policies are required to improve the provision of cross-border financial services;
- (ix) Explore the effects that international trade treaties such as the Trans-Pacific Partnership may have on provision of cross-border financial services;
- (x) Assess the outreach of existing financial institutions and non-financial entities in meeting the requirements of border trade economic activities in terms of among others their organizational set up, branch network, product and services offerings as well as their institutional capabilities in supporting cross-border trade transactions;
- (xi) Identify financial institutions and intermediaries that do not have business presence in the border areas and can be invited to offer cross-border financial services in these areas. The assessment should also cover an analysis of these institutions' credibility to offer such services. Recommend eligibility criteria for participating financial institutions to set up businesses in the border economic zones;
- (xii) Assess the suitability of offering cross-border financial services in Pingxiang BEZ in the proposed Pingxiang BEZ Financial Services Centre proposed to be constructed in Tranche 2 of the MFF, and recommend measures to improve the project design;
- (xiii) Assess the suitability of present customs and settlement payment systems in meeting business and individual cross-border financial needs and how these can be integrated with the services of financial service providers in creating a comprehensive border clearance platform;
- (xiv) Ascertain gaps between the financial services offered and real needs of businesses and individuals in cross-border trade transactions;
- (xv) Propose detailed recommendations to fulfill gaps identified with a sustainability analysis (financial and institutional) on the proposals made. The recommendations should ideally define possible innovative trade finance products such as currency swap, settlement and remittance systems to be implemented, institutions that have the credibility to offer these services and ways to promote their participation, financial support (whether direct or indirect) to be given to businesses to improve their access to financing and policy changes required to be put in place by the PRC government to support the recommendations to be made in this project advisory support. The recommendations should also cover approaches to embed the greater use of

information and technology facilities by financial institutions to extend market outreach both in terms of customer base and product offerings; and

- (xvi) Develop an overall roadmap for implementation of the recommendations including the structure and modalities, overall strategy for implementation, mechanisms for implementation (whether through existing or proposed institutions), costs and financing plan, timeline of implementation and measurable target indicators to measure performance of the recommendations.

**B. National Cross-border Financial Services Specialist** (2 consultants, 5 person-months each)

2. The National Cross-border Financial Services Specialist will be required to perform tasks to support the International Cross-border Financial Services Specialist as follows:

- (i) Conduct a baseline survey based on the outline proposed by the International Cross-border Financial Service Specialist including designing survey questionnaire, implementation methodologies, timelines etc. covering three border prefectures in PRC namely Fangchenggang, Chongzuo and Baise and three border provinces in Viet Nam namely Quang Ninh, Lang Son and Cao Bang to ascertain:
  - a. The number of active SMEs in these prefectures and provinces involved in cross-border trade including their demographics and profile;
  - b. volume of annual cross-border trade between the PRC prefectures and Viet Nam provinces including currency exchange transactions by tourists in these areas;
  - c. Type of financial services required by businesses and individuals;
  - d. Formal and informal channels used by businesses and individuals in conducting cross-border trade transactions;
  - e. Number of formal financial institutions and informal financial entities offering cross-border financial services in the survey areas;
  - f. Products and services offered by the formal financial institutions and informal financial entities;
  - g. Feedback from businesses and individuals on their level of satisfaction of the services offered by the formal and informal financial services channels;
  - h. Analyze the present flow of customs clearance, currency settlement flows and other clearance in performing cross-border trades;
  - i. Analyze existing government regulations and policies applicable on formal and informal financial institutions operating in border areas and obtain feedback from these institutions how these regulations and policies affect the way they conduct their businesses;
  - j. Other areas that the expert deem necessary to support the key assumptions of a survey of this nature.

The national and international consultant may engage the services of research agencies to distribute survey questionnaires, perform face to face interviews, collect survey data and organize the raw data into tables for analysis by the national and international consultant. The approval of the implementing agency and ADB's no-objection must be obtained prior to engaging the services of such research agencies.



- (ii) Identify international examples of cross-border financial services models and provide a summary of their modality and best practices for evaluation by the international consultant.
- (iii) Propose content and timeline for international study tours for policy makers Target Countries A to study successful cross-border business economic zones and identify their best practices to enable the international consultant to provide content and design the overall format of the international study;
- (iv) Evaluate data obtained from the base line survey and provide input to the international consultant for the completion of a sectorial analysis of cross-border trades between PRC and Viet Nam based on the survey results by both the international and national consultant;
- (v) Estimate the demand for cross-border financial services in the investment target areas;
- (vi) Identify the key constraints of businesses and individuals in accessing financial services to complete cross-border trade transactions;
- (vii) Conduct face to face meetings with formal and informal financial institutions identified in the base line survey and analyze the feedback received from these institutions on effects of government regulation and policies on their business;
- (viii) Identify financial institutions and intermediaries that do not have business presence in the border areas and can be invited to offer cross-border financial services in these areas. Obtain information on these institutions such as financial statements, annual reports, research reports etc. to be provided to the international consultant;
- (ix) Analyze the FSR prepared for the Pingxiang BEZ Financial Services Centre proposed to be constructed in Tranche 2 of the MFF and identify gaps in the project design;
- (x) Identify present customs and settlement payment systems in meeting business and individual cross-border financial needs and prepare a summary of their modality, their advantages as well as their limitations;
- (xi) Recommend any capacity building study and its related costs that needs to be conducted for the benefit of border businesses to improve their access to cross-border financial services;
- (xii) Propose possible innovative trade finance products such as currency swap, settlement and remittance systems to be implemented, institutions that have the credibility to offer these services; and
- (xiii) Assist the international consultant in preparing an overall roadmap for implementation of recommendations proposed.

**C. International Investment Guarantee Specialist (4 person- months)**

3. The International Investment Guarantee Specialist will be required to perform the following tasks:

- (i) Identify countries that share similar economic and political risks as China and Viet Nam to conduct market study and international study tours, the former by the consultants, the latter by policy makers in the Guangxi Autonomous Region for the purpose of this project advisory. Suggested countries as are Target Countries B or such other countries the consultants propose;
- (ii) Design content and timeline for international study tours for policy makers to Target Countries B to study successful cross-border business economic zones and identify their best practices in mitigating noncommercial risks;
- (iii) Document a detailed profile of the economic and political profile of Target Countries B with specific reference to noncommercial risks associated with cross-border financial investments;
- (iv) Identify businesses, organizations and financial institutions at the three border prefectures in PRC namely Fangchenggang, Chongzuo and Baise and three border provinces in Viet Nam namely Quang Ninh, Lang Son and Cao Bang and border areas in Target Countries B for the purpose of conducting a market survey on;
- (v) Design a detailed outline of the market study and survey to be conducted on the entities identified in 3 above. The study should cover:
  - a. The profile of the organizations;
  - b. Volume of foreign investments in these organizations and origins of such investments;
  - c. Terms and conditions of foreign investments in these organizations;
  - d. Examples of economic disruptions caused by political risks in the Target Countries in the last 5 years and the losses suffered by foreign investors;
  - e. Existing risk management framework to mitigate noncommercial risks;
  - f. Guarantee corporations that cover noncommercial risks in the Target Countries and the modalities used; and
  - g. Other areas that the expert deem necessary to support the key assumptions of a market study of this nature

The national and international consultant may engage the services of research agencies to distribute survey questionnaires, perform face to face interviews, collect survey data and organize the raw data into tables for analysis by the national and international consultant. The approval of the implementing agency and ADB's no objection must be obtained prior to engaging the services of such research agencies.

- (vi) Analyze the market study findings and draw lessons to be learned;
- (vii) Identify entities that can provide guarantees against political risks and evaluate their business models;

- (viii) Develop a manual to include an overall framework for risk management strategies to mitigate noncommercial risks for investors in the investment target areas complete with prescribed methodologies to identify and assess the noncommercial risks that may arise in cross-border financial investments. The manual shall also include a workable guarantee model to mitigate against such noncommercial risks, the eligibility criteria for guarantee companies to be invited to offer guarantee services in the target markets and the terms and conditions for the guarantee scheme;
- (ix) Suggest policy changes to be made in addressing identified noncommercial risks; and
- (x) Develop an overall roadmap for implementation of recommendations.

**D. National Investment Guarantee Specialist** (2 consultants, 5 person-months each)

4. The national consultant will be required to perform tasks to support the International Investment Guarantee Specialist Border as follows:

- (i) Assist the international consultant in identifying countries that share similar economic and political risks as PRC and Viet Nam to conduct market study and international study tours, the former by the consultants, the latter by policy makers in the Guangxi Autonomous Region for the purpose of this project advisory. Suggested countries are Target Countries B or such other countries the consultants propose;
- (ii) Propose the content and timeline for international study tours for policy makers to Target Countries B to study successful cross-border business economic zones and identify their best practices in mitigating noncommercial risks;
- (iii) Provide input to the international consultant to provide a detailed profile of the economic and political profile of the countries identified in 1 above with specific reference to noncommercial risks associated with cross-border financial investments. These inputs may include but shall not be limited to country economic analysis, composition of local government and the ruling system, policies on foreign investments, etc.
- (iv) Shortlist businesses, organizations and financial institutions at border areas in the Target Countries to assist the international consultant in identifying entities for the purpose of conducting a market survey on;
- (v) Conduct a market study based on the design proposed by the international consultant to be conducted on the entities identified in 3 above. The study should cover:
  - a. The profile of the organizations;
  - b. Volume of foreign investments in these organizations and origins of such investments;
  - c. Terms and conditions of foreign investments in these organizations;
  - d. Examples of economic disruptions caused by political risks in the Target Countries in the last 5 years and the losses suffered by foreign investors;
  - e. Existing risk management framework to mitigate noncommercial risks;

- f. Guarantee corporations that cover noncommercial risks in the Target Countries and the modalities used; and
  - g. Other areas that the expert deem necessary to support the key assumptions of a market study of this nature.
- (vi) Assist the international consultant in analyzing the market study findings;
  - (vii) Assist the international consultant in identifying entities that can provide guarantees against political risks and provide a summary of their business models;
  - (viii) Assist the international consultant in developing a manual to include an overall framework for risk management strategies to mitigate noncommercial risks for investors in the investment target areas complete with prescribed methodologies to identify and assess the noncommercial risks that may arise in cross-border financial investments. The manual shall also include a workable guarantee model to mitigate against such noncommercial risks, the eligibility criteria for guarantee companies to be invited to offer guarantee services in the target markets and the terms and conditions for the guarantee scheme;
  - (ix) Assist the international consultant in providing evidence required to support policy changes to be made in addressing identified noncommercial risks; and
  - (x) Assist the international consultant in developing an overall roadmap for implementation of recommendations.

## **Minimum Qualification Requirements for Consultants**

### **E. International Cross-border Financial Services Specialist**

5. The international expert will have a degree in finance, business or related field from an internationally recognized institution. Work experience, of at least 10 years, must include (i) management strategy consulting work in emerging markets financial sector or commercial banking / investment banking experience with skills in structuring trade finance and debt capital market products, (ii) experience in structured finance, (iii) exposure to treasury functions at a commercial bank with good and working understanding of treasury products for international trade settlements, (iv) experience in international financial tax structures, (v) experience in evaluating credit strength of SMEs preferably in emerging economies, and (vi) Asia finance sector experience.

Minimum General Experience	15 Years
Minimum Specific Experience (relevant to assignment)	10 Years
Regional / Country experience	Required

### **F. National Cross-border Financial Services Specialist**

6. The national consultants will have a degree in finance, business or related field from an internationally recognized institution. Work experience, of at least 5 years, must include (i)

management strategy consulting work in emerging markets financial sectors, (ii) exposure to treasury products offered at commercial banks for international trade settlements and a good working knowledge of these, (iii) experience in evaluating credit strength of SMEs preferably in emerging economies, and (iv) Asia finance sector experience.

Minimum General Experience	10 Years
Minimum Specific Experience (relevant to assignment)	5 Years
Regional / Country experience	Required

#### **G. International Investment Guarantee Specialist**

7. The international expert will have a degree in finance, law, business or related field from an internationally recognized institution. Work experience, of at least 10 years, must include (i) management strategy consulting work in emerging markets financial sector or commercial banking/investment banking experience with skills in structuring trade finance and debt capital market products, (ii) experience in negotiating legal and financial terms for cross-border financial investments particularly with government entities will be an added advantage, (iii) experience in structured finance, (iv) experience in international financial tax structures, (v) experience in evaluating credit strength of SMEs preferably in emerging economies, and (vi) Asia finance sector experience.

Minimum General Experience	15 Years
Minimum Specific Experience (relevant to assignment)	10 Years
Regional / Country experience	Required

#### **H. National Investment Guarantee Specialist**

8. The national consultants will have a degree in law, finance, business or related field from an internationally recognized institution. Work experience, of at least 5 years, must include (i) management strategy consulting work in emerging markets financial sectors, (ii) drafting of legal and financial terms for cross-border financial terms will be added advantage, (iii) experience in structured finance, (iv) experience in evaluating credit strength of SMEs preferably in emerging economies, and (v) Asia finance sector experience.

Minimum General Experience	10 Years
Minimum Specific Experience (relevant to assignment)	5 Years
Regional / Country experience	Required

## Tranche 1 Subproject Summaries

### Subproject 9: Strengthening Business Development Services in Guangxi

#### A. PROJECT OUTLINE

1. This project advisory support will propose measures to strengthen business development services (BDS) in Guangxi, leading to the design of specific BDS sub-projects to be implemented in Tranche 2.
2. Four interlinked activities are proposed:
  - (i) A **baseline survey** of small and medium-sized enterprises (SMEs) and BDS in Guangxi, focusing especially on the border prefectures of Fangchenggang, Chongzuo and Baise. The baseline study will seek to refine existing statistics on the SME population, improve our understanding of the challenges and opportunities faced by Guangxi SMEs, and survey the present state of BDS in Guangxi;
  - (ii) A **study tour** for policymakers from Guangxi Autonomous Region and the three border cities to two provinces in PRC, one developing, and one developed country to observe good practices in the provision of BDS;
  - (iii) An international workshop in Nanning to share national and international good practices in the provision of BDS in developing regions; and
  - (iv) The development of a roadmap for the development of SMEs in border areas of Guangxi, with special focus on practical measures to develop a more comprehensive and efficient BDS ecosystem. The roadmap will identify, design and estimate costs of specific BDS sub-projects to be implemented in the Tranche 2.
3. A core team of one international consultant and two national consultants will be involved in all four activities outlined above in order to ensure continuity across the entire BDS development component.

#### B. MILESTONES AND COST ESTIMATES

Activities	Cost	2017			
		Q1	Q2	Q3	Q4
Core consulting team	\$220,000				
Baseline survey	\$110,000				
Study tours	\$150,000				
International workshop	\$170,000				
BDS roadmap (by core consulting team)					
<b>Total</b>	<b>\$650,000</b>				

Jan–Mar 2017	Advertise for and select core consultants and baseline survey consultants
Apr–Jul 2017	Baseline survey
Jun–Aug 2017	Study tours
Aug–Sept 2017	International workshop
Aug–Decr 2017	BDS roadmap

4. The GPMO will be responsible for implementing this project advisory support.

## C. COSTING

5. Indicative costs for the BDS project advisory support component are presented below. The total cost of the project advisory support is \$700,000, inclusive of financial charges during implementation.

### Core Consultants

6. One international consultant and two national consultants will be involved in all four activities outlined above in order to ensure continuity and coherence across the entire BDS development component. One national consultant will focus on non-financial BDS while the other will focus on SME finance. They will play a secondary role in supervising and coordinating the baseline survey, study tour and international conference, and will have primary responsibility for developing the BDS roadmap.

#### *International Consultant (1)*

1 international consultant, 4 person-months (88 days @ \$800/day):	\$70,400
Per diem for international consultant @ average rate of \$200/day for 60 days:	\$12,000
International travel: 4 round trips @ \$8,000/trip:	\$32,000
Domestic travel:	\$2,000
<b>Sub-Total</b>	<b>\$116,400</b>

#### *National Consultants (2)*

2 national consultants, 4 person-months each (88 days @ \$300/day x 2):	\$52,800
Per diem for 2 national consultants @ average rate of \$120/day for 60 days:	\$14,400
Domestic travel:	\$4,000
<b>Sub-Total</b>	<b>\$71,200</b>

Sub-Total for 1x international and 2x national consultants:	\$187,600
Contingency	\$32,400
<b>Total</b>	<b>\$220,000</b>

### Baseline Survey

7. A decision will be made subsequently whether to engage a consulting firm or a team of national consultants to conduct the baseline survey. A preliminary estimate of costs, assuming the use of a Guangxi-based consulting firm, is presented below:

	Number	Person-Months	Person-Days	Rate \$/day	Cost
Senior consultant	1	4	88	250	\$22,000
Junior consultants	3	4	88	150	\$39,600
Firm overhead					\$30,800
Travel and accommodation					\$7,600
Sub-Total					\$100,000
Contingency					\$10,000
<b>Total</b>					<b>\$110,000</b>

8. The consulting firm will be assisted by the core consultants described in the previous sub-section.

### Study tours

9. About 15 staff from government departments and BDS organizations in Guangxi will visit two provinces in PRC with effective BDS, one developing country (India or Malaysia) and one developed country (Japan or Korea). Costs are estimated as follows:

<i>Planning and arrangement of itinerary by service providers</i>	<b>\$5,000</b>
<i>People's Republic of China</i>	
Travel, including air and local – 15 persons @ \$1,000 each	\$15,000
Food, accommodation, etc. 15 persons @ \$150/day x 6 days	\$13,500
Other	\$1,000
<b>Sub-Total</b>	<b>\$29,500</b>
<i>Viet Nam, India or Malaysia</i>	
Travel, including air and local – 15 persons @ \$1,500 each	\$22,500
Food, accommodation, etc. 15 persons @ \$150/day x 6 days	\$13,500
Other	\$3,000
<b>Sub-Total</b>	<b>\$39,000</b>
<i>Japan or Korea</i>	
Travel, including air and local – 15 persons @ \$1,500 each	\$22,500
Food, accommodation, etc. 15 persons @ \$200/day x 6 days	\$18,000
Other	\$3,000
<b>Sub-Total</b>	<b>\$43,500</b>
<i>Pre- and Post-Trip Workshops</i>	
Food, accommodation, etc. 10 persons @ \$125/day x 3 days	\$3,750
Meeting room @\$500/day x 3 days	\$1,500
Workshop organization	\$2,000
Consulting services	\$2,750
<b>Sub-total</b>	<b>\$10,000</b>
<b>Total</b>	<b>\$127,000</b>
Contingency	\$23,000
<b>Grand Total</b>	<b>\$150,000</b>

Note: This budget does not include the cost of interpretation services in Viet Nam and Japan or Korea. It would be best if the Guangxi delegation could arrange for its own interpreters.

### International workshop

10. It is assumed that the workshop will be attended by a total of about 60 participants, of which 5 will be international resource persons, 10 will be national resource persons, 5-10 will be ADB staff and core consultants and 40-45 will be government officials and representatives of BDS organizations from Guangxi and elsewhere in PRC. Indicative costs for the international workshop are presented below.



	<b>Number</b>	<b>Days</b>	<b>Rate/Day</b>	<b>Cost</b>
International resource persons (IRP)	5	10	\$800	\$40,000
National resource persons (NRP)	10	8	\$300	\$24,000
Travel - IRP	5		\$6,000	\$30,000
Travel - NRP	10		\$600	\$6,000
Per diem - IRP	5	5	\$200	\$5,000
Per diem - NRP	10	5	\$150	\$7,500
Attendee - hotel	30	3	\$100	\$9,000
Attendee - travel	10		\$300	\$3,000
Meeting room	1	3	\$750	\$2,250
Meals	60	3	\$30	\$5,400
Conference materials				\$5,000
Conference organization				\$10,000
Sub-Total				\$147,150
Contingency				\$22,850
<b>Total</b>				<b>\$170,000</b>

## Tranche 1 Subproject Summaries

### Subproject 10: Project Management and Capacity Building: Institutional Support for EA, IAs and PIEs for Project Management and Implementation

1. The project will provide consulting services to support the executing agency (EA), implementing agencies (IAs), and project implementing entities (PIEs) in project management and capacity development. The consulting firm and individual consultants required will be recruited in accordance with the Asian Development Bank (ADB) *Guidelines on the Use of Consultants* (2013, as amended from time to time). The Guangxi Foreign Loans Projects Management Office (GPMO) on behalf of the EA will be responsible for engaging consultants through QCBS (quality- and cost-based selection) using 80:20 ratio, and individual consultant selection (ICS). The consulting services will be provided in three areas:

- (i) **Project Management and Capacity Building.** Consultants will be engaged through a firm to provide assistance to the EA, IAs and PIEs in project management and capacity building in order to comply with ADB requirements during implementation, including: (a) project performance management system, (b) procurement of goods and works, (c) disbursement and contract management, (d) construction planning, supervision and monitoring, (e) reporting requirements, (f) safeguards management and monitoring, (g) human resources development plan, corporate planning and financial management, (f) awareness raising and promoting the enabling environment for implementing subprojects, and (g) review and screening candidate subprojects for Tranches 2 and 3. The consultants will also provide capacity development support to the EA, IAs and PIEs including: (a) ADB's requirements on procurement, disbursement, safeguards and financial management; (b) operations and maintenance (O&M) of project components; (c) capacity development for subprojects; (d) web-based Management Information System (MIS) and other IT tools; and (e) training, organization of study visits and workshops. The detailed TORs for the specialists will be further developed by GPMO with assistance from ADB.
- (ii) **Project Start-up Consultants.** While the project management and capacity development consulting services are being engaged through a competitive bidding process, the EA, IAs and PIEs will be provided assistance to initiate project activities, in accordance with ADB procedural requirements, through engaging individual consultants and thus avoiding delays in starting project implementation. The assistance will include: (a) establishing a project management system, to ensure smooth execution of the project; (b) engagement of project management and capacity development consulting services, and also relevant training component and studies in Procurement Plan; (c) external involuntary resettlement and social safeguards monitoring, and environmental monitoring; (d) preparation and review of bidding documents for contracts under advance contracting; (e) preparation of necessary reports and provision of on-the-job-training and human resources development plan; (f) technical guidance on design and procurement of the various project advisory services; (g) technical review and guidance on the detailed engineering design for civil works subprojects, and project proposals

for future subprojects; and (h) other tasks related to investment program preparation that GPMP may reasonably request. The detailed TORs for 3 start-up specialists and external monitoring consultants will be further developed by GPMP with assistance from ADB.

- (iii) **External Monitoring Consultants.** National consultants will be provided to undertake external monitoring and evaluation (M&E) of compliance with the environment and involuntary resettlement safeguards during MFF implementation.

## A. Inputs and Cost of Consulting Services

2. The consulting service inputs for project management and capacity development are summarized below.

**Table 1: Consulting Services Inputs**

<b>Experts' Inputs</b>	<b>International</b>	<b>National</b>
<b>1. Project Management and Capacity Building</b>		
Project Management and Regional Cooperation Specialist/Team Leader	4	15
Civil Engineer		10
ICT Specialist	2	4
E-Commerce Specialist	3	6
Border Customs and Trade Facilitation Specialist	3	5
BCP Logistics Specialist	3	4
SPS Specialist	2	4
Financial Management Specialist		15
Human Resources Development and Stakeholder Engagement Specialist	3	5
Environment Specialist	2	10
Wildlife Trafficking Specialist		5
Environmental Quality Monitoring Resettlement Specialist		12
Social Development Specialist	2	6
Management Information Specialist		8
Banking Sector Specialist		14
SME Financing Specialist	2	
SME Specialist		6
Financial Institutions (FI) Due Diligence Specialist		3
<b>Subtotal</b>	<b>28</b>	<b>132</b>
<b>2. Project Start-up Consultants</b>		
Project Management and Procurement Specialists (2 persons)		15
ICT and E-Commerce Specialist		5
Public-Private Partnership Specialist		5
<b>Subtotal</b>		<b>25</b>
<b>3. External Monitoring Consultants</b>		
Environmental Monitoring Specialist		10
Resettlement and Social Monitoring Specialist		10
<b>Subtotal</b>		<b>20</b>
<b>Grand Total</b>	<b>28</b>	<b>177</b>

Source: Asian Development Bank estimates.

3. The consulting services budget is summarized below.

**Table 2: Consulting Services Budget**  
(\$'000)

<b>Item</b>	<b>Amount</b>
<b>A. Project Management and Capacity Building</b>	
1. Consultants	
a. Remuneration and Per Diem	
i. International consultants	735.00
ii. National consultants	1,065.15
b. International and Local Air Travel	1,155.75
c. Reports, Manuals, and Communications	10.00
2. Workshops, Conferences, and Meetings	100.00
3. Capacity Development	
a. Training workshops, facilitators, and resource persons <sup>1</sup>	500.00
b. Overseas/domestic study visits (provisional sum)	900.00
4. Surveys, Public Consultations, Monitoring <sup>2</sup>	100.00
5. Land Transportation (including vehicle rental and other related expenses)	200.00
6. Translation and Interpretation	200.00
7. Miscellaneous Administration and Support Costs	250.00
8. Contingency	276.35
<b>Sub-Total (a)</b>	<b>4,992.25</b>
<b>B. Project Start-up Consultants</b>	
1. Consultants	
a. Remuneration and per diem	
i. National consultants	202.50
b. Local Air Travel	29.25
2. Survey and Data Collection	10.00
3. Land Transportation (including vehicle rental and other related expenses)	10.50
4. Miscellaneous Administration and Support Costs	5.00
5. Contingency	40.00
<b>Subtotal (b)</b>	<b>297.25</b>
<b>C. External Environment, and Resettlement and Social Monitoring</b>	
1. Consultants	
a. Remuneration and per diem	
i. National consultants (2)	162.00
b. Local Air Travel	19.50
2. Survey and Data Collection	5.00
3. Miscellaneous Administration and Support Costs	4.00
4. Contingency	20.00
<b>Subtotal (c)</b>	<b>210.50</b>
<b>Grand Total (a)+(b)+(c)</b>	<b>6,000.00<sup>3</sup></b>

Source: Asian Development Bank estimates.

<sup>1</sup> Includes one wildlife trafficking training workshop for Tranche 1 (\$30,000), and environmental training (\$15,000).

<sup>2</sup> Includes public consultation on environment (\$10,000).

<sup>3</sup> Base cost only, excludes financial charges during implementation.

## **B. Outline Terms of Reference for Project Management and Capacity Building Consultants**

4. Project management and capacity building (PMC) consulting services package is estimated to comprise 28 person-months of international and 132 person-months of national consultants to be engaged through a consulting firm under the QCBS method with a standard quality:cost ratio of 80:20, requiring full technical proposal procedure. The PMC will assist the EA, IAs and PIEs in the following areas:

- (i) setting up the institutional framework, operational procedures, document filing system and work plan to guide and facilitate project implementation;
- (ii) setting up a project performance monitoring system (PPMS) in accordance with ADB requirements, including establishing baseline and operation mechanism for data collection, analysis and reporting and introducing MIS tools as appropriate;
- (iii) conducting technical review and providing expert comments on detailed design in accordance with the design codes and standards;
- (iv) assist in preparing and screening candidate subprojects for future Tranches;
- (v) promoting awareness of stakeholders, and promoting an enabling environment for subproject implementation;
- (vi) conducting contract management during project implementation, including monitoring construction progress, regular site visits and providing technical inputs to construction planning, supervision and monitoring for quality control of subproject construction, preparing progress reports, reviewing and certifying the contractor's claims for payments, providing expert inputs, review and justification for contract variations and preparing necessary documentation, coordinating project implementation among contractors and stakeholders, and coordinating daily operational tasks;
- (vii) establishing an efficient and effective financial management system for project implementation in accordance with ADB policy and procedural requirements;
- (viii) providing support to ensure compliance with ADB's requirements on environmental, involuntary resettlement, ethnic minorities, gender and social development;
- (ix) preparing necessary information for ADB's loan administration missions;
- (x) preparing human resources development plan, corporate planning and training plan in consultation with EA and IAs; and
- (xi) organizing and providing training on the skills necessary for construction supervision, project management, implementation of social and safeguards for ADB requirements, project financial management, procurement procedures and anti-corruption measures, including coordinating and preparing study tours on relevant aspects related to the project.

5. The detailed TORs for the specialists required including qualifications and experience will be further developed by GPMO with assistance from ADB. Based on the above scope of services, the indicative list of specialists with roles and responsibilities will include but is not limited to:

**Table 3: Indicative Specialists Required for Project Management and Capacity Building**

Proposed Specialists and Indicative Roles	International specialists	National specialists
<b>1. Project management and capacity building consultant</b>	<b>4</b>	<b>15</b>
<p>Project management and capacity building specialist/Team Leader &amp; Deputy Team Leader</p> <p>Overall project management and capacity building with combined support by international and national specialists.</p> <ul style="list-style-type: none"> <li>(i) closely interact with Client for smooth project implementation, and establish project management system with introduction of MIS, including internal procedures of routine data filing, information exchange among the EA, IAs and PIEs for PPMS, procurement, disbursement, financial management including internal auditing, and required reporting on project progress and safeguards;</li> <li>(ii) monitor procurement of consulting services, civil works and goods in Procurement Plan in accordance with ADB guidelines and procedural requirements;</li> <li>(iii) coordinate all consultant inputs;</li> <li>(iv) supervise collecting information for reporting requirements of ADB including, quarterly progress reports, PPMS and FAM updates for ADB's mission;</li> <li>(v) updating subproject status in Tranche 1; and</li> <li>(vi) providing training, knowledge products and capacity building on project management, procurement and financial management.</li> </ul>		
<b>2. Civil engineer</b>		<b>10</b>
<p>Technical review, supervision of subproject implementation, contract management, and capacity building for civil works and infrastructure construction, including:</p> <ul style="list-style-type: none"> <li>(i) monitoring of the projects on site and guide the construction contractors in carrying out their services for construction supervision and quality control of the works;</li> <li>(ii) inspection of the works and ensure that the quality of works executed are as specified;</li> <li>(iii) check and approve testing of materials and works and maintain the record of test results and certificates;</li> <li>(iv) verification with the contractor on labor and equipment mobilization and deployment at work sites and notify contractors if the resources are not adequate;</li> <li>(v) verification of measurement of works at site and certification of the contractor's interim payments;</li> <li>(vi) analysis of the contractor's claims on cost and time, and submit recommendations to the Team Leader.</li> <li>(vii) attend site meetings and record the minutes of meetings.</li> <li>(viii) prepare progress reports in approved format; and assist the Team Leader in finalization of the reports;</li> <li>(ix) coordinate with all the concerned agencies for compliance of all the required formalities to ensure smooth implementation of civil</li> </ul>		

Proposed Specialists and Indicative Roles	International specialists	National specialists
works; (x) verify the Contractor's As-built drawings; and (xi) assist in review and screening subproject proposals for future Tranches.		
<b>3. ICT Specialist</b>	2	4
<p>Technical review, supervision of subproject implementation and contract management and capacity building on ICT subprojects, including:</p> <ul style="list-style-type: none"> <li>(i) review proposals on development of ICT (detailed specifications based on various requirements for software and hardware, tender documents for selection of firms for procurement of software and hardware);</li> <li>(ii) review technical and infrastructure specification for security requirements (e.g. Back-up systems, anti-virus, and firewalls and etc.) for procurement;</li> <li>(iii) review of implementation and training plans for pilot testing and phased implementation;</li> <li>(iv) develop and implement the training programs for EA, IA and PIE officials and staff in ICT; and</li> <li>(v) assist in review and screening ICT subproject proposals for future Tranches.</li> </ul>		
<b>4. E-Commerce specialist</b>	3	6
<p>Technical review, supervision of subproject implementation, contract management and capacity building on cross-border e-Commerce subprojects, including:</p> <ul style="list-style-type: none"> <li>(i) review and provide technical guidance on proposals for development of cross-border e-commerce;</li> <li>(ii) review development and implementation of plans and training for pilot testing and phased implementation.</li> <li>(iii) review the identification of training needs of customs and border crossing post (BCP) officials and EA, IA and PIE staff and monitor administration of training programs;</li> <li>(iv) provide training and knowledge products to the staff of EA, IAs and PIEs on e-commerce; and</li> <li>(v) assist in review and screening of subproject proposals for future tranches.</li> </ul>		
<b>5. Border customs &amp; trade facilitation specialist</b>	3	5
<p>Technical review, supervision of subproject implementation and capacity building on border customs and trade facilitation, including:</p> <ul style="list-style-type: none"> <li>(i) identify and report the barriers to trade flows and cross-border movements between neighboring countries.</li> <li>(ii) advise on policy and regulatory issues of border management and security and broader initiatives required for the efficient operation of border processes and activities.</li> <li>(iii) provide advice and support to streamline and minimize technical and administrative barriers of cross-border passage of people, goods and trade;</li> <li>(iv) develop recommendations on improvement of cross-border procedures, help coordinate relevant governmental and private sector stakeholders engagement;</li> </ul>		5

Proposed Specialists and Indicative Roles	International specialists	National specialists
(v) review and advise on the layout and functional design of BCPs; (vi) organize and conduct workshops and training sessions for the staff of customs and border control; and (vii) assist in review and screening of subproject proposals for future tranches.		
<b>6. BCP logistics specialist</b>	<b>3</b>	<b>4</b>
<p>Technical review, supervision of subproject implementation and capacity building on cross-border trade and transport logistics, including:</p> <ul style="list-style-type: none"> <li>(i) review and advise on the design of BCP logistics systems proposed to ensure optimal efficiency and recommend improvements, including the extent of service integration for settlement, financing, insurance, and customs processing, and compare with good international practice and promote the use of information technology platforms in logistics services.</li> <li>(ii) conduct performance and cost benchmarking against best-practice international exchanges to identify areas for improvement.</li> <li>(iii) plan the international study tour of best-practice BCP facilities and shipping exchanges for relevant officials.</li> <li>(iv) assist in review and screening of subproject proposals for future tranches; and</li> <li>(v) provide training and knowledge products for staff from EA, IAs and PIEs.</li> </ul>		
<b>7. Sanitary and Phytosanitary (SPS) specialist</b>	<b>2</b>	<b>4</b>
<p>Technical review, supervision of subproject implementation and capacity building on cross-border sanitary and phytosanitary management at BCPs.</p> <ul style="list-style-type: none"> <li>(i) review and advise on the proposed SPS management systems proposed in the BCPs within the investment program scope, and recommend improvements, including addressing availability of current information from central authorities, and SPS and food safety surveillance systems for both imports and exports;</li> <li>(ii) advise on the preparation of a study tour on international good practice for relevant officials;</li> <li>(iii) provide training and knowledge products to relevant officials of BCPs, EA, IAs and PIEs on SPS surveillance; and</li> <li>(iv) assist in review and screening of subproject proposals for future tranches.</li> </ul>		
<b>8. Financial management specialist</b>		<b>15</b>
<p>Establishment of overall financial management systems for investment program implementation and related capacity building, including:</p> <ul style="list-style-type: none"> <li>(i) Develop operating plans and schedules as agreed between ADB and the EA for project implementation and subsequent operating activities.</li> <li>(ii) Develop and establish a manual and standard procedures for project accounting, internal control, funds flow management, budgeting, financial reporting and audit to the standards agreed between ADB and the EA; and</li> <li>(iii) provide training and knowledge products to the staff from EA, IAs and PIEs.</li> </ul>		



Proposed Specialists and Indicative Roles	International specialists	National specialists
<b>9. Human resources development and stakeholder engagement specialist</b>	3	5
Overall technical advice and support and capacity building on human resource development components of the investment program, and stakeholder awareness and education campaign, including: (i) reviewing design and monitoring implementation of labor and SME vocational training subprojects; (ii) developing and implementing a detailed stakeholder engagement plan to promote an enabling environment for successful project implementation; (iii) provide relevant training and knowledge products to staff from PMOs and PIEs; and (iv) assist in review and screening of subproject proposals for future tranches.		
<b>10. Environment specialist</b>	2	10
Overall project implementation support and capacity building on environment management and safeguards for all subprojects, including: (i) review, advise and monitor implementation of IEE, EMP and ESMS, including assisting staff of the EA, IAs and PIEs to conduct environmental monitoring and reporting in accordance with the environmental management plans; (ii) provide the necessary training for the IAs, PIEs, contractors and operators; (iii) support the financial intermediary (Bank of Communications) for the conduct of training needs assessment; (iv) review the compliance monitoring conducted by the external environmental monitor; (v) assist the PIEs in preparing the annual report on the implementation of environmental management plans to be submitted to ADB; (vi) assist in review, screening and reporting of subproject proposals for future tranches; (vii) provide environmental advice and inputs for subprojects #7 (Exploring PPP Opportunities for Improving Border Services), #8 (Study on Improving Cross-border Financial Services and Guarantees for Noncommercial Risks) and #9 (Strengthening Business Development Services in Guangxi), as appropriate; (viii) Undertake review of first two subproject components classified as Category B to confirm appropriate; (ix) Undertake quarterly reviews of the list of subproject components proposed for financing and carry out spot checks of environment safeguard documentation to ensure requirements are being met; (x) Identify if there is any additional need for prior review and capacity building support based on performance of ESU; and (xi) Report environmental performance issues to GPMO.		
<b>11. Wildlife Trafficking Specialist</b>		5
To support the Government with the development and implementation of wildlife trafficking capacity building training programs, cross-border dialogue on wildlife trafficking issues and assessment and reporting for future Tranches. Detailed terms of reference are given in Appendix 1.		

Proposed Specialists and Indicative Roles	International specialists	National specialists
<b>12. Environmental Quality Monitoring</b>		12
To undertake environmental monitoring of noise and air quality at locations and frequency specified in the EMP (Table EMP-4: Environmental Monitoring Program). Document results in monthly environmental monitoring report during construction and quarterly environmental monitoring report during operation until a Project Completion Report is completed.		
<b>13. Resettlement Specialist</b>	2	6
Overall project implementation support and capacity building on land acquisition and resettlement, including (i) assist the IAs, PIEs in grievance resolution and regular monitoring of any temporary and/or actual resettlement impacts during construction if any for Tranche 1 (ii) strengthen institutional capacity of IAs, PIEs, and assist the PIEs in preparing relevant sections for the project progress report to be submitted to ADB (iii) review the compliance monitoring conducted by the external monitor (iv) assist, review, monitor BOCOM's safeguards due diligence and strengthen the safeguards unit capacity in screening projects with LAR impacts and on annual reporting to ADB (v) assist in review, screening of subproject proposals and preparation of RPs and any LAR documentation for future Tranches Detailed terms of reference are given in Appendix 1.		
<b>14. Social Development Specialist</b>		8
Overall project implementation support and capacity building on social development and gender, including: (i) review, advise and monitor implementation of Social and Gender Action Plan (SGAP) during tranche 1 implementation, including assisting staff of the EA, IAs and PIEs to conduct monitoring and reporting in accordance with the SGAP; (ii) provide the necessary training for the staff responsible from IAs and PIEs; (iii) support the financial intermediary (Bank of Communications) for the conduct of training needs assessment; (iv) assist the PIEs in preparing the semi-annual report on the SGAP Implementation to be submitted to ADB; (v) review the compliance monitoring conducted by the external monitor (vi) assist in review and screening of subproject proposals for future tranches including preparation of relevant documentation for IP safeguards if triggered and social development including gender. Detailed terms of reference are provided in Appendix 1.		
<b>15. Management Information specialist</b>		14
Overall support and capacity building for developing and maintaining project performance management system (PPMS), website platform, and new media tools for subproject implementation, including: (i) design, develop and implement the PPMS based on assessment of project and ADB requirements; and (ii) prepare the operations manuals for the PPMS; and		

Proposed Specialists and Indicative Roles	International specialists	National specialists
(iii) provide guidance and training for the staff of the EA, IAs and the PIEs on the PPMS.		
<b>16. Banking sector specialist</b>	2	
Overall support and capacity building on international banking for subproject implementation in Tranche 1 and assist in review and screening subprojects for future tranches. See details in Appendix 2.		
<b>17. SME Financing Specialist</b>	2	
Overall support and capacity building on SME financing for subproject implementation in Tranche 1 and assist in review and screening subprojects for future tranches. See details in Appendix 2.		
<b>18. SME specialist</b>		6
Overall support and capacity building on national SMEs for subproject implementation in Tranche 1 and assist in review and screening subprojects for future tranches. See details in Appendix 2.		
<b>19. Financial Institution (FI) due diligence specialist</b>		3
Overall support and capacity building on national FI due diligence for subproject implementation in Tranche 1 and assist in review and screening subprojects for future tranches. See details in Appendix 2.		

6. More detailed terms of reference for the Social Safeguards Specialists are given in Appendix 1 and for the SME specialists in Appendix 2.

### C. Outline Terms of Reference for Capacity Development Program

7. The objective of the capacity building program is to assist the EA, IAs and PIEs to strengthen capacity to implement the investment program based on an understanding of the national and ADB guidelines on project implementation, monitoring and reporting, and international and national best practices. While the training will be part of the PMC consulting services package, some of the training will be delivered by the project start-up consultants and the external safeguards monitors in order to enable early initiation of project implementation. Detailed terms of reference for the training will be developed further by GPMO with assistance from ADB. Generally, the EA, IAs and PIEs will receive capacity building support in:

Training program	Scope of Training	Trainer	Trainee
Project implementation planning and management	<ul style="list-style-type: none"> <li>- project implementation work planning &amp; coordination</li> <li>- communication procedures</li> <li>- PPMS</li> <li>- record keeping</li> </ul>	Project management & procurement specialist start-up consultant  PMC consulting services	EA, IAs, PIEs

<b>Training program</b>	<b>Scope of Training</b>	<b>Trainer</b>	<b>Trainee</b>
ADB's disbursement and financial management procedures	<ul style="list-style-type: none"> <li>- ADB loan disbursement procedures</li> <li>- Role and responsibility of each stakeholder</li> <li>- Monitoring of fund flow and utilization of loan proceeds</li> <li>- budget planning, implementation, reporting, audit</li> </ul>	<p>Project management &amp; procurement specialist start-up consultant</p> <p>PMC consulting services</p>	EA, IAs, PIEs
Procurement and contract management	<ul style="list-style-type: none"> <li>- ADB's procurement process</li> <li>- Bidding document preparation</li> <li>- ADB's guideline for bid evaluation</li> <li>- Risk of misprocurement and mitigation measures</li> <li>- Handling variation orders and contract management</li> </ul>	<p>Project management &amp; procurement specialist start-up consultants</p> <p>PMC consulting services</p>	EA, IAs, PIEs
Environmental and Social Safeguards monitoring	<ul style="list-style-type: none"> <li>- ADB's SPS policy and principles</li> <li>- Legal requirements and necessary due diligence</li> <li>- Implementation of EMP, RP, IPP, SGAP</li> <li>- Roles and responsibilities of different stakeholders</li> <li>- consultation and information disclosure</li> <li>- Monitoring and reporting mechanisms and information flows</li> <li>- Grievance redress mechanism</li> </ul>	<p>External safeguards monitors</p> <p>PMC consulting services</p>	EA, IAs, PIEs, Contractors, EPBs, EMSs
Others to be developed	To be developed	To be identified	To be identified

EA = executing agency, EMP = environmental management plan, EMS = environment monitoring stations, EPB = environment protection bureaus, IA = implementing agency, PIE = project implementing entity, RP = resettlement plan, SGAP = social and gender action plan

#### **D. Outline Terms of Reference for Project Start-up Consultants**

8. Some project management and technical specialists required to enable early start-up of project implementation will be provided separately from the PMC and will be engaged as national individual consultants through the ICS method. The consultants for a total input of 25 person-months will assist the EA, IAs and PIEs with initial project implementation while the PMC consulting services are being recruited, which normally requires 3-4 months to complete. The consultants will assist in preparing and reviewing requests for proposals, bidding documents for contracts procured under advance contracting, and providing overall guidance and advice on preparing for implementation of Tranche 1 subprojects. In particular:

## **1. Project Management and Procurement Specialists (2 persons)**

9. The consultants will preferably have six years of procurement experience in infrastructure and will be engaged intermittently for 15 person-months total for the project start-up period, as appropriate. The consultants will carry out, but will not be limited to, the following tasks:

- (i) Develop a detailed procurement plan and bidding packages for Tranche 1 subprojects following ADB's Procurement Guidelines (2015, as amended from time to time).
- (ii) Develop a procurement manual as a guide for procurement activities by the small and medium-sized enterprise (SME) sub-borrowers under the financial intermediation loan (FIL) component.
- (iii) Assist in procuring consulting services under the project advisory services, in accordance with ADB guidelines and procedural requirements.
- (iv) Conduct training and workshops to build the project implementation capacity of the executing agency and implementing agencies to produce a suitable procurement package, standard bidding documents, and bid evaluation procedure.
- (v) Prepare standard procurement bidding documents for various contract packages.
- (vi) Provide procurement policy guidance as well as technical advice on strategic procurement activities to relevant officials, to ensure procurement arrangements and schedules are consistent with project implementation and development objectives.
- (vii) Work with ICT and e-Commerce Specialist to establish an initial project performance management system for the executing agency.
- (viii) Update subproject status in Tranche 1 with revisions arising from detailed engineering design in terms of technical, social development, land acquisition and resettlement, and environment safeguards.

## **2. ICT and E-Commerce Specialist**

10. The national E-commerce specialist will work with the executing agency, implementing agencies and the ADB project team to develop and design the e-commerce subprojects of the MFF.

- (i) Assess the environment for e-commerce development in Guangxi, including policies and strategies, conditions of physical infrastructure, and status of cross-border logistics for e-commerce; identify gaps and recommend measures for improvement.
- (ii) Based on the assessments, work with the executing agency and the implementing agencies and recommend measures to improve the design of the demonstration e-commerce parks in Guangxi, specifically in Longbang, Pingxiang, Fangchenggang and Qingzhou. Specific issues to be reviewed include:
  - supportive policies needed for cross-border e-commerce
  - areas of physical infrastructure which will need improvement and investment
  - measures needed to attract e-commerce enterprises

- measures needed to improve logistics services for cross-border e-commerce
  - measures for improving Customs and sanitary and phytosanitary (SPS) procedures for cross-border e-commerce, with specific recommendations on integrating cross-border e-commerce platforms with the information systems of the Customs and SPS agencies
  - measures and technical solutions for integrating the cross-border e-commerce platforms with the cross-border payment and settlement systems
  - measures for institutional and capacity development for cross-border e-commerce
- (iii) Working with the international and national civil engineering and procurement specialists to:
- prepare an implementation plan with timeline and main milestones for the development of cross-border e-commerce platforms in the Fangchenggang, Longbang, Pingxiang, and Qinzhou
  - prepare detailed costing
  - prepare procurement packages
  - draft terms of references for the consulting services needed under the e-commerce subprojects
- (iv) Conduct other tasks related to investment program preparation that the ADB project team may reasonably request.

### **3. Public–Private Partnership Specialist**

11. The consultant will preferably have six years of relevant experience in Public–Private Partnership and will be engaged intermittently for 5 person-months for the project start-up period, as appropriate. The consultant will carry out, but will not be limited to, the following tasks:

- (i) Assist the PPP advisory team in the initial project identification, screening, and prioritization of PPP projects.
- (ii) Provide initial support and coordination to the team in preparing PPP projects in compliance with relevant laws, regulations, government policies and guidance.
- (iii) Prepare relevant project information documents and help ensure the government develops a solid understanding of PPP preparation and implementation.

## **E. External Safeguards Monitoring Consultants**

### **1. External Monitor – Environment**

12. External environment monitor with at least 10 years similar experiences will be engaged intermittently for the whole duration of project implementation. The consultant firm/institute with estimated total input of 10 person-months of national consultants will be engaged by ICS method. The external environment monitor will conduct the external environmental monitoring consisting of:

- (i) sampling and monitoring of environmental quality data related to the project;
- (ii) conducting independent monitoring on environmental management plan (EMP) implementation status and additional environmental monitoring, if necessary, to verify that issues reported in the internal environmental monitoring report, quarterly progress report and semi-annual environmental progress report are in compliance with ADB's safeguards and other relevant policies;
- (iii) making recommendations and due diligence to resolve any issues or problems on implementing the EMP and providing advice to the subprojects in Tranche 1 and Tranche 2 reasonably requested by PMOs and PIEs;
- (iv) conducting detailed review on project impacts to the nature reserve, their environmental impact mitigation measures and enhancement measures to the subproject in Tranche 1 and Tranche 2 reasonably requested by PMOs and PIEs; and
- (v) submitting English and Chinese external environmental monitoring verification report to the GZARG and ADB with quality acceptable to ADB on semi-annual basis during project implementation period.

## **2. External Monitor – Resettlement and Social Development**

13. According to ADB's SPS 2009 on involuntary resettlement and PRC regulations, the resettlement work of the subprojects which trigger category A or B classification will be subject to external monitoring and evaluation (M&E). The monitoring will ensure that the resettlement processes are being implemented in accordance with the requirements set out in the resettlement plan (RP) guided by the resettlement framework (RF). The external M&E will also undertake an evaluation of changes in peoples' standard of living as a result of project and project related LAR activities. For tranche 1, the category for involuntary resettlement is C in accordance with ADB's SPS 2009. Hence there is no RP prepared and due diligence reports confirm that all LAR activities completed are in accordance with PRC laws and regulations and that LAR activities were not completed in anticipation of ADB financing. Hence, the scope and methods of external monitoring is tailored accordingly. M&E reports are submitted to ADB and EA regularly twice a year (semi-annual) during the implementation period.

14. External resettlement and social development monitor with at least 10 years similar experience with qualification in sociology/anthropology or related subject will be engaged intermittently for the whole duration of project implementation with a total input of 10 person-months. The external monitor will conduct the external monitoring consisting of:

- (i) Independent monitoring of LAR activities completed for tranche 1 and confirm category C for IP including monitoring of SGAP activities if necessary to verify that issues reported in the internal monitoring report, quarterly progress report and semi-annual progress report are in compliance with ADB's safeguards and other relevant policies;
- (ii) Confirm that the compensation provided to the villagers has been distributed to the affected villagers;
- (iii) Conduct review and monitoring of BOCOM subprojects under tranche 1 and provide necessary advice for effective functioning of ESMS unit;

- (iv) Monitor functioning of grievance redress mechanism;
- (v) Monitor and report on the process of public consultation and participation including stakeholder consultation in line with SGAP and provide advice to IAs and PIEs as required;
- (vi) Monitor and report on the various activities outlined in SGAP and its progress including adequate budget support and trained staff to implement SGAP;
- (vii) Provide training to resettlement focal and SGAP implementation staff
- (viii) Make recommendations and due diligence to resolve any issues or problems and provide advice to the subprojects in Tranche 1 and Tranche 2 requested by IAs and PIEs;
- (ix) Submit English external monitoring reports including record of grievances to the quality acceptable to ADB on semi-annual basis during project implementation period.



**PROJECT MANAGEMENT AND CAPACITY BUILDING CONSULTANTS**  
**Indicative Terms of Reference for Wildlife Trafficking and Social Safeguards**  
**Specialists**

**A. Wildlife Trafficking Specialist (National consultant, 5 person-months)**

1. The illegal smuggling of protected and controlled wildlife and timber species has been identified as a major issue in the program area. This may increase as a result of increased trade and activity associated with growth of border economic zones. In order to manage this risk, it is proposed to provide training to raise awareness and understanding of international and national wildlife laws, specific wildlife trafficking issues in the program area to build capacity for enforcement.

**Objective/Purpose of the Assignment:**

2. The wildlife trafficking consultant will be appointed through the Project Management Consulting (PMC) services to support the Government with the development and implementation of wildlife trafficking capacity building training programs, cross-border dialogue on wildlife trafficking issues and assessment and reporting for future Tranches.

**Scope of Work / detailed tasks:**

- a. Coordinate with the various organizations working to combat illegal wildlife trade and wildlife enforcement capacity building in the region<sup>1</sup> to develop a wildlife trafficking plan for the program.
- b. Implement one wildlife trafficking training program during the implementation of Tranche 1 and plan the programs to be implemented during Tranche 2 and Tranche 3. Programs should focus on key border crossing points, such as Dongxing, Longbang and Pingxiang, where program subprojects will be implemented.
- c. Support the Government and ADB with the identification of cross-boundary wildlife trafficking issues associated with Tranche 2 subprojects and provide inputs for the environmental assessment report and environmental management plan.
- d. Support the Government and ADB to integrate wildlife trafficking into the bilateral dialogue and collaboration mechanism on trade between PRC and Viet Nam.
- e. Monitor and report on progress with implementation of the wildlife trafficking awareness training program to the Government and ADB, inputs to be provided for the quarterly project progress report and the annual environmental monitoring report.

---

<sup>1</sup> Partners for training programs may include CITES Management Authority Nanning Office, Guangxi Customs, Forest Police and Provincial Anti-smuggling Offices, governmental enforcement agencies, as well as civil society, such as Wildlife Conservation Society-PRC Office, International Fund for Animal Welfare-PRC Office and Beijing Normal University.

### **Output/Reporting Requirements:**

- a. The consultant shall provide regular email briefings to ADB Project Team on progress of the procurement process and implementation of the consultant services.
- b. The consultant will monitor implementation progress and provide a summary of activities to be included in the project semi-annual Environmental Monitoring Report

**Qualifications:** Minimum postgraduate degree with a minimum of 8 years of relevant professional experience in the implementation of programs to combat wildlife trafficking. A high standard of written and spoken English communication skills and experience of the development of technical reports in English is required.

**Timing:** The assignment will be for 5 person-months, to be rendered intermittently.

### **B. Resettlement Specialists (International consultant, 2 person-months; National consultant, 6 person-months)**

3. The specialists will ensure overall project implementation support and capacity building on land acquisition and resettlement and assist the IAs, PIEs in grievance resolution and regular monitoring of any temporary and/or actual resettlement impacts during construction if any for Tranche 1 including, strengthening institutional capacity of IAs and PIEs, and assist in review, screening and preparation of Tranche 2 subprojects (as required).

4. The key tasks are the following:

- (a) Provide training to the IAs and PIEs relevant staff on ADB's involuntary resettlement policy requirements;
- (b) Assist the IAs and PIEs to enhance the consultation and participation of APs;
- (c) Assist, review, monitor BOCOM's safeguards due diligence and strengthen the safeguards unit capacity in screening projects with LAR impacts and provide support in annual reporting to ADB
- (d) Strengthen institutional capacity of IAs, PIEs, and assist the PIEs in preparing relevant sections for the project progress report to be submitted regularly to ADB
- (e) Review the compliance monitoring conducted by the external monitor
- (f) Assist the IA to identify gaps if any from the due diligence reports prepared for tranche 1 and suggest appropriate solutions in a timely manner; and
- (g) Assist the IAs and PIEs to manage the grievance redress mechanism and in record keeping of related grievances and redress measures taken.
- (h) Assist in review, screening of subproject proposals and preparation of RPs and all necessary LAR documentation for future Tranches

## **Educational Qualification and experience**

**Education:** Masters in Social Sciences/anthropology/sociology

**Experience:** He/she shall have at least 10 years working experience, including at least 5 years as a resettlement specialist in similar project assignments in PRC or other countries in the region, as well as formal qualifications in international development or closely related fields. She/he shall fully understand ADB's involuntary resettlement policy and procedures as well as Chinese policy and legislation on LAR. She/he will have good English written and oral skills.

### **C. Social Development Specialist (Social Development, gender and IP) (National consultant, 8 person-months)**

5. The specialist will ensure smooth planning and timely implementation of SGAP for Tranche 1, confirm category C for IP and assist in review, screening and preparation of Tranche 2 subprojects (as required). The specialist will work to achieve results for the following SGAP objectives:

- (i) Creation of employment opportunities during Project construction and operation
- (ii) Enhancement of Capacity of Community development and regional cooperation
- (iii) Enhancement of and prevention of Communicable Diseases and Human Trafficking
- (iv) Institutional Strengthening and Capacity Building for Project Implementation and Management

6. The specific tasks for the specialist include:

- (a) Support SGAP implementation, monitoring and reporting.
- (b) Confirm IP category C for tranche 1.
- (c) In consultation with local communities and other stakeholders (local government agencies) within the project impact zone, refine the activities such as local employment, public consultation, HIV/AIDS and Human Trafficking Prevention, under the SGAP to meet the local needs and requirements.
- (d) Develop modalities for SGAP implementation including developing strategy for liaison and coordination between various line agencies, identification and availability of budgetary sources, and coordinating with various agencies and the EA.
- (e) Establish social, poverty monitoring procedures (including baseline surveys as required.)
- (f) Coordinate with the subproject IAs, PIEs staff responsible for the Grievance Redress Mechanism with respect to identification, investigation, and resolution of any social related complaints.
- (g) Conduct site visits to the project area during the construction period.
- (h) Prepare monthly progress reports on the implementation of SGAP. Assist the IAs and PIEs, in review of updated SGAP if necessary
- (i) Develop a mechanism for the community to monitor SGAP implementation and establish strategies to address the suggestions/concerns in the implementation process.
- (j) Prepare appropriate documents to report the outcomes of various activities done under the TOR.

- (k) Review, screen subproject proposals and prepare necessary documentation for social, gender and IP safeguards for Tranche 2
- (l) Build capacities of relevant stakeholders for gender assessments to ensure strong efforts for gender design and effective gender mainstreaming in the future tranches.

**Output/ Reporting Requirements:**

7. The following reports shall be submitted by consultant/specialist to the EA and ADB.

- (a) Ensure conducting of baseline survey and establishing baseline indicators.
- (b) Monthly Report on Activities, within 1 month after mobilization, thereafter every month during the contract period.
- (c) Special Reports on workshops and Seminars, as appropriate, within 1 week of event, if any.
- (d) Recommendations for actions to improve HIV/AIDS/STI and human trafficking risks, and to all activities under the TOR.
- (e) Summary of progress with implementation of social safeguard and HIV/AIDS/STI and human trafficking assignment and other activities under the TOR for quarterly project progress reports and semi-annual monitoring reports, for EA and ADB, as required with conclusions and recommendations.
- (f) Project completion report with conclusions and recommendations.

8. The report to include appendices and all relevant data.

**Educational Qualification and experience**

**Education:** Masters in Social Sciences/anthropology/sociology

**Experience:** 10 years of experience of working in the social development sector and at least for 5 years have worked on issue of issue of social development, HIV/AIDS implementation and monitoring. The monitoring specialist will refine the SGAP and coordinate and facilitate its implementation and ensure the grievance redress mechanism functions effectively.

**Language skill:** Fluent in English and experienced in preparing safeguard requirements and social-related and HIV/AIDS documents, and all kind of reports mentioned in the TOR in English to a high standard to meet EA and ADB's requirements.

**PROJECT MANAGEMENT AND CAPACITY BUILDING CONSULTANTS**  
**Indicative Terms of Reference**  
**for Small and Medium-Sized Enterprise Specialists**

**A. International Consultants**

**1. Banking Sector Specialist and Team Leader (2 person-months)**

1. The specialist is expected to have over 10 year experience in banking sector and SME financing operation. The specialist is expected to have gained knowledge on banking sector through international consultancy work or as employees/advisors of financial institutions. Experience and knowledge of banking sector and SME financing in the People's Republic of China (PRC) will be welcome. It is required that the specialists have a post-graduate degree in finance, economic development or relevant fields, with expertise demonstrated through research articles or publications.

2. The specialist will review the relevant literature on current best practices for SME lending operations in banking sector to determine best ways for banks to develop a strategy to target credit-worthy and successful SMEs.

3. As the team leader, the specialist will be responsible for (a) overall management of the TA implementation, liaising with the Asian Development Bank (ADB), EA, and other related agencies; (b) timely delivery of good quality interim and final reports; and (c) organization of workshops and training activities. The team will submit (i) an inception report 1 month after the start of services, (ii) a draft final report 2 weeks before the conclusion of the contract, and (iii) the final report within 2 weeks after comments from ADB.

4. Additionally, the responsibilities of the specialist will include the following:

- (i) based on the desk studies, identify key issues to be addressed in the SME lending operations of potential partner financial institutions (FIs). This may include SME lending business operations review, encompassing SME credit and lending process, portfolio analysis and management, risk management, management information system review, and loan delivery and collection procedures; and
- (ii) conduct training to relevant bank personnel or government officials at all levels on international best practices in SME lending and the actual workings of SMEs, including a training and on-site review and analysis.

**2. SME Financing Specialist (2 person-months)**

5. The specialist is expected to have over 10 years' experience in working with financial institutions with least 5 years of working experience with credit review, process and transactions in developing countries. The specialist is expected to have gained knowledge through international consultancy work or as employees/advisors of financial institutions. Experience and knowledge of banking sector and SMEs in the People's Republic of China (PRC) will be welcome. It is required that the specialists have a post-graduate degree in finance, economic development or relevant fields.

6. The specialist will review the relevant literature on current best practices in banks for SME lending operations. The aim is to develop a strategy for effective and sustainable SME lending operations to support SMEs development and access to additional capital. A key component will be to develop a successful credit policy and operations for partner banks to review SME potential borrowers, design and conduct training programs for participating candidate FIs.

7. Specifically, the responsibilities of the specialist will include the following:

- (i) based on the desk studies, identify key issues to be addressed in the SME lending, including identification of market competition, product development, underwriting, portfolio management, accounting, regulatory compliance, and loan recovery mechanisms;
- (ii) prepare strategies for SME lending business;
- (iii) design and provide training to relevant bank personnel, EA, IA, and PMO staff at all levels on international best practices in SME lending in areas such as due diligence, credit underwriting and SME evaluation techniques, risk management, loan portfolio management, fraud mitigation, managing delinquencies, collection practice, loan workout, and onsite review; and
- (iv) prepare sections of the final report (to be consolidated by the team leader) and related policy notes, provide peer review for other sections of the final report, and help improve and finalize the report.

## **B. National Consultants**

### **1. SME specialist (6 person-months)**

8. One national SME specialist will be recruited to work closely with the two international specialists. The national specialist must be fluent in English and have strong expertise in the PRC SME sector and sufficient expertise in legal and regulatory areas of the SME sector. Specifically, the national specialist will report to the international consultants and assist by:

- (i) providing background information on the main research topics;
- (ii) providing logistical support to organize trainings, interpretation as needed during meetings with SMEs, banks, government officials and stakeholders and translation of documents into English on request;
- (iii) advising the international consultants on the major policy and regulatory constraints;
- (iv) advising the international consultants on whether their recommendations are appropriate from the viewpoint of (a) legal and institutional environment, and (b) market reality;
- (v) communicating ideas between the consulting team and relevant stakeholders to ensure that the recommendations of the international consultants and responses are fully understood; and
- (vi) providing support for preparation of the final reports.

### **2. Financial Institutions (FI) Due Diligence specialist (3 person-months)**

9. The specialist is expected to conduct due diligence of several banks in Guangxi Zhuang Autonomous Region (Guangxi), PRC, to select FIs for the proposed financial intermediation loan (FIL) for SME financing component in Tranche 2. The expected outcome will be a shortlist of a few local banks in Guangxi which will be suitable partners for the proposed FIL.

10. The specialist must have sufficient knowledge and at least 5 years practical experiences in the banking sector, reviewing finance information and annual reports and knowledge with the banking rules and regulations in the PRC.

11. The specialist will be responsible for undertaking a CAMELS (C – Capital Adequacy, A – Asset Quality, M – Management quality, E – Earnings, L – Liquidity, S – Sensitivity to Market) review and operating environment of several banks in Guangxi. The data and information generated by the review will be used to identify suitable partners to support ADB intervention in supporting SME financing especially in cross-border business activities. The work would be accomplished through combination of desk research, market knowledge, interviews, consultant intellectual capital and corporate investigation. Site visits will be also made. Specifically, the responsibilities of the specialist will include followings:

- (i) undertake a through due diligence of the candidate FIs in terms of (a) financial strength, (b) experience in micro and rural financing, (c) financial management procedures and prior experience in acting as a finance intermediary;
- (ii) conduct qualitative review of the banks covering views from the market, knowledge of accounting irregularities, violation of CBRC regulations;
- (iii) review of financials with an emphasis on profit figures, size and strength measures, performance measurements;
- (iv) conduct operating/structural review covering information such as formation/background, ownership, management quality, corporate governance framework, risk management framework, Anti-money laundering (AML) framework;
- (v) review the business strategy and operations, especially in the area of SME lending; and
- (vi) conduct integrity due diligence based on ADB guidelines.

# Environmental Assessment and Review Framework

---

Project Number: 50050-002  
September 2016

## PRC: Guangxi Regional Cooperation and Integration Promotion Investment Program

Prepared by the Guangxi Zhuang Autonomous Region Government for the Asian Development Bank.



## CURRENCY EQUIVALENTS

(as of 12 September 2016)

Currency Unit	–	yuan (CNY)
CNY1.00	=	\$0.1634
\$1.00	=	CNY6.1193

## ABBREVIATIONS

ADB	–	Asian Development Bank
CNY	–	Chinese yuan
CO <sub>2</sub>	–	carbon dioxide
EA	–	executing agency
EARF	–	environmental assessment and review framework
EIA	–	environmental impact assessment
EIR	–	environmental impact report
EIRF	–	environmental impact registration form
EIT	–	environmental impact table
EMP	–	environmental management plan
EPB	–	Environmental Protection Bureau
FS	–	feasibility study
FSR	–	feasibility study report
GHG	–	greenhouse gas
GPMO	–	Guangxi Foreign Loans Project Management Office
GRM	–	grievance redress mechanism
IA	–	Implementing Agency
IEE	–	initial environmental examination
LDI	–	local design institute
MSW	–	municipal solid waste
NO <sub>x</sub>	–	nitrogen oxides
PIE	–	project implementing entity
PM <sub>10</sub>	–	particulate matter with diameter ≥10 μ
PRC	–	People's Republic of China
SPS	–	safeguard policy statement
TSP	–	total suspended particulates

## NOTES

- (i) The fiscal year (FY) of the Government of the People's Republic of China and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

This environmental assessment and review framework is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the ["terms of use"](#) section on ADB's website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## TABLE OF CONTENTS

	<b>Page</b>
I. INTRODUCTION	1
II. RESPONSIBILITIES AND AUTHORITIES	3
III. SCREENING AND ENVIRONMENTAL CATEGORIZATION OF SUBPROJECTS	3
IV. PROCEDURES FOR ENVIRONMENTAL IMPACT ASSESSMENT	4
A. Scoping the Environmental Impact Assessment Study for ADB	4
B. Procedures for Preparing the Environmental Assessment Report	5
C. Procedures for Preparing the Environmental Management Plan	10
D. Report Review and Submission	11
E. Staffing Requirements and Budget	12

Appendix 1: Rapid Environmental Assessment Checklist

Appendix 2: Policy, Legal and Administrative Framework

Appendix 3: Grievance Redress Mechanism

Appendix 4: Capacity Development and Training

## I. INTRODUCTION

1. This environmental assessment and review framework (EARF) is prepared for the proposed Guangxi Regional Cooperation and Integration Promotion Investment Program (hereafter referred to as the program) in the People's Republic of China (PRC). The program comprises three tranches, each containing a number of subprojects. An initial environmental examination (IEE) report including an environmental management plan (EMP) has been prepared for the Tranche 1 subprojects.

2. **Background to the MFF Program.** The GMS Cooperation Program envisions a subregion that is more integrated, prosperous, and equitable. This vision is being pursued through a "3C" strategy of enhancing connectivity, improving competitiveness, and promoting a greater sense of community. To implement this strategy, the GMS countries have adopted an economic corridor approach, whereby transport corridors will be expanded, trade and investment promoted, and economic growth stimulated. Guangxi's Strategy and Action Plan for Participation in the GMS Program includes a Priority Investment Program for 2015-2020 intended for financing by various sources including the PRC central and Guangxi governments, multilateral development banks and the private sector. The PRC government has requested ADB to provide a \$450 million MFF to fund a group of selected priority projects in the Priority Investment Program.

3. **Impact, Outcome and Outputs of the MFF Program.** The impacts of the investment program are that economic growth potential will be realized for border areas and beyond in PRC and Viet Nam; efficient transport and trade operations along GMS economic corridors achieved; and economic integration between Guangxi and rest of the GMS further strengthened. The outcome of the investment program is that RCI opportunities in border areas in Guangxi linking PRC and Viet Nam will be optimised. The investment program will deliver five major outputs, namely:

- (i) Support for small and medium-sized enterprises in border areas expanded. The investment program will (a) provide credit support to SMEs under the financial intermediation loan (FIL) modality, using eligible local financial institutions to serve as the intermediary between the Government of Guangxi and SME borrowers; (b) strengthen business development services (BDS) for SMEs; and (c) support Guangxi's pilot of cross-border labor cooperation with Viet Nam by improving training facilities and providing well-designed training programs for Vietnamese and local workers from local SMEs. Subprojects to be financed under Tranche 1 include (a) a FIL to the Guangxi Branch of the Bank of Communications Co. Ltd. (BOCOM); (b) construction of the Fangchenggang Polytech Vocational School; (c) development of Cross-border Labor Cooperation Demonstration Park in Pingxiang; (d) provision and quality improvement of training programs for Vietnamese and Chinese workers and local SMEs; and (e) a project advisory support to better understand the situation of SMEs in Guangxi which will lead to the design and costing of specific BDS subprojects in Tranche 2.
- (ii) Cross-border financial transactions and investments increased. The investment program will support development of demonstration cross-border financial service centers, and explore and recommend measures to mitigate the non-commercial risks faced by cross-border investment. Tranche 1 will finance a project advisory support to assess the demand from SMEs for cross-border financial and investment services and recommend options for their provision in subsequent tranches.
- (iii) Integrated and interoperable cross-border e-commerce platforms for the People's Republic of China and Viet Nam developed. The investment program will develop

demonstration e-commerce incubation parks which will provide improved common infrastructure for e-commerce enterprises, including common network, common platforms for cross-border transaction, and common big-data center and cloud computing platform. The investment program will also help implement measures to improve customs and sanitary and phytosanitary (SPS) services as they are related to cross-border e-commerce. In Tranche 1, an e-commerce cross-border logistics services platform will be put in place in Longbang BEZ with real-time trade-logistics data exchange and trade process optimization.

- (iv) Key infrastructure and trade-related services in border economic zones provided. The investment program will (a) improve infrastructure within BEZs (including roads, water supply and sewage treatment); (b) improve conditions at border trade centers to facilitate border trade and provide better services to the domestic and international tourists; and (c) improve logistics facilities and services to avoid delays and lower cost for shipment of goods. In Tranche 1, the border trade service center in Pingxiang BEZ will be expanded. In addition, a project advisory support will be provided to strengthen the framework for public-private partnerships (PPP) for RCI in Guangxi and develop PPP projects for improvement of border services in future tranches.
- (v) Physical and informational connectivity and policy coordination improved. The investment program will (a) provide good and dependable cross-border transport linkages by improving border roads; and (b) upgrade infrastructure in the key border crossing points. The investment program, in coordination with ongoing and future regional technical assistance projects, will also promote effective policy and operational coordination across the border to facilitate cross-border transport and trade by supporting dialogues between the two countries at both the central government and border province level on such key issues as coordinating transport and logistics planning across the border; improving and finalizing joint master plan for BEZ development; and simplifying and harmonizing customs and SPS procedures.

4. The numbers and types of subprojects that will be included in tranches 2 and 3 are still under consideration and have not been finalized. Subprojects that involve civil works, for example, construction of buildings, facilities, roads and utility infrastructure, those that increase manufacturing production and trade are likely to have the most significant environmental impacts.

5. This EARF is a guidance document for the executing agency (EA), GPMO, for preparation of subsequent tranches, it provide guidance on (i) environmental screening and classification of subprojects, to determine the environment category of the tranche, (ii) environmental impact assessment, including related facilities, indirect, cumulative and induced impacts; (iii) public consultation and information disclosure; (iv) preparation and implementation of the environmental management plan (EMP) for each tranche; (v) monitoring and reporting; and (vi) institutional arrangements (including budget and capacity development) in accordance with environmental safeguard requirements of Safeguard Policy Statement (SPS, 2009) of the Asian Development Bank (ADB) and the relevant laws and policies of the PRC.

6. Exclusion criteria are not included as Category A, B and C will be considered. However, it should be noted that if a subsequent tranche was classified as category A, the EIA would be subject to ADB review procedures and a 120 day disclosure period prior to board approval in accordance with ADB operational requirements for MFF programs.

## **II. RESPONSIBILITIES AND AUTHORITIES**

7. The Guangxi Foreign Loans Project Management Office (GPMO) is the EA responsible for the selection of subprojects and the overall management of the proposed project. For tranches 2 and 3, GPMO is responsible for screening the subprojects, determining the environment category of each tranche, and preparing and submitting to ADB an environmental assessment report for each tranche. The Project Implementing Entities (PIEs) are responsible for the implementation of the selected subprojects. The PIEs for tranches 2 and 3 subprojects are responsible for compliance with domestic environmental impact assessment requirements and assisting the GPMO in provision of adequate environmental data to meet ADB's environmental impact assessment requirements. ADB is responsible for confirming the environmental category of each tranche and reviewing, approval and disclosure of environmental assessment reports for each tranche.

## **III. SCREENING AND ENVIRONMENTAL CATEGORIZATION OF SUBPROJECTS**

8. Each subsequent tranche shall be classified using the rapid environmental assessment (REA) screening form to determine the environment category for the tranche, A, B or C based on the significance of potential environmental impacts. Environment category A projects are those likely to have significant adverse impacts that are irreversible, diverse, or unprecedented. Category B projects are those with less adverse environmental impacts than category A projects that are mostly site-specific with few that are irreversible. Category C projects are those likely to have minimal or no adverse environmental impacts, such as those with no civil works or facility expansion or upgrading.

9. The types of subprojects involving civil works or facility expansion or upgrade would likely include (i) buildings, (ii) roads, (iii) water supply and, (iv) wastewater treatment. Appendix 1 provides the REA checklist for these four project types as well as a general checklist for other subproject types.

10. The environment category for each tranche shall be based on the subproject with the highest rating, in other words, the subproject with the most significant anticipated environmental impacts. For example, if one subproject in tranche 2 has an environment category A rating while the others have B or C ratings, tranche 2 shall be deemed to be environment category A. For environment category A, ADB SPS 2009 requires the preparation of an environmental impact assessment (EIA) report and environmental management plan (EMP). For environment category B, an initial environmental examination (IEE) report and EMP is required. The EMP provides a level of detail and mitigation and monitoring measures commensurate with the various subproject impacts and risks. For environment category C, there is no specific requirement for environmental impact assessment.

11. For each tranche, GPMO Environment Specialist shall use the REA checklist to screen all the subprojects and determine the environment category for that tranche, followed by the preparation of either an EIA or an IEE report for the tranche based on its environment category. The EIA or IEE report shall be prepared in English following the guidance and procedures in this EARF for submission to ADB for review, approval and disclosure in accordance with SPS (2009).

12. Domestic environmental assessment reporting shall be in accordance with requirements in the Directory for the Management of Construction Project Environmental Impact Assessment Categorization (MEP decree [2015] No. 33) 《建设项目环境影响评价分类管理名录》（环令【2015】33号）。All domestic environmental assessment reports shall obtain approval from the relevant environmental protection authorities before the EIA/IEE approval and disclosure.

#### IV. PROCEDURES FOR ENVIRONMENTAL IMPACT ASSESSMENT

##### A. Scoping the Environmental Impact Assessment Study for ADB

13. Selection of an appropriately qualified<sup>1</sup> domestic environmental design institute to conduct the environmental assessment study and prepare the report is of utmost importance. An environmental design institute with international funded investment project experience, particularly with ADB, is preferred. If not available, the design institute should at least have adequate experience, staffing and capability to produce all the information mentioned in this report.

14. The selection of the Feasibility Study (FS) design institute is also important, because it will have a direct bearing on the quality of the environmental assessment report. ADB requires much more detailed design engineering information for the environmental assessment reports than is required locally. In fact, ADB's 'FS' requirement is approximately equivalent to the completion of preliminary design in the PRC. Therefore, the FS design institute must have the experience, staffing, capability and willingness to meet ADB requirements. An institute with general consulting experience will not be able to meet ADB requirements.

15. Upon start of the environmental assessment study, the environmental assessment team should complete the following tasks as soon as possible:

- (i) **Site visit:** A desk study should be carried out to identify potential environmentally sensitive receptors, existing available information on the subproject sites and to identify potential subproject area of influence to be assessed during the site visit. The environmental assessment team should visit the proposed subproject sites as soon as possible to get an understanding of the environmental conditions in the vicinity. During the site visit, all targets sensitive to air, noise and water pollution from the subproject must be identified and documented As well as sensitive targets as defined in the *Directory for the Management of Construction Project Environmental Impact Assessment Categorization* (MEP Decree [2015] No. 33) 《建设项目环境影响评价分类管理名录》（环令【2015】33号） which include three categories: (i) nature reserves and protected areas, scenic areas, world cultural and natural heritage sites, drinking water source protection zones; (ii) basic farmland and grassland, forest parks, geological parks, important wetland, natural woodland, critical habitats for endangered plant and animal species, important aquatic spawning/nursery/wintering/migration grounds, regions suffering from water resource shortage, serious soil erosion areas, desertification protection areas, eutrophic water bodies; and (iii) inhabited areas with major residential, health care, scientific research, and administration functions, cultural heritage protection sites, and protection areas with

<sup>1</sup> Class A or Class B qualification as specified in Articles II and III of the *Management Measures for the Qualification of Environmental Impact Assessment for Construction Projects* (MEP decree [2015] No. 36) 《建设项目环境影响评价资质管理办法》（环令【2015】36号）

historical, cultural, scientific, and ethnic values. These should be photographed and notes taken on their relative distances to the subproject site and existing conditions.

- (ii) **Monitoring to establish baseline conditions:** Based on the site visit, the environmental assessment team should determine whether there is a need to conduct baseline monitoring. Such determination should be based on the existing environmental conditions and influencing factors in the area, the number and locations of environmental protection targets especially schools and medical clinics, the presence of ecologically sensitive or protected areas, and the presence of surface or ground drinking water sources within the subprojects area of influence. Baseline monitoring should be conducted if needed. If not carried out, then baseline conditions should be established during pre-construction stage.
- (iii) **Public consultation:** Two rounds of meaningful public consultation shall be conducted. The first round should be conducted during scoping. The purpose of the first round is to describe the subproject to the stakeholders and to solicit their views, concerns and suggestions so that these could be adequately considered in the environmental assessment study. It should be conducted as soon as the environmental assessment study is started and should be in form of a public forum. The second round should present the environmental assessment report and proposed mitigation and monitoring measures. Issues raised and how they will be addressed will be documented. Additional consultations will be carried out, as needed. More details on public consultation are provided in later sections.

16. ADB has commissioned a climate change scientist consultant to support climate risk and vulnerability assessment for all tranches of the MFF program. Support will be provided by this consultant for the screening, assessment, reporting and recommendations for detailed design to minimise climate vulnerability.

## **B. Procedures for Preparing the Environmental Assessment Report**

17. The structure of the EIA or IEE report and information required under each chapter is described below. The contents of EIA and IEE reports are similar, the difference being the disclosure duration and peer review protocol within ADB.

### **Chapter 1 – Executive Summary**

- (1) This chapter describes concisely the important facts, significant findings, and recommended actions. The following information should be included in this Chapter.
  - (i) Summarize the rationale for selecting the proposed subprojects and their sites;
  - (ii) Summarize the potential environmental benefits and impacts during construction and operation phases;
  - (iii) Summarize information disclosure and public consultation activities undertaken during environmental assessment preparation; and
  - (iv) Summarize the recommended actions in mitigating potential impacts and EMP implementation, as well as the Grievance Redress Mechanism (GRM).



## Chapter 2 – Policy, Legal, and Administrative Framework

(2) This chapter discusses the national and local legal and institutional framework within which the environmental assessment is carried out, including applicable international and national environmental standards. It also identifies project-relevant international environmental agreements to which the country is a party. Appendix 2 includes the *Policy, Legal and Administrative Framework* chapter that was prepared for the Tranche 1 IEE that can be used as a guide and modified for subsequent Tranches, once the subprojects have been identified.

## Chapter 3 – Description of the Project

(3) This chapter describes the proposed subproject. The following information should be provided in this chapter:

- (i) Description of rationale in selecting the proposed subproject and its site;
- (ii) Engineering design features of the subproject, e.g.
  - (a) For roads: road length and width, road drainage, existing traffic volume and projected traffic demand forecast, etc.;
  - (b) For buildings: floor area, number of storeys, drainage system, green building features, etc.;
  - (c) For water supply and wastewater treatment facilities: treatment capacity, treatment process, treatment standard, pipeline diameters and lengths, sludge management, etc.;
- (iii) Permanent and temporary land take areas;
- (iv) Earth cut and earth fill balance;
- (v) Construction methods and duration;
- (vi) Drawings and maps showing site location, site layout and the subprojects area of influence (assessment area); and
- (vii) Determination of assessment areas and standards in accordance with Articles 3.6 and 3.7 of HJ 19-2011 *Technical guidelines for environmental impact assessment – general program* 《环境影响评价技术导则 总纲》

## Chapter 4 – Description of the Environment

(4) This chapter describes relevant physical, biological, and socioeconomic conditions within the subproject's area of influence (assessment area). The following information should be provided in this chapter where appropriate:

- (i) Description of the subproject sites (existing land use on permanent and temporary land take areas);
- (ii) Description of air quality and noise sensitive receptors (locations, distances to the subproject site, number of households, types (e.g. school, residential, etc.);
- (iii) Description of water bodies in the assessment area, their planned function and water quality;
- (iv) Description of ecological resources that are under international, national or provincial protection; presence or absence of protected areas within the assessment area;
- (v) Description of presence or absence of physical cultural resources; and
- (vi) Information on the socio-economic profiles of the cities/counties where the subproject is located.

(5) Baseline monitoring shall be undertaken in accordance with Article 5 of HJ 2.1-2011 *Technical guidelines for environmental impact assessment – general program* 《环境影响评价技术导则 总纲》

## Chapter 5 – Anticipated Environmental Impacts and Mitigation Measures

(6) This chapter starts by describing the positive impacts and environmental benefits of the subproject, followed by information on environmental impacts during construction and operation, mitigation measures needed to reduce such impacts, including on livelihoods caused by environmental media, and resettlement. Impact assessment and prediction shall be in accordance with Article 6 of HJ 2.1-2011 *Technical guidelines for environmental impact assessment – general program* 《环境影响评价技术导则 总纲》 Impact assessment and prediction shall also follow the technical guidelines:

- (a) Air quality impact assessment shall be in accordance with the requirements and procedures in HJ 2.2-2008 *Guidelines for environmental impact assessment – atmospheric environment* 《环境影响评价技术导则 大气环境》
- (b) Noise impact assessment shall be in accordance with HJ 2.4-2009 *Technical guidelines for noise impact assessment* 《环境影响评价技术导则 声环境》
- (c) Surface water quality assessment shall be in accordance with HJ/T 2.3-93 *Technical guidelines for environmental impact assessment – surface water environment* 《环境影响评价技术导则 地面水环境》 and the discharge of wastewater during construction and operation shall comply with the Water Pollution Prevention and Control Law, 1984 (amended in 2008) 《中华人民共和国水污染防治法》2008 修订 and GB 8978-1996 *Integrated wastewater discharge standard* 《污水综合排放标准》
- (d) Ecological impact assessment shall be in accordance with HJ 19-2011 *Technical guidelines for environmental impact assessment – ecological impact* 《环境影响评价技术导则 生态影响》
- (e) Solid waste impact assessment and management during construction and operation shall be in accordance with the Solid Waste Environmental Pollution Prevention and Control Law, 1995 (amended in 2004) 《中华人民共和国固体废物污染防治法》2004 修订 and Specifications on the management of urban construction and demolition waste (Ministry of Construction Decree [2005] No. 139) 《城市建筑垃圾管理规定》建设部令 2005 年第 139 号
- (f) Potential impacts on community health and safety shall be assessed in accordance with Article 6 of HJ 19-2011 *Technical guidelines for environmental impact assessment – ecological impact* 《环境影响评价技术导则 生态影响》
- (g) Potential impacts on occupational health and safety shall be assessed in accordance with the Occupational Disease Prevention and Control Law 2001 《中华人民共和国职业病防治法》 and JGJ 146-2004 *Environmental and Hygiene Standards for Construction Sites* 《建筑施工现场环境与卫生标准》
- (h) Protection of physical cultural resources shall be in accordance with the Cultural Relics Protection Law Implementation Ordinance 2003 《中华人民共和国文物保护法实施条例》
- (i) Pollution prevention and control shall be in accordance with the “Three Simultaneity” (三同时) specified in Article 41 of the Environmental Protection Law, 1989 (amended in 2014) 《中华人民共和国环境保护法》2014 修订; and Article 16 of the

Construction Project Environmental Protection Management Ordinance, 1998 《建设项目环境保护管理条例》1998.

(7) The following information should be provided in this chapter:

- (i) Positive impacts and environmental benefits: Describe positive impacts and environmental benefits of the subproject. The description should be both qualitative and quantitative. For example, for wastewater treatment, how much pollutant loading could be reduced through treatment.
- (ii) Impact and mitigation measures during the construction phase: Provide information on the assessment results on air quality, noise, water (surface and ground) quality, waste, ecology, community health and safety, occupational health and safety, and cultural heritage during the construction phase. Information to address the key environmental issues during construction of the subproject must be included here, and the information should be quantitative as far as possible. The following should be noted:
  - (a) the assessment results should be quantitative,
  - (b) compare these results with the environmental standards in Chapter 2 to see if they comply with or exceed the relevant standards,
  - (c) if there is exceedance, propose mitigation measures that will reduce the environmental impact to acceptable levels, and
  - (d) also list these mitigation measures in the environmental management plan (EMP).
- (iii) **Socio-economic impacts**  
Provide information on
  - (a) area of land to be permanently acquired by the subproject,
  - (b) area of land to be temporarily occupied by the subproject,
  - (c) how much of the land to be permanently acquired is cultivated land,
  - (d) area of buildings to be demolished,
  - (e) number of persons to be resettled due to the subproject, and
  - (f) impacts on livelihoods during construction and operation.

The land to be permanently acquired represents resources that will be permanently lost and that cannot be replaced. This is an irreversible impact.
- (iv) Impact and mitigation measures during the operation phase: Provide information on the assessment results on air quality, noise, water (surface and ground) quality, waste, ecology and cultural heritage during the operation phase. Information to address the key environmental issues during operation of the subproject must be included here, and the information should be quantitative as far as possible. The following should be noted:
  - (a) the assessment results should be quantitative,
  - (b) compare these results with the environmental standards to see if they comply with or exceed the relevant standards,
  - (c) if there is exceedance, propose mitigation measures that will reduce the environmental impact to acceptable levels,
  - (d) also list these mitigation measures in the environmental management plan (EMP),
  - (e) assess impact from demand on resources as well, e.g. the quantity of ground water extracted by the water supply project and assess such impact due to increased demand on this resource, and

- (f) also describe pollutant reductions during the operation phase, e.g., the amount of BOD<sub>5</sub> and COD<sub>Cr</sub> reduced from discharging into the river due to the provision of WWTP by the subproject, etc.
- (v) For all subprojects involving civil works and increased use of energy and/or emissions, discuss climate risk assessment and mitigation measures, and calculate the total annual carbon dioxide emissions from traffic traveling on the proposed roads in the long term design year, to assess whether the ADB threshold of 100,000 t/a carbon dioxide emission from all subprojects is exceeded.

## Chapter 6 – Analysis of Alternatives

(8) This chapter describes various options considered for the subproject in accordance with the requirements in Article 14 of the HJ 2.1-2011 *Technical guidelines for environmental impact assessment – general program* 《环境影响评价技术导则 总纲》, including the “no project” option. Examples of options evaluated could include road paving, road drainage design, slope stabilization design, etc. for road subprojects; different treatment processes and different piping materials for water supply and wastewater treatment subprojects.

## Chapter 7 – Information Disclosure, Consultation, and Participation

(9) This chapter describes the public consultations conducted during the environmental assessment study in accordance with Articles 53 and 56 of the *Environmental Protection Law*, 1989 (amended in 2014) 《中华人民共和国环境保护法》2014 修订; Article 21 of the *Environmental Impact Assessment Law*, 2002 《中华人民共和国环境影响评价法》2002; *Method for public participation in environmental protection* {MEP Decree [2015] No. 35} 《环境保护公众参与办法》环境保护部令[2015]第 35 号; and Article 8 of HJ 2.1-2011 *Technical guidelines for environmental impact assessment – general program* 《环境影响评价技术导则 总纲》.

(10) ADB requires that consultation is meaningful and prefers it to be conducted in the form of a discussion forum. Two rounds of public consultation should be conducted. The first round should be conducted during the scoping for the environmental assessment, to introduce the subproject and to solicit opinions, suggestions and concerns for consideration during environmental assessment. The second round should be conducted after completion of the draft environmental assessment report, to explain potential environmental impacts and corresponding mitigation measures, and to also solicit opinions, suggestions and concerns for further consideration during the finalization of the environmental assessment report. Information to be provided in this chapter includes:

- (i) the dates and locations of the public consultation,
- (ii) the number and make up (e.g. government representatives, village leaders, private citizens, gender, age, employment status) of participants questions, concerns, ideas,
- (iii) issues and suggestions made by the participants,
- (iv) how are the questions, concerns, ideas and suggestions raised by the participants addressed in the environmental assessment study and report, and
- (v) the planned information disclosure (including the type of information to be disseminated and the method of dissemination) and the process for carrying out consultation with affected people and facilitating their participation during subproject implementation.

## Chapter 8 – Grievance Redress Mechanism

(11) This chapter describes the grievance redress framework (both informal and formal channels), setting out the time frame and mechanisms for resolving complaints about environmental performance. The GRM which has been developed for Tranche 1 is an umbrella program GRM that can be used for all tranches of the MFF program and centrally co-ordinated and managed by GPMO. In addition to the program GRM, each subproject should define local subproject specific entry points, for example, the Contractor, PIE, local EPB. The GRM is included in Appendix 3 as a reference source.

## Chapter 9 – Environmental Management Plan

(12) An Environmental Management Plan (EMP) has to be prepared in accordance with Article 17 of the *Environmental Impact Assessment Law, 2002* 《中华人民共和国环境影响评价法》2002 ; Article 8 of the *Construction Project Environmental Protection Management Ordinance, 1998* 《建设项目环境保护管理条例》1998; and Article 10 of HJ 2.1-2011 *Technical guidelines for environmental impact assessment – general program* 《环境影响评价技术导则 总纲》 as an Appendix to the environmental assessment report. The requirements of the EMP are described in later sections. Chapter 9 in the environmental assessment report summarizes the key components of the EMP, which include:

- (i) a summary of environmental impacts and their respective mitigation measures,
- (ii) a summary of the environmental monitoring plan,
- (iii) public consultation needs during the construction and operation phases,
- (v) responsibilities of various parties during the implementation of the EMP,
- (vi) develop subproject specific GRM entry points under the existing umbrella program GRM (see Appendix 3 for program GRM), and
- (vii) cost estimates for implementing the EMP
- (viii) EMP training
- (ix) Tranche readiness indicators.

## Chapter 10 – Conclusions

(13) Chapter 10 summarizes the findings of the environmental assessment study. It should include information on:

- (a) subproject benefits including both socio-economic and environmental benefits,
- (b) summary of significant environmental impacts during the construction and operation phases, and their respective mitigation measures,
- (c) the use of irreplaceable resources such as the area of land and associated habitats and resources that will be permanently lost due to permanent land acquisition, and
- (d) highlights of the environmental management plan including environmental monitoring requirements.

### C. Procedures for Preparing the Environmental Management Plan

18. The EMP should include 5 main items. These are (i) insitutional arrangements and responsibilities for EMP implementation, (ii) environmental mitigation measures, (iii) environmental monitoring and reporting, (iv) public consultation, v) institutional strengthening

and training, (vi) tranche readiness indicators and (vii) subproject entry points to program GRM (see Appendix 3). These items are described below.

19. The EMP should include a table listing the implementation of the mitigation measures (see Table EMP-2 of the Tranche 1 EMP for an example of how to present). All mitigation measures for the subproject mentioned in the environmental assessment report should be listed in this table, covering the detail design, construction and operation phases. It is important to include the detailed design phase because some mitigation measures such as drainage and slope stability will become part of the infrastructure and will have to be designed and included in the specifications for tendering. It is important to clearly state the responsibilities, on who is responsible for implementation and who for supervision. Cost estimates also need to be provided. To avoid double counting of costs, costs for items that will become a permanent part of the facility (such as road side landscaping, road drainage etc.) and for items that are already included in the daily operational costs of the subprojects should not be included in this table, since these should already have been included in the overall subproject cost. Example of costs to be included in the table : watering of construction site and haul roads to reduce dust, temporary noise barriers around noisy machines, sedimentation basins and perimeter drainage ditch to control muddy site runoff, temporary chemical toilets for construction workers, operational issues, etc.

20. Based on results of the environmental impact assessment and the locations of sensitive targets such as residential areas, hospitals, schools, temples, rivers, etc, an environmental monitoring plan should be compiled for the construction and operation phases (see Table EMP-4 of the Tranche 1 EMP). The plan should be impact and location specific. For example, construction dust and noise monitoring at environmental protection target locations might only be needed when construction activities are within 500 m of the targets. The plan should also be very specific on the parameters to be monitored, the total number of monitoring locations, the exact locations (=location and name of each sensitive target) where monitoring is to be carried out, and the frequency and duration of monitoring. The table should also list clearly who is responsible for doing the monitoring and who is responsible for supervision. Cost estimates should be provided for undertaking such monitoring, as well as for the operation phase. There should also be provisions for internal monitoring of project facilities during operations, drawing on the analysis of impacts during operations.

21. There is a need for ongoing public consultation during the construction and operation phases. The EMP should identify the number and types of public consultation, responsible parties and any required budget. Several types of public involvement should be carried out including site visits, interviews, workshops and investigation of specific issues.

22. This report should make reference to the GRM already established for the program, attached in Appendix 3. However, local entry points to the GRM, such as, PIEs, contractors and EPB should also be identified.

23. The EMP should include a reporting plan that sets out internal and external reporting requirements and frequency.

#### **D. Report Review and Submission**

24. The GPMO should first review the EIA or IEE. Their review criteria will be based on adequacy of information requirements described in this report. If the reports are deemed to fulfil the information requirements described in this EARF, the GPMO will submit to ADB for review,

approval and disclosure. If the tranche is Category A, the EIA and EMP will be disclosed on ADB website 120 days prior to board approval.

## **E. Institutional Capacity and Implementation Arrangements**

25. The Project Management Consulting (PMC) services funded through the Tranche 1 program loan (see *Facility Administration Manual* for full details) include an international environment consultant (2 months) and a national consultant (10 months) to support GPMO with the preparation of Tranche 2. These Consultants will work with GPMO, domestic environmental and design institutes to ensure that environmental screening, assessment, reporting and disclosure is carried out in line with this EARF and in co-ordination with ADB.

26. Institutional strengthening and training of the GPMO, PIEs and contractors involved in the delivery of subprojects under the Tranche is important in ensuring that they have the capacity to implement the EMP. The PMC Environment Consultants should undertake a capacity assessment of GPMO and PIEs for subsequent tranches and identify an appropriate capacity building and training program, to be included in the EMP. Terms of Reference and budget should be included in the updated Facility Administration Manual. There will be a need for appointment of qualified environment focal points within PIEs for EMP co-ordination, implementation, site inspections and monitoring of GRM.

27. For any subprojects involving civil works, PIEs should be encouraged to commission an independent Environmental Supervision Engineer to provide independent monitoring and verification of EMP implementation. An external environmental monitor (EEM, an independent consultant) should be recruited under the PMC service to guide GPMO and PIEs in implementing the EMP and ensuring compliance with ADB's Safeguard Policy Statement (SPS 2009).

28. GPMO, PIEs and contractors will receive training in EMP implementation, supervision, and reporting, and on the GRM (Appendix 4, includes an example training and capacity development plan that was prepared for Tranche 1). Training could be facilitated by the EEM with support of experts under the PMC services, as needed.

29. A wildlife trafficking study has been carried out and a wildlife trafficking enforcement training program has been proposed that will start during Tranche 1 and carry on during subsequent tranches. The PMC budget includes 5 months for a national wildlife trafficking consultant to support preparation for subsequent tranches and to develop a training program. Tranche 1 also includes an allocation of \$30,000 to carry out a training program at one of three (Dongxing, Pingxing and Longbang) targeted border posts. It is proposed to include a \$30,000 training allocation under each Tranche to allow training programs to be implemented at the other two targeted border posts. This should be included in the EMP implementation budget and in the updated FAM for the periodic financing request.

30. **Implementation Budget.** The GPMO shall bear all the costs for preparing the environmental assessment studies and EIA or IEE reports, the PIEs shall bear all costs for implementation of the environmental mitigation measures and environmental monitoring, and public consultation for the subprojects during implementation. The EMP, periodic financing request and updated FAM for each subsequent tranche will detail environmental consulting services agreed with GPMO to provide support for implementation and training.

31. **Monitoring and Reporting.** The EMP and updated FAM will include a monitoring and reporting plan for the Tranche and its component subprojects. If the Tranche is classified as Category A for environment, the GPMO should prepare and submit a semi-annual report to ADB. If the Tranche is classified as Category B for environment and risks during implementation are minor then annual environmental monitoring report may be acceptable. This will be agreed with ADB during the Tranche approval process. ADB will carry out semi-annual or annual missions to review environmental compliance. Should significant issues be identified in the reports or missions then the PIE for the subproject should prepare and agree an environmental corrective plan with GPMO and ADB. The Facility Administration Manual includes an environmental reporting plan, this will be updated as part of the periodic financing request for each subsequent tranche.

32. **Change in Scope.** Should there be any major change in scope that materially alters or fundamentally affects the Tranche and subprojects purpose (immediate objectives), components, costs, benefits, procurement, or other implementation arrangements as approved by the Board they will be subject to screening and safeguards classification. If major changes in scope are classified as category A or B there will be a need to update the EIA/IEE and EMP. The updated reports will be disclosed. For major changes in scope that would be Category A, the updated EIA and EMP will be disclosed for 120 days prior to approval.



## APPENDIX 1: RAPID ENVIRONMENTAL ASSESSMENT CHECKLIST

<p><b>Instructions:</b></p> <p>(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES), for endorsement by Director, RSES and for approval by the Chief Compliance Officer.</p> <p>33. (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.</p> <p>(iii) Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.</p>
---

**Country/Project Title:**

**Sector Division:**

Screening Questions	Yes	No	Remarks
<b>Part I: Buildings</b>			
<b>A. Project Siting</b> Is the project area adjacent to or within any of the following areas:			
▪ Underground utilities			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
▪ Bay			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ Encroachment on historical/cultural areas?			
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ Impacts on the sustainability of associated sanitation and			

Screening Questions	Yes	No	Remarks
solid waste disposal systems?			
▪ Dislocation or involuntary resettlement of people?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?			
▪ Increased noise and air pollution resulting from increased traffic volume?			
▪ Occupational and community health and safety risks?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ Generation of dust in sensitive areas during construction?			
▪ Requirements for disposal of fill, excavation, and/or spoil materials?			
▪ Noise and vibration due to blasting and other civil works?			
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?			
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?			
▪ Risks to community health and safety caused by management and disposal of waste?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
<b>Part II: Roads and Highways</b>			
<b>A. Project Siting</b>			
Is the project area adjacent to or within any of the following			

Screening Questions	Yes	No	Remarks
environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?			
▪ encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation during project construction and operation?			
▪ noise and vibration due to blasting and other civil works?			
▪ dislocation or involuntary resettlement of people?			
▪ dislocation and compulsory resettlement of people living in right-of-way?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?			
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ poor sanitation and solid waste disposal in construction			

Screening Questions	Yes	No	Remarks
<p>camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?</p>			
<ul style="list-style-type: none"> <li>▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ increased noise and air pollution resulting from traffic volume?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ social conflicts if workers from other regions or countries are hired?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.</li> </ul>			
<b>Part III: Water Supply</b>			
<b>A. Project Siting</b>			
Is the project are			
<ul style="list-style-type: none"> <li>▪ Densely populated?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ Heavy with development activities?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ Adjacent to or within any environmentally sensitive areas?</li> </ul>			
<ul style="list-style-type: none"> <li>• Cultural heritage site</li> </ul>			
<ul style="list-style-type: none"> <li>• Protected Area</li> </ul>			
<ul style="list-style-type: none"> <li>• Wetland</li> </ul>			
<ul style="list-style-type: none"> <li>• Mangrove</li> </ul>			
<ul style="list-style-type: none"> <li>• Estuarine</li> </ul>			
<ul style="list-style-type: none"> <li>• Buffer zone of protected area</li> </ul>			
<ul style="list-style-type: none"> <li>• Special area for protecting biodiversity</li> </ul>			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> <li>• Bay</li> </ul>			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
<ul style="list-style-type: none"> <li>▪ pollution of raw water supply from upstream wastewater discharge from communities, industries, agriculture, and soil erosion runoff?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ hazard of land subsidence caused by excessive ground water pumping?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ social conflicts arising from displacement of communities?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ conflicts in abstraction of raw water for water supply with other beneficial water uses for surface and ground waters?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ unsatisfactory raw water supply (e.g. excessive pathogens or mineral constituents)?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ delivery of unsafe water to distribution system?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ inadequate protection of intake works or wells, leading to pollution of water supply?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ over pumping of ground water, leading to salinization and ground subsidence?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ excessive algal growth in storage reservoir?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ increase in production of sewage beyond capabilities of community facilities?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ inadequate disposal of sludge from water treatment plants?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances and protect facilities?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ impairments associated with transmission lines and access roads?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ health hazards arising from inadequate design of facilities for receiving, storing, and handling of chlorine and other hazardous chemicals.</li> </ul>			
<ul style="list-style-type: none"> <li>▪ health and safety hazards to workers from handling and management of chlorine used for disinfection, other contaminants, and biological and physical hazards during project construction and operation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ dislocation or involuntary resettlement of people?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ disproportionate impacts on the poor, women and</li> </ul>			

Screening Questions	Yes	No	Remarks
children, Indigenous Peoples or other vulnerable groups?			
▪ noise and dust from construction activities?			
▪ increased road traffic due to interference of construction activities?			
▪ continuing soil erosion/silt runoff from construction operations?			
▪ delivery of unsafe water due to poor O&M treatment processes (especially mud accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
▪ delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals?			
▪ accidental leakage of chlorine gas?			
▪ excessive abstraction of water affecting downstream water users?			
▪ competing uses of water?			
▪ increased sewage flow due to increased water supply			
▪ increased volume of sillage (wastewater from cooking and washing) and sludge from wastewater treatment plant			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
<b>Part IV: Wastewater Treatment</b>			
<b>A. Project Siting</b>			
Is the project are			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			

Screening Questions	Yes	No	Remarks
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ interference with other utilities and blocking of access to buildings; nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?			
▪ overflows and flooding of neighboring properties with raw sewage?			
▪ environmental pollution due to inadequate sludge disposal or industrial waste discharges illegally disposed in sewers?			
▪ noise and vibration due to blasting and other civil works?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?			
▪ discharge of hazardous materials into sewers, resulting in damage to sewer system and danger to workers?			
▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances, and protect facilities?			
▪ road blocking and temporary flooding due to land excavation during the rainy season?			
▪ noise and dust from construction activities?			

Screening Questions	Yes	No	Remarks
▪ traffic disturbances due to construction material transport and wastes?			
▪ temporary silt runoff due to construction?			
▪ hazards to public health due to overflow flooding, and groundwater pollution due to failure of sewerage system?			
▪ deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water?			
▪ contamination of surface and ground waters due to sludge disposal on land?			
▪ health and safety hazards to workers from toxic gases and hazardous materials which may be contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?			
▪ large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?			
▪ social conflicts between construction workers from other areas and community workers?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
<b>Part V: Other Project Types</b>			
<b>A. Project Siting</b> Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Legally protected Area (core zone or buffer zone)			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Special area for protecting biodiversity			
<b>C. Potential Environmental Impacts</b> Will the Project cause...			
▪ impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural			



Screening Questions	Yes	No	Remarks
resources?			
▪ disturbance to precious ecology (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased air pollution due to project construction and operation?			
▪ noise and vibration due to project construction or operation?			
▪ involuntary resettlement of people? (physical displacement and/or economic displacement)			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?			
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
▪ generation of solid waste and/or hazardous waste?			

Screening Questions	Yes	No	Remarks
▪ use of chemicals?			
▪ generation of wastewater during construction or operation?			
<b>Part II: Buildings</b>			
<b>A. Project Siting</b> Is the project area adjacent to or within any of the following areas:			
▪ Underground utilities			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
▪ Bay			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ Encroachment on historical/cultural areas?			
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?			
▪ Dislocation or involuntary resettlement of people?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?			
▪ Increased noise and air pollution resulting from increased traffic volume?			
▪ Occupational and community health and safety risks?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			

Screening Questions	Yes	No	Remarks
▪ Generation of dust in sensitive areas during construction?			
▪ Requirements for disposal of fill, excavation, and/or spoil materials?			
▪ Noise and vibration due to blasting and other civil works?			
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?			
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?			
▪ Risks to community health and safety caused by management and disposal of waste?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

## APPENDIX 2: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

*Note: This was the chapter prepared for the Tranche 1 subprojects which can be modified for subsequent Tranches.*

### I. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

#### A. Policy Framework

1. **Regional Perspective.** The Greater Mekong Subregion (GMS) Cooperation Program envisions a subregion that is more integrated, prosperous and equitable. This vision is pursued through a “3C” strategy of enhancing connectivity, improving competitiveness, and promoting a greater sense of community. To implement this strategy, the GMS countries have adopted an economic corridor approach whereby transport corridors will be expanded, trade and investment promoted, and economic growth stimulated. The PRC and Viet Nam are active participants in developing the GMS North-South Economic Corridor.

2. As one of the two PRC provinces directly involved in the GMS cooperation, Guangxi has formulated a strategy and action plan for participation in the GMS program<sup>2</sup>. The medium term plan aims to (i) further enhance connectivity with the rest of the GMS; (ii) accelerate development of economic corridors with a special focus on developing border economic zones in partnership with Viet Nam; and (iii) further improve trade and investment facilitation to promote cross-border economic activities.

3. The proposed project aims to support participation of Guangxi in regional cooperation and integration, especially the GMS program, with a focus on economic corridor development. The proposed project will enhance cooperation between the PRC and Viet Nam under the GMS framework, and is expected to have high regional cooperation and integration spill-overs, benefitting also Viet Nam’s northern border provinces including Quang Ninh, Lang Son and Cao Bang.

4. **PRC Perspective.** Regional cooperation and integration is an important means for the PRC to achieve greater integration with the global economic system. This has been highlighted as a priority in the 13<sup>th</sup> Five Year Plan (FYP) for 2016-2020<sup>3</sup>, which committed the PRC to further opening up and strengthening international and regional economic cooperation, with a special focus on its neighboring countries.

5. In 2015, the PRC announced plans to develop the so-called Silk Road Economic Belt and 21<sup>st</sup> Century Maritime Silk Road (the Belt and Road Initiative)<sup>4</sup>. This strategic initiative aims to promote connectivity and strengthen economic partnerships between and among Asian, European and African continents in the spirit of open regionalism. It cites five priorities for cooperation: (i) fostering economic and development policy coordination; (ii) strengthening connectivity by developing energy, transport and telecommunication infrastructure and

<sup>2</sup> Government of the Guangxi Zhuang Autonomous Region. 2014. Strategy and action plan for participation in the Greater Mekong Subregion Economic Cooperation Program, 2014-2022. Nanning.

<sup>3</sup> Government of the People’s Republic of China. 2016. The 13<sup>th</sup> Five Year Plan for National Economic and Social Development.

<sup>4</sup> National Development Reform Commission, Ministry of Foreign Affairs, and Ministry of Commerce. 2015. Vision and actions on jointly building the Silk Road Economic Belt and the 21<sup>st</sup> Century Maritime Silk Road. Issued on 28 March 2015 with authorization from the State Council of the PRC.

harmonizing standards; (iii) promoting trade and investment through customs, sanitary and phyto-sanitary cooperation, implementation of World Trade Organization's *Trade Facilitation Agreement*, and development of economic zones and industry clusters; (iv) deepening financial cooperation and integration; and (v) promoting people-to-people exchanges. To implement the Belt and Road Initiative, Guangxi has developed its own action plan with special emphasis on strengthening cooperation with the members of the ASEAN, particularly the GMS countries<sup>5</sup>.

6. **ADB Perspective.** Regional cooperation and integration is an integral part of ADB operations in the PRC. It is one of the five strategic priorities of the Country Partnership Strategy 2016-2020 for the PRC<sup>6</sup>.

## B. Legal and Administrative Framework

7. The administrative framework for environmental impact assessment (EIA) in the PRC consists of national, provincial, and local (city and county) environmental protection authorities. The national authority is the Ministry of Environmental Protection (MEP), which promulgates laws, regulations, administrative decrees, technical guidelines, and environmental quality and emission standards on EIA and pollution prevention and control. At the provincial level are the Environmental Protection Departments (EPD), acting as the gatekeeper for EIA and pollution prevention and control in the province. They are often delegated the authority by MEP to approve EIA reports for development planning and construction projects in the provinces, except those with national interest and those that cross provincial boundaries that would need MEP approval. The local (city or county level) Environmental Protection Bureaus (EPB) enforce environmental laws and conduct environmental monitoring within city or county limits. Local EPBs could be delegated the authority to approve EIA reports by the provincial EPDs.

8. EPDs and EPBs are supported by Environmental Monitoring Stations (EMS), which are subsidiaries of EPDs or EPBs and are qualified entities to carry out environmental monitoring<sup>7</sup>. The PRC has a qualification and registration system for EIA and only qualified and registered institutes and individuals are allowed to undertake EIA. Under the recently issued *Management Measures for the Qualification of Environmental Impact Assessment for Construction Projects* (MEP decree [2015] No. 36), qualified institutes for conducting EIAs for construction projects in the PRC can no longer be a subsidiary of an environmental authority responsible for approving domestic environmental impact reports or tables as of 1 November 2015.

## C. Laws, Regulations, Guidelines and Standards

9. **PRC** **Requirements.**

<sup>5</sup> Government of the Guangxi Zhuang Autonomous Region. 2016. Recommendations on implementing the initiative of building Silk Road Economic Belt and 21<sup>st</sup> Century Maritime Silk Road. Nanning.

<sup>6</sup> Asian Development Bank. 2016. Transforming partnership: People's Republic of China and Asian Development Bank, 2016-2020. Manila.

<sup>7</sup> In this report, "environmental monitoring" refers to the activity of collecting environmental data either through *in-situ* measurements or through sampling followed by laboratory testing of samples.

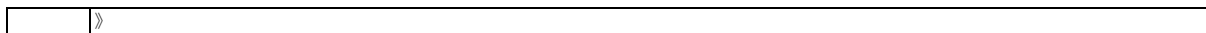
Table 1 lists the PRC's environmental laws, regulations, decrees, guidelines, and standards relevant to this project. These comprehensive requirements cover environmental protection and impact assessment; pollution prevention and control of air, noise, water, ecology and solid waste; and are supported by technical guidelines and standards for assessing atmospheric, noise, water, and ecological impacts.

**Table 1: Relevant PRC Laws, Regulations, Decrees, Guidelines, and Standards**

<b>Laws</b>	
1	<i>Water Pollution Prevention and Control Law</i> , 1984 (amended in 2008) 《中华人民共和国水污染防治法》2008 修订
2	<i>Wild Animal Protection Law</i> , 1988 (amended in 2004) 《中华人民共和国野生动物保护法》2004 修订
3	<i>Environmental Protection Law</i> , 1989 (amended in 2014) 《中华人民共和国环境保护法》2014 修订
4	<i>Soil and Water Conservation Law</i> , 1991 (amended in 2010) 《中华人民共和国水土保持法》2010 修订
5	<i>Labor Law</i> , 1994 《中华人民共和国劳动法》1994
6	<i>Solid Waste Pollution Prevention and Control Law</i> , 1995 (amended in 2004) 《中华人民共和国固体废物污染防治法》2004 修订
7	<i>Environmental Noise Pollution Prevention and Control Law</i> , 1996 《中华人民共和国环境噪声污染防治法》1996
8	<i>Atmospheric Pollution Prevention and Control Law</i> , 2000 (amended in 2015) 《中华人民共和国大气污染防治法》2015 修订
9	<i>Occupational Disease Prevention and Control Law</i> , 2001 《中华人民共和国职业病防治法》2001
10	<i>Water Law</i> , 2002 《中华人民共和国水法》2002
11	<i>Environmental Impact Assessment Law</i> , 2002 《中华人民共和国环境影响评价法》2002
12	<i>Cultural Relics Protection Law</i> , 2002 《中华人民共和国文物保护法》2002
<b>Regulations</b>	
13	<i>Natural Reserve Ordinance</i> , 1994 《中华人民共和国自然保护区条例》1994
14	<i>Wild Plant Protection Ordinance</i> 1996 《中华人民共和国野生植物保护条例》1996
15	<i>Construction Project Environmental Protection Management Ordinance</i> , 1998 《中华人民共和国建设项目环境保护管理条例》1998
16	<i>Cultural Relics Protection Law Implementation Ordinance</i> , 2003 《中华人民共和国文物保护法实施条例》2003
17	<i>Plan Environmental Impact Assessment Ordinance</i> , 2009 《中华人民共和国规划环境影响评价条例》2009
<b>Decrees and Announcements</b>	
18	<i>Circular on Strengthening the Management of Environmental Impact Assessment for Construction Projects Financed by International Financial Organizations</i> , (MEP Announcement [1993] No.324) 《关于加强由国际金融机构提供资金的建设项目的环境影响评估管理的通知》环发[1993]324 号
19	<i>Management Measures for Inspection and Acceptance of Environmental Protection at Construction Project Completion</i> (MEP Decree [2001] No. 13 and 2010 Amendment) 《建设项目竣工环境保护验收管理办法》环令[2001]13 号; 2010 修改
20	<i>Specifications on the Management of Urban Construction and Demolition Waste</i> (Ministry of Construction Decree [2005] No. 139) 《城市建筑垃圾管理规定》建设部令[2005]139 号
21	<i>Management Procedures for the Supervision, Inspection and Environmental Acceptance of Construction Projects under the "Three Simultaneities"</i> (on trial) (MEP Announcement [2009] No. 150) 《环境保护部建设项目“三同时”监督检查和竣工环保验收管理规程（试行）的通知》环发[2009]150 号
22	<i>Management Measures for Operation of the Environmental Complaint Hotline</i> (MEP Decree [2010] No. 15) 《环保举报热线工作管理办法》环令[2010]15 号
23	<i>Opinion from the State Council on Important Tasks for Strengthening Environmental Protection</i> (State Council Announcement [2011] No. 35 《国务院关于加强环境保护重点工作的意见》国发[2011]35 号
24	<i>Measures for Environmental Supervision</i> (MEP Decree [2012] No. 21) 《环境监察办法》环境保护部令[2012]21 号
25	<i>Requirement for Preparation of Environmental Impact Report Summary</i> (MEP Announcement [2012] No. 51) 《建设项目环境影响报告书简本编制要求》环告[2012]51 号
26	<i>Announcement on Stepping Up the Strengthening of Environmental Impact Assessment Management for Prevention of Environmental Risk</i> (MEP Announcement [2012] No. 77) 《关于进一步加强环境影响评价管理防范环境风险的通知》环发[2012]77 号
27	<i>Atmospheric Pollution Prevention and Control Action Plan</i> (State Council Announcement [2013] No. 37) 《大气污染防治行动计划》国发〔2013〕37 号
28	<i>Policy on Integrated Techniques for Air Pollution Prevention and Control of Small Particulates</i> (MEP Announcement [2013] No. 59) 《环境空气细颗粒物污染综合防治技术政策》环发[2013]59 号
29	<i>Guideline on Government Information Disclosure of Construction Project Environmental Impact Assessment (on trial)</i> (MEP Announcement [2013] No. 103) 《建设项目环境影响评价政府信息公开指南》环办[2013]103 号
30	<i>Directory for the Management of Construction Project Environmental Impact Assessment Categorization</i> (MEP Decree [2015] No. 33) 《建设项目环境影响评价分类管理名录》环令[2015]33 号
31	<i>Measures for Public Participation in Environmental Protection</i> (MEP Decree [2015] No. 35) 《环境保护公众参与办法》环令[2015]35 号
32	<i>Management Measures for Environmental Impact Post Assessment of Construction Projects (on trial)</i> (MEP decree [2015] No. 37) 《建设项目环境影响后评价管理办法（试行）》环令[2015]37 号

<b>Guidelines</b>	
33	HJ 2.1-2011 <i>Technical Guidelines for Environmental Impact Assessment – General Program</i> 《环境影响评价技术导则 总纲》
34	HJ 2.2-2008 <i>Guidelines for Environmental Impact Assessment – Atmospheric Environment</i> 《环境影响评价技术导则 大气环境》
35	HJ/T 2.3-93 <i>Technical Guidelines for Environmental Impact Assessment – Surface Water Environment</i> 《环境影响评价技术导则 地面水环境》
36	HJ 2.4-2009 <i>Technical Guidelines for Noise Impact Assessment</i> 《环境影响评价技术导则 声环境》
37	HJ 19-2011 <i>Technical Guidelines for Environmental Impact Assessment – Ecological Impact</i> 《环境影响评价技术导则 生态影响》
38	HJ 130-2014 <i>Technical Guidelines for Plan Environmental Impact Assessment - General Principles</i> 《规划环境影响评价技术导则 总纲》
39	HJ 192-2015 <i>Technical Criterion for Ecosystem Status Evaluation</i> 《生态环境状况评价技术规范》
40	HJ/T 393-2007 <i>Technical Specifications for Urban Fugitive Dust Pollution Prevention and Control</i> 《防治城市扬尘污染技术规范》
41	HJ 610-2011 <i>Technical Guidelines for Environmental Impact Assessment – Groundwater Environment</i> 《环境影响评价技术导则 地下水环境》
42	HJ 616-2011 <i>Guidelines for Technical Review of Environmental Impact Assessment on Construction Projects</i> 《建设项目环境影响技术评估导则》
43	HJ 623-2011 <i>Standard for the Assessment of Regional Biodiversity</i> 《区域生物多样性评价标准》
44	HJ 630-2011 <i>Technical Guideline on Environmental Monitoring Quality Management</i> 《环境监测质量管理技术导则》
45	HJ 663-2013 <i>Technical Regulation for Ambient Air Quality Assessment (on trial)</i> 《环境空气质量评价技术规范（试行）》
46	HJ 710.1-2014 <i>Technical Guidelines on Biodiversity Monitoring - Terrestrial Vascular Plants</i> 《生物多样性观测技术导则-陆生维管植物》
47	HJ 710.2-2014 <i>Technical Guidelines on Biodiversity Monitoring - Lichens and Bryophytes</i> 《生物多样性观测技术导则-地衣和苔藓》
48	HJ 710.3-2014 <i>Technical Guidelines on Biodiversity Monitoring - Terrestrial Mammals</i> 《生物多样性观测技术导则-陆生哺乳动物》
49	HJ 710.4-2014 <i>Technical Guidelines on Biodiversity Monitoring - Birds</i> 《生物多样性观测技术导则-鸟类》
50	HJ 710.5-2014 <i>Technical Guidelines on Biodiversity Monitoring - Reptiles</i> 《生物多样性观测技术导则-爬行动物》
51	HJ 710.6-2014 <i>Technical Guidelines on Biodiversity Monitoring - Amphibians</i> 《生物多样性观测技术导则-两栖动物》
52	HJ 710.7-2014 <i>Technical Guidelines on Biodiversity Monitoring - Inland Water Fish</i> 《生物多样性观测技术导则-内陆水域鱼类》
53	HJ 710.8-2014 <i>Technical Guidelines on Biodiversity Monitoring - Freshwater Benthic Macroinvertebrates</i> 《生物多样性观测技术导则-淡水底栖大型无脊椎动物》
54	HJ 710.9-2014 <i>Technical Guidelines on Biodiversity Monitoring - Butterflies</i> 《生物多样性观测技术导则-蝴蝶》
55	JG/J 146-2004 <i>Environmental and Hygiene Standards for Construction Sites</i> 《建筑施工现场环境与卫生标准》
56	<i>Technical Guidelines for Environmental Impact Assessment - Public Participation (public comment version)</i> , (January 2011) 《环境影响评价技术导则 公众参与》(征求意见稿)2011
<b>Standards</b>	
57	GB 3095-2012 <i>Ambient Air Quality Standards</i> 《环境空气质量标准》
58	GB 3096-2008 <i>Environmental Quality Standard for Noise</i> 《声环境质量标准》
59	GB 3838-2002 <i>Environmental Quality Standards for Surface Water</i> 《地表水环境质量标准》
60	GB 8978-1996 <i>Integrated Wastewater Discharge Standard</i> 《污水综合排放标准》
61	GB 10070-88 <i>Standard of Environmental Vibration in Urban Area</i> 《城市区域环境振动标准》
62	GB 12523-2011 <i>Emission Standard of Environmental Noise for Boundary of Construction Site</i> 《建筑施工场界环境噪声排放标准》
63	GB/T 14529-93 <i>Principle for Categories and Grades of Nature Reserves</i> 《自然保护区类型与级别划分原则》
64	GB 14554-93 <i>Emission Standards for Odor Pollutants</i> 《恶臭污染物排放标准》
65	GB/T 14848-93 <i>Quality Standard for Ground Water</i> 《地下水质量标准》
66	GB/T 15190-2014 <i>Technical Specifications for Regionalizing Environmental Noise Function</i> 《声环境功能区划分技术规范》
67	GB 15618-1995 <i>Environmental Quality Standard for Soils</i> 《土壤环境质量标准》
68	GB 16297-1996 <i>Air Pollutant Integrated Emission Standards</i> 《大气污染物综合排放标准》
69	GB 22337-2008 <i>Emission Standard for Community Noise</i> 《社会生活环境噪声排放标准》
70	GB 50118-2010 <i>Design Specifications for Noise Insulation of Buildings for Civil Use</i> 《民用建筑隔声设计规范》





10. **Environmental Protection.** The most far-reaching law on pollution prevention and control is the *Environmental Protection Law* (EPL) (1989, amended in 2014) (item #3 in Table 1). When promulgated in 1989, it set out key principles for the nation's pollution control system, including the policy known as the "Three Simultaneities,"<sup>8</sup> the application of pollution levy, and requirements for EIA. The EPL was amended in 2014 and the amended EPL took effect on 1 January 2015. The implementation of "Three Simultaneities" was further strengthened by the decree on its management procedures (items #19 and #21) and the *Construction Project Environmental Protection Management Ordinance* (item #15).

11. Public Participation and Environmental Information Disclosure provisions are among the most significant changes introduced in the amended EPL, further supported by the decrees on the preparation of EIA summaries for the purpose of public disclosure (item #25), information disclosure on construction project EIAs by government (item #29), method for public participation in environmental protection (item #31), and technical guidelines (for comment) for public participation in EIAs (item #56).

12. The amended EPL further defines enforcement and supervision responsibilities of all levels of environmental protection authorities, imposes stricter obligations and more severe penalties on enterprises and construction units regarding pollution prevention and control, and allows for environmental public interest litigation including through nongovernment organizations. The procedures and requirements for the technical review of EIA reports by authorities have been specified (item #43). Environmental inspection and enforcement on design, installation, and operation of project-specific environmental protection and control measures are regulated under the "Three Simultaneities" (items #3, #15, #19, #21, and #24).

13. For grievance redress, a hotline number 12369 has been established at each level of environmental protection authority throughout the nation since March 2011 for receiving and resolving environmental complaints in accordance with the *Management Measures for Operation of the Environmental Complaint Hotline* (MEP Decree [2010] No. 15) (item #22).

14. The EPL also provides protection for community health, with protection of occupational health and safety provided by the *Labor Law* (1994) (item #5), the *Occupational Disease Prevention and Control Law* (2001) (item #9), and environmental and hygiene standards for construction sites (item #55).

15. **Environmental Impact Assessment.** EIA is governed by the *Environmental Impact Assessment Law* (2002) (item #11), covering EIAs for (i) plans (such as new development areas and new industrial parks) and strategic studies which could also be deemed as strategic environmental assessments (SEA), and (ii) construction projects. This was followed by the promulgation of two regulations: the *Construction Project Environmental Protection Management Ordinance* (1998) (item #15) and the *Plan Environmental Impact Assessment Ordinance* (2009) (item #17). Both require early screening and environmental categorization.

16. A recent MEP decree, the *Directory for the Management of Construction Project Environmental Impact Assessment Categorization* (MEP Decree [2015] No. 33) (item #30), classifies EIAs for construction projects into three categories with different reporting

<sup>8</sup> The "Three Simultaneities Policy" requires the design, construction, and operation of pollution control and treatment facilities to occur simultaneously with the project design, construction, and operation.

requirements, based on the “significance” of potential environmental impact due to the project and the environmental sensitivity of the project site as described in this directory. An EIR is required for construction projects with potential significant environmental impacts. An EIT is required for construction projects with less significant environmental impacts. An EIRF is required for construction projects with the least significant environmental impacts. Environmentally sensitive areas, as defined in the Decree, include three categories: (i) nature reserves and protected areas, scenic areas, world cultural and natural heritage sites, drinking water source protection zones; (ii) basic farmland and grassland, forest parks, geological parks, important wetland, natural woodland, critical habitats for endangered plant and animal species, important aquatic spawning/nursery/ wintering/migration grounds, regions suffering from water resource shortage, serious soil erosion areas, desertification protection areas, eutrophic water bodies; and (iii) inhabited areas with major residential, health care, scientific research, and administration functions, cultural heritage protection sites, and protection areas with historical, cultural, scientific, and ethnic values.

**17. Follow-Up Actions on Environmental Impact Assessment.** In 2015, MEP issued a decree, *Management Measures for Environmental Impact Post Assessment of Construction Projects* (MEP decree [2015] No. 37) (item #32) to have, on a trial basis and effective 1 January 2016, follow-up actions between 3 to 5 years after commencement of project operation for large infrastructure and industrial projects or projects located in environmentally sensitive areas. Such actions would include environmental monitoring and impact assessment to verify the effectiveness of environmental protection measures and to undertake any corrective actions that might be needed. The decree also specifies that the institute that does the original impact assessment for the project cannot undertake environmental impact post assessment for the same project.

**18. Guidelines and Standards.** MEP has issued a series of technical guidelines for preparing EIAs. These include impact assessment guidelines on general EIA program and principles (items #33 and #38), atmospheric environment (item #34) and ambient air quality (item #46), noise (item #36), surface water (item #35), ground water (item #41), ecology (items #37 and #39) and regional biodiversity (item #43), biodiversity monitoring of various biota (items #46 to #54), quality management on environmental monitoring (item #44), and public participation (item #56). Standards issued by MEP generally consist of environmental quality (ambient) standards (applicable to the receiving end) and emission standards (applicable to the pollution source). The former includes standards for ambient air quality (item #57), noise (item #58) and vibration (item #61), surface water (item #59), groundwater (item #65), soil (item #67), etc. The latter includes standards for integrated wastewater discharge (item #60), construction noise (item #62) and community noise (item #69), odor (#64) and air pollutants (#68), etc.

**19. ADB Environmental Safeguard Requirements.** The proposed project is classified as category B for environment for tranche 1 subprojects as it is considered that the tranche 1 subprojects are unlikely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. This project therefore requires the preparation of an IEE report for tranche 1 which includes an EMP. ADB’s SPS 2009 requires a number of considerations that are over and above the domestic EIR or EIT requirements. These include, among others, (i) project risks and respective mitigation measures and project assurances; (ii) project-level GRM; (iii) definition of the project area of influence; (iv) consideration of physical cultural resources; (v) climate change mitigation and adaptation; (vi) occupational and community health and safety requirements; (vii) economic displacement that is not part of land acquisition; (viii) consideration of biodiversity conservation and natural resources management requirements; (ix) provision of

justification if local environmental quality standards are used; (x) meaningful consultation and participation; and (xi) implementation schedule and (measurable) performance indicators in the EMP. An environmental assessment and review framework (EARF) has been prepared to guide the EA in conducting rapid environmental assessment for categorization and in preparation of EIA or IEE for tranches 2 and 3.

20. **Relevant International Agreements.** The PRC is a signatory to a number of international agreements relevant to environment protection. Those relevant to the project, along with the dates of signing by the PRC, are listed in Table 2.

**Table 2: International Agreements with the PRC as a Signatory**

No.	Name of Agreement	PRC Signing Date	Agreement Objective
1	<i>Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat</i>	1975.12.21	To stem the progressive encroachment on and loss of wetlands now and in the future, recognizing the wetlands' ecological functions and their economic, cultural, scientific, and recreational values
2	<i>Montreal Protocol on Substances That Deplete the Ozone Layer</i>	1989.01.01	To protect the ozone layer by controlling emissions of substances that deplete it
3	<i>Convention on Biological Diversity</i>	1993.12.29	To develop national strategies for the conservation and sustainable use of biological diversity
4	<i>United Nations Framework Convention on Climate Change</i>	1994.03.21	To achieve stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent dangerous anthropogenic interference with the climate system
5	<i>United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification</i>	1996.12.26	To combat desertification and mitigate the effects of drought through national action programs that incorporate long-term strategies supported by international cooperation and partnership arrangements
6	<i>Kyoto Protocol to the United Nations Framework Convention on Climate Change</i>	2005.02.23	To further reduce greenhouse gas emissions by enhancing the national programs of developed countries aimed at this goal and by establishing percentage reduction targets for the developed countries

#### D. Evaluation Standards

21. In the PRC, ambient conditions of air, noise, and water quality in the project area determine the appropriate category of emissions and effluent standards for the construction and operational phases of built infrastructure. The World Bank Group (WBG) Environmental Health and Safety (EHS) guidelines<sup>9</sup> (see below) are based on international best practice construction and operational procedures. Both the PRC standards and EHS guidelines are used in the assessments.

22. **Air Quality.** The PRC ranks air quality into two classes according to its *Ambient Air Quality Standard* (GB 3095-2012). Class I standard applies to nature reserves, scenic areas, and regions requiring special protection. Class II standard applies to residential areas, mixed residential/commercial areas, cultural areas, industrial zones, and rural areas. The ambient air quality in the assessment area of this project has been assigned to meet GB 3095-2012 Class II standards. The WBG adopted the World Health Organization (WHO) standards for its EHS standards for air quality.

<sup>9</sup> World Bank Group. 2007. Environmental, health and safety guidelines-General EHS guidelines. Washington, DC

23. On 10 September 2013, the State Council announced the *Atmospheric Pollution Prevention and Control Action Plan* for the PRC (State Council Announcement [2013] No. 37) (see Table 1, item #34). The action plan sets 2017 targets on reducing PM<sub>10</sub> emissions in prefecture level cities by more than 10%; PM<sub>2.5</sub> emissions by approximately 25%, 20% and 15% in Beijing-Tianjin-Hebei region, Yangtze River Delta, and Pearl River Delta respectively; and controlling annual average PM<sub>2.5</sub> levels in Beijing at around 60 µg/m<sup>3</sup>. Among the 35 actions identified and described in the plan, the followings are relevant to this project:

- (i) Strengthen control of aerial sources of pollution including controlling dust pollution during construction;
- (ii) Strictly implement total emission pollution control on SO<sub>2</sub>, NO<sub>x</sub>, dust, and volatile organics as a pre-requisite in approving construction project EIRs;
- (iii) Optimize spatial pattern in urban and new district planning to facilitate better air pollutant dispersion;
- (iv) Strengthen laws, regulations and standards on controlling air pollution;
- (v) Strengthen capacities in environmental management and supervision system;
- (vi) Increase environmental regulatory enforcement;
- (vii) Implement environmental information disclosure;
- (viii) Strictly enforce accountability;
- (ix) Establish monitoring warning system;
- (x) Develop contingency plan; and
- (xi) Adopt timely contingency measures for public health protection during serious air pollution events.

24. The WHO established air quality guideline (AQG) standards for various air quality parameters for the protection of public health. Yet recognizing that progressive actions are needed to achieve these standards and the financial and technological limitations of some countries, cities or localities especially in developing countries, the WHO also established interim targets as intermediate milestones towards achieving the AQG.

25. Table 3 compares PRC's GB 3095–2012 *Ambient Air Quality Standards* and the World Bank Group's EHS standard which has adopted the WHO AQG. The longer averaging period such as 1 year is more applicable to assessing impacts from multiple as well as regional sources; while shorter averaging periods such as 24 hours and 1 hour are more applicable to assessing short-term impacts from project-related activities, such as from peak hour traffic or daily or peak construction activities.

**Table 3: Comparison of PRC and WBG Ambient Air Quality Standards**

Air Quality Parameter	Averaging Period	PRC GB 3095-2012 (µg/m <sup>3</sup> )		WHO/World Bank Group EHS <sup>10</sup> (µg/m <sup>3</sup> )	
		Class I	Class II	Interim Targets	AQG
SO <sub>2</sub>	1-year	20	60	n/a	n/a
	24-hour	50	150	50 - 125	20
	1-hour	150	500	n/a	n/a
TSP	1-year	80	200	n/a	n/a
	24-hour	120	300	n/a	n/a

<sup>10</sup> World Bank Group 2007, *ibid.*

Air Quality Parameter	Averaging Period	PRC GB 3095-2012 ( $\mu\text{g}/\text{m}^3$ )		WHO/World Bank Group EHS <sup>10</sup> ( $\mu\text{g}/\text{m}^3$ )	
		Class I	Class II	Interim Targets	AQG
PM <sub>10</sub>	1-year	40	70	30 - 70	20
	24-hour	50	150	75 - 150	50
PM <sub>2.5</sub>	1-year	15	35	15 - 35	10
	24-hr	35	75	37.5 - 75	25
NO <sub>2</sub>	1-year	40	40	n/a	40
	24-hour	80	80	n/a	n/a
	1-hour	200	200	n/a	200
CO	24-hour	4,000	4,000	n/a	n/a
	1-hour	10,000	10,000	n/a	n/a

Note: n/a = not available

26. The following observations are made comparing PRC and WBG ambient air quality standards as shown in Table 3, showing that WBG interim targets are comparable to PRC's GB 3095–2012 Class II standards:

- (i) 24-hr SO<sub>2</sub>: upper limit of EHS interim target (125  $\mu\text{g}/\text{m}^3$ ) is more stringent than GB Class II standard (150  $\mu\text{g}/\text{m}^3$ );
- (ii) 24-hour PM<sub>10</sub>: the upper limit of the EHS interim target (125  $\mu\text{g}/\text{m}^3$ ) is the same as GB Class II standard;
- (iii) 24-hr PM<sub>2.5</sub>: the upper limit of the EHS interim target (75  $\mu\text{g}/\text{m}^3$ ) is the same as GB Class II standard; and
- (iv) 24-hour NO<sub>2</sub>: the EHS AQG (200  $\mu\text{g}/\text{m}^3$ ) is the same as GB Class II standard.

27. Emission standards of fugitive particulate matter (such as dust) from construction sites are regulated under the PRC's *Air Pollutant Integrated Emission Standard* (GB 16297–1996). For particulate matter, the maximum allowable emission concentration is 120  $\text{mg}/\text{m}^3$  and the concentration limit at the boundary of construction sites is  $\leq 1.0 \text{ mg}/\text{m}^3$ , with no specification on the particulate matter's particle diameter.

28. **Noise.** GB 3096–2008 categorizes five functional areas based on their tolerance to noise pollution: from Category 0 to Category 4. Category 0 is for areas with convalescent facilities that are the least tolerant to noisy environment and therefore has the most stringent day and night time noise standards. Category 1 is for areas predominated by residential areas, hospitals and clinics, educational institutions, and research centers. Category 2 is for areas with mixed residential and commercial functions. Category 3 is for areas with industrial production and storage and logistics functions. Category 4 is for regions adjacent to traffic noise sources such as major roads and railways, and is subdivided into 4a and 4b with the former applicable to major road (road class II and above) and marine traffic noise, and the latter applicable to rail noise.

29. Standards for various functional area categories are compared with the WBG's EHS guidelines in Table 4, showing that the EHS guidelines have lower noise limits for residential, commercial, and industrial mixed areas but higher noise limits for industrial areas. The EHS guidelines do not have separate noise limits for major roads but apply the same noise limits based on whether the areas are for residential or industrial use.

**Table 4: Environmental Quality Standards for Noise [ $L_{Aeq}$ : dB(A)]**

Noise Functional Area Category	Applicable Area	GB 3096-2008 Standards		WBG EHS <sup>11</sup> Standards	
		Day 06:00-22:00	Night 22:00-06:00	Day 07:00-22:00	Night 22:00-07:00
0	Areas needing extreme quiet, such as convalescence areas	50	40	55	45
1	Areas mainly for residence, hospitals, cultural and educational institutions, administration offices	55	45		
2	Residential, commercial and industrial mixed areas	60	50		
3	Industrial areas, warehouses and logistic parks	65	55	70	70
4a	Area within 35 m on both sides of trunk road (class II and above)	70	55	55	45

30. The PRC's *Emission Standard of Environmental Noise for Boundary of Construction Site* (GB 12523-2011) regulates construction noise, limiting construction noise levels at the construction site boundary to 70 dB(A) in the day time (0600-2200 hours) and 55 dB(A) at night (2200-0600 hours). The WBG does not have standards for construction noise *per se*, but applies the same noise standards listed in Table 4 above to the receptors during construction activities.

31. **Surface Water Quality.** For water quality assessment, the determining standard is the PRC's *Environmental Quality Standards for Surface Water* (GB 3838-2002) (Table 5). It defines five water quality categories for different environmental functions. Category I is the best, suitable for head waters and national nature reserves. Category II is suitable for drinking water sources in Class I protection areas, habitats for rare aquatic organisms, breeding grounds for fish and crustaceans, and feeding grounds for fish fry. Category III is suitable for drinking water sources in Class II protection areas, wintering grounds for fish and crustaceans, migration routes, water bodies for aquaculture and capture fishery, and swimming activities. Category IV is suitable for general industrial use and non-contact recreational activities. Category V is the worst which is only suitable for agricultural and scenic water uses.

**Table 5: Environmental Quality Standards for Surface Water GB 3838-2002**

Parameter	Water Quality Category				
	I	II	III	IV	V
pH	6 ~ 9	6 ~ 9	6 ~ 9	6 ~ 9	6 ~ 9
Dissolved oxygen (DO) [mg/L]	90% saturation or $\geq 7.5$	$\geq 6$	$\geq 5$	$\geq 3$	$\geq 2$
Permanganate index ( $I_{Mn}$ ) [mg/L]	$\leq 2$	$\leq 4$	$\leq 6$	$\leq 10$	$\leq 15$
Chemical oxygen demand (COD) [mg/L]	$\leq 15$	$\leq 15$	$\leq 20$	$\leq 30$	$\leq 40$
5-day Biochemical oxygen demand (BOD <sub>5</sub> ) [mg/L]	$\leq 3$	$\leq 3$	$\leq 4$	$\leq 6$	$\leq 10$
Ammonia nitrogen (NH <sub>3</sub> -N) [mg/L]	$\leq 0.15$	$\leq 0.5$	$\leq 1.0$	$\leq 1.5$	$\leq 2.0$
Total phosphorus (as P) [mg/L]	$\leq 0.02$	$\leq 0.1$	$\leq 0.2$	$\leq 0.3$	$\leq 0.4$
Lakes & reservoirs	$\leq 0.01$	$\leq 0.025$	$\leq 0.05$	$\leq 0.1$	$\leq 0.2$
Total nitrogen (lakes, reservoirs, as N) [mg/L]	$\leq 0.2$	$\leq 0.5$	$\leq 1.0$	$\leq 1.5$	$\leq 2.0$
Copper (Cu) [mg/L]	$\leq 0.01$	$\leq 1.0$	$\leq 1.0$	$\leq 1.0$	$\leq 1.0$
Zinc (Zn) [mg/L]	$\leq 0.05$	$\leq 1.0$	$\leq 1.0$	$\leq 2.0$	$\leq 2.0$
Fluoride (as F) [mg/L]	$\leq 1.0$	$\leq 1.0$	$\leq 1.0$	$\leq 1.5$	$\leq 1.5$
Selenium (Se) [mg/L]	$\leq 0.01$	$\leq 0.01$	$\leq 0.01$	$\leq 0.02$	$\leq 0.02$
Arsenic (As) [mg/L]	$\leq 0.05$	$\leq 0.05$	$\leq 0.05$	$\leq 0.1$	$\leq 0.1$
Mercury (Hg) [mg/L]	$\leq 0.0005$	$\leq 0.0005$	$\leq 0.0001$	$\leq 0.001$	$\leq 0.001$

<sup>11</sup> World Bank Group 2007, *ibid*.

Parameter	Water Quality Category				
	I	II	III	IV	V
Cadmium (Cd) [mg/L]	≤0.001	≤0.005	≤0.005	≤0.005	≤0.01
Chromium (Cr, hexavalent) [mg/L]	≤0.01	≤0.05	≤0.05	≤0.05	≤0.1
Lead (Pb) [mg/L]	≤0.01	≤0.01	≤0.05	≤0.05	≤0.1
Cyanide (CN) [mg/L]	≤0.005	≤0.05	≤0.2	≤0.2	≤0.2
Volatile phenol [mg/L]	≤0.002	≤0.002	≤0.005	≤0.01	≤0.1
Total petroleum hydrocarbon (TPH) [mg/L]	≤0.05	≤0.05	≤0.05	≤0.5	≤1.0
Anionic surfactant (=LAS) [mg/L]	≤0.2	≤0.2	≤0.2	≤0.3	≤0.3
Sulfide [mg/L]	≤0.05	≤0.1	≤0.2	≤0.5	≤1.0
Fecal coliform bacteria [number/L]	≤200	≤2000	≤10000	≤20000	≤40000

32. Discharge of wastewater from construction sites is regulated under the PRC's *Integrated Wastewater Discharge Standard* (GB 8978–1996) (Table 6). Class 1 standard applies to discharge into Category III water bodies under GB 3838–2002. Class 2 standard applies to discharge into categories IV and V water bodies. Class 3 standard applies to discharge into municipal sewers going to municipal wastewater treatment plants (WWTPs) with secondary treatment. No new discharge of wastewater into Categories I and II water bodies is allowed. The WBG does not have ambient water quality standard, and recognizes the use of national and local ambient water quality criteria for EHS purpose.

**Table 6: Standards for Discharging Wastewater from Construction Sites GB 8978–1996**

Parameter		Class 1	Class 2	Class 3
		(for discharging into Category III water body)	(for discharging into Categories IV and V water body)	(for discharging into municipal sewer)
pH	no unit	6 ~ 9	6 ~ 9	6 ~ 9
SS	mg/L	70	150	400
BOD <sub>5</sub>	mg/L	20	30	300
COD	mg/L	100	150	500
TPH	mg/L	5	10	20
Volatile phenol	mg/L	0.5	0.5	2.0
NH <sub>3</sub> -N	mg/L	15	25	---
PO <sub>4</sub> <sup>2-</sup> (as P)	mg/L	0.5	1.0	---
LAS (= anionic surfactant)	mg/L	5.0	10	20

33. **Soil Quality.** Soil quality in the PRC is divided into three classes according to the *Environmental Quality Standard for Soils* (GB 15618-1995). Class 1 represents the best and Class 3 the worst (Table 7). The WBG does not have EHS standards for soil quality.

**Table 7: Soil Quality Standard GB 15618-1995**

Parameter	Soil pH	Maximum Allowable Concentration (mg/kg dry weight)				
		Class 1	Class 2		Class 3	
		Back ground	<6.5	6.5~7.5	>7.5	>6.5
Cadmium (Cd)		0.20	0.30	0.30	0.60	1.0
Mercury (Hg)		0.15	0.30	0.50	1.0	1.5
Arsenic (As)	Paddy	15	30	25	20	30
	Dry land	15	40	30	25	40
Copper (Cu)	Farm land	35	50	100	100	400
	Orchard	---	150	200	200	400
Lead (Pb)		35	250	300	350	500
Chromium (Cr)	Paddy	90	250	300	350	400
	Dry land	90	150	200	250	300
Zinc (Zn)		100	200	250	300	500
Nickel (Ni)		40	40	50	60	200

Parameter	Maximum Allowable Concentration (mg/kg dry weight)				
	Soil pH	Class 1	Class 2		Class 3
		Back ground	<6.5	6.5~7.5	>7.5
DDT		0.05	0.50		1.0
666 (Lindane)		0.05	0.50		1.0

### E. Assessment Area (Project Area of Influence), Assessment Period, and Evaluation Standards for the Project

34. The assessment area, or the project area of influence, was determined based on potential impact distances of various environmental parameters, the assessment levels assigned by the local environmental authorities for various environmental media, and guidance provided in the PRC's series of Technical Guidelines for EIA (see Table 1, items #33-37). Table 8 shows the assessment areas and the PRC evaluation standards adopted for this project. A comparison of the PRC standards with internationally accepted standards (as defined in the World Bank's Environment Health and Safety Guidelines) was conducted for the IEE. The comparison confirmed that the PRC standards are either internationally accepted or have comparable standard limits with most of the international standards.

**Table 8: Assessment Area and PRC Evaluation Standards Adopted for this Project**

Type of Standard	Environmental Media	Applicable PRC Standard	Project Area of Influence
Environmental quality standard	Ambient air quality	Class II standard in <i>Ambient Air Quality Standard</i> (GB 3095-2012)	Up to 200 m beyond the "footprint" of the permanent and temporary land take areas
	Noise	Functional Area Category 2 standard in <i>Environmental Quality Standard for Noise</i> (GB 3096-2008)	Up to 200 m beyond the "footprint" of the permanent and temporary land take areas
	Surface water quality	Categories III, IV and V standards in <i>Environmental Quality Standards for Surface Water</i> (GB 3838-2002) depending on the water quality category of the water body.	Up to 300 m beyond the "footprint" of the permanent and temporary land take areas
	Ecology	No numerical standard. Assessment based on <i>Technical Guidelines for Environmental Impact Assessment – Ecological Impact</i> (HJ 19-2011)	"Footprint" of the permanent and temporary land take areas
	Physical cultural resources	No numerical standard but controlled under PRC's <i>Cultural Relics Protection Law</i> and <i>Cultural Relics Protection Law Implementation Ordinance</i> .	"Footprint" of the permanent and temporary land take areas
	Occupational health and safety	No numerical standard but controlled under PRC's <i>Labor Law</i> and <i>Environmental and Hygiene Standards for Construction Sites</i> (JG/J 146-2004)	Construction sites within the "footprint" of the permanent and temporary land take areas
	Community health and safety	No numerical standard	Up to 200 m beyond the "footprint" of the permanent and temporary land take areas
Pollutant emission standard	Air pollutant	<i>Air Pollutant Integrated Emission Standard</i> (GB 16297-1996), Class II and fugitive emission standards	Construction sites within the "footprint" of the permanent and temporary land take areas
	Noise	<i>Emission Standard of Environmental Noise for Boundary of Construction Site</i> (GB 12523-2011)	Construction sites within the "footprint" of the permanent and temporary land take areas
	Wastewater	<i>Integrated Wastewater Discharge Standard</i> (GB 8978-1996): (i) Class 1 standard for discharging into Category III water bodies;	Construction sites within the "footprint" of the permanent and temporary land take areas during construction.



Type of Standard	Environmental Media	Applicable PRC Standard	Project Area of Influence
		(ii) Class 2 standard for discharging into Categories IV and V water bodies; (iii) Class 3 standard for discharging into municipal sewers; (iv) No discharge into Categories I and II water bodies.	Effluent discharge standards for the facilities during operation

35. The assessment period covers both construction (ranging from seven to twenty-two months) and operation (first three years after commissioning) stages of the subprojects with civil works proposed for Tranche 1. For subproject 1: Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs, the construction duration for the whole campus would take approximately 24 months, and the construction of the subproject facilities would take approximately 12 months within this period. For subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone, the construction duration would take approximately 22 months. For subproject 6: Expansion of Pingxiang Border Trade Service Center, the construction duration would take approximately seven months.

## F. Justification for the Use of PRC Standards

36. ADB's *Safeguard Policy Statement (2009)* requires projects to apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's *Environmental, Health and Safety Guidelines*. Table 9 compares PRC standards with the World Bank Group's EHS guidelines, and concludes that the application of PRC legislated standards was justified. The justification is based on several observations:

37. The World Bank Group's EHS guidelines endorses the use of internationally recognized standards in case of absence of national legislated standards. In this project, this clause applies to ambient air quality and ambient water quality standards: (i) The General EHS Guidelines on Air Emissions and Ambient Air Quality state that "Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should [apply] national legislated standards, or in their absence, the current WHO Air Quality Guidelines or other internationally recognized sources". The availability of national legislated standards overrides the adoption of other internationally recognized standards; (ii) The General EHS Guidelines on Air Emissions and Ambient Air Quality state that "Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines or other internationally recognized sources". The availability of national legislated standards overrides the adoption of other internationally recognized standards.

38. **Some PRC standards are more stringent than internationally accepted standards.** PRC standards of relevance to the project include ambient CO and NO<sub>2</sub> concentrations (Table 10).

39. **PRC standards are not always comparable to standards suggested in the World Bank Group's EHS Guidelines.** Some ambient air quality standards, including NO<sub>2</sub> and H<sub>2</sub>S, are defined for different time periods (exposures), and are thus not directly comparable (see

Table 9). PRC ambient acoustic quality standards are defined for categories as well as by taking into consideration influencing factors such as road and rail traffic, and are different to the classification of the World Health Organization that does not take influencing factors into consideration. As standard limits are not significantly different (e.g. noise levels), a shift to alternate classifications or time periods, which would require an adaptation of the monitoring procedures by nationally accredited monitoring stations, does not seem to be justified.

40. **Some PRC standards are not defined in the World Bank Group's EHS Guidelines.** Internationally accepted standards for NH<sub>3</sub> and TSP, which are defined in PRC ambient air quality standards, could not be identified. Other parameters which could not be compared to international standards include surface and marine water quality standards.

**Table 9: Comparison of PRC Standards with World Bank Group's EHS Guideline**

Parameter	PRC standards	International standards	Remarks
<b>Ambient Air Quality</b>	<b>GB-3095-2012</b>	<b>WHO Air Quality Guidelines Global Update (2005); USEPA</b>	
TSP	0.12 mg/m <sup>3</sup> (Class I, 24h) 0.30 mg/m <sup>3</sup> (Class II, 24h)	WHO: No standard USEPA: No standard	No comparison possible
CO	4.0 mg/m <sup>3</sup> (Class I, 24h) 4.0 mg/m <sup>3</sup> (Class II, 24h)	WHO: No standard USEPA: 10 mg/m <sup>3</sup>	PRC standard is more stringent than USEPA
NO <sub>2</sub>	0.08 mg/m <sup>3</sup> (Class I, 24h) 0.08 mg/m <sup>3</sup> (Class II, 24h) 0.20 mg/m <sup>3</sup> (Class I, 1h) 0.20 mg/m <sup>3</sup> (Class II, 1h)	WHO: 0.04 mg/m <sup>3</sup> (365d); 0.20 mg/m <sup>3</sup> (1h) USEPA: 0.14 mg/m <sup>3</sup> (24h)	PRC and WHO standards are either not compatible given the different time periods, or the same for same time period. PRC standard is more stringent than USEPA standard
PM <sub>10</sub>	0.05 mg/m <sup>3</sup> (Class I, 24h) 0.15 mg/m <sup>3</sup> (Class II, 24h)	WHO: 0.05 mg/m <sup>3</sup> (24h) USEPA: 0.15 mg/m <sup>3</sup> (24h)	PRC standards are comparable to EPA standard.
<b>Ambient Acoustic Quality Standard</b>	<b>GB-3096-2008</b>	<b>World Health Organization (1999)</b>	
L <sub>Aeq</sub> (dBA)	45/55 (night/day, Category 1) 50/60 (night/day, Category 2) 55/65 (night/day, Category 3) 55/70 (night/day, Category 4a) 60/70 (night/day, Category 4b)	Class I: 45/55 (night/day) Class II: 70/70 (night/day)	WHO Class I: Residential, institutional, educational WHO Class II: Industrial, commercial
<b>Surface Water Quality Standard</b>	<b>GB-3838-2002</b>		No comparable standard identified/suggested in the EHS guideline
COD	15 mg/L (Category II) 20 mg/L (Category III) 30 mg/L (Category IV)		
NH <sub>3</sub> -N	0.5 mg/L (Category II) 1.0 mg/L (Category III) 1.5 mg/L (Category IV)		
TP	0.1 mg/L (Category II) 0.2 mg/L (Category III) 0.3 mg/L (Category IV)		
<b>Sea Water Quality Standard</b>	<b>GB-3097-1997</b>		No comparable standard identified/suggested in the EHS guideline
COD	2 mg/L (Category I)		

Parameter	PRC standards	International standards	Remarks
	3 mg/L (Category II) 4 mg/L (Category III) 5 mg/L (Category IV)		
Inorganic. N	0.2 mg/L (Category I) 0.3 mg/L (Category II) 0.4 mg/L (Category III) 0.5 mg/L (Category IV)		
Active P	0.015 mg/L (Category I) 0.030 mg/L (Category II) 0.030 mg/L (Category III) 0.045 mg/L (Category IV)		
<b>Noise Standards for Industrial Enterprise Boundary</b>	<b>GB 12348-2008</b>	<b>World Health Organization (1999)</b>	<i>WHO Class I: Residential, institutional, educational WHO Class II: Industrial, commercial</i>
L <sub>Aeq</sub> (dBA)	55/45 (day/night, Class I) 60/50 (day/night, Class II) 65/55 (day/night, Class III) 70/55 (day/night, Class IV)	Class I: 45/55 (night/day) Class II: 70/70 (night/day)	
<b>Noise Limits for Construction Sites</b>	<b>GB 12523-1990</b>	<b>USEPA</b>	
L <sub>Aeq</sub> (dBA)	75/55 (Earth works, day/night) 85 (Pile driving, day; banned for night) 70/55 (Structural works, day/night) 65/55 (Exterior and interior finishing works, day/night)	85 (day, 8h exposure)	

### APPENDIX 3: GRIEVANCE REDRESS MECHANISM

*The GRM established under Tranche 1 will be a program GRM, each subproject under subsequent Tranches should include entry points to the GRM.*

1. A Grievance Redress Mechanism (GRM) will be established as part of the EMP to receive and manage any public concerns or issues which may arise due to the subprojects. The GRM comprises: (i) a set of clear procedures developed by GPMO to receive, record, and address any concerns which are raised; (ii) specific contact details for individuals at the GPMO, PIEs and the contractors, and (iii) the local EPBs.
2. All contractors and work staff will be briefed by the GPMO on the GRM. Contractors and workers will be instructed to be courteous to local residents and, in the event they are approached by the general public with an issue, to immediately halt their work and report the issue to the foreman. The foreman will immediately report the issue to the PIEs or GPMO for action.
3. There are multiple entry points to the GRM, including face-to-face meetings, written complaints, hotline number and telephone conversations, anonymous drop-boxes for written comments, and/or e-mail. All concerns received will be treated confidentially and professionally. The identity of individuals will not be circulated among subproject agencies or staff and will only be shared with senior staff, and then only when there is clear justification. In the construction period and the initial operational period covered by loan covenants, GPMO will report on GRM to ADB, including complaints and their resolution in the quarterly project progress reports and annual environmental monitoring reports up to the project completion report.
4. Basic steps for resolving complaints are as follows and illustrated in Figure EMP-1.

Step 1: For environmental problems during the construction and operational stages, the affected person (AP) can register his/her complaint directly with the contractors or with the GPMO complaint center via its hotline. A joint hotline for resettlement and environment issues will be established within GPMO. Complaints related to land acquisition and resettlement issues will be directed to the GPMO and relevant agencies in accordance with the RP. Contractors are required to set up a complaint hotline and designate a person in charge of handling complaints, and advertise the hotline number at the main entrance to each construction site, together with the hotline number of the GPMO complaint center. The contractors are required to maintain and update a Complaint Register to document all complaints. The contractors are also required to respond to the complainant in writing within 7 calendar days on their proposed solution and how it will be implemented. If the problem is resolved and the complainant is satisfied with the solution, this can be recorded by the GPMO complaint center and follow-up should be carried out during a next project site visit by the EEM. The contractors are required to report complaints received, handled, resolved and unresolved to the GPMO complaint center immediately, and to the IAs and GPMO monthly (through progress reporting).

Step 2: If no appropriate solution can be found during step 1, the contractor has the obligation to forward the complaint to the GPMO complaint center, the PIEs and local EPBs. The PIEs and local EPBs shall immediately notify GPMO upon receiving the complaint. For an oral complaint, proper written records shall be made. Once a complaint is registered and put on file, the GPMO complaints center will immediately notify ADB and

others concerned to discuss acceptable solutions. The GPMO complaint center will assess the eligibility of the complaint, identify the solution and provide a clear reply for the complainant within 14 calendar days. The EEM will assist the GPMO complaint center in addressing the complaint, and follow-up with the AP. The GPMO complaint center will also inform the ADB project team and submit all relevant documents. Meanwhile, the GPMO complaint center will convey the complaint/grievance and suggested solution to the contractors, PIEs, and/or facility operator in a timely manner. The contractors during construction and the facility operator during operation will implement the agreed redress solution and report the outcome to the GPMO complaint center within fifteen (15) working days.

Step 3: In case no solution can be identified by the GPMO complaint center, or the complainant is not satisfied with the proposed solution, the GPMO complaint center will organize, within 14 calendar days, a multi-stakeholder hearing (meeting) involving all relevant stakeholders (including the complainant, PIEs, contractors, facility operator, local EPB, and GPMO). The hearing shall identify a solution acceptable to all, and formulate an action plan.

5. The tracking and documenting of grievance resolutions by GPMO will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s); (ii) regular updating of the GRM database by the GPMO environmental focal point; (iii) processes for informing stakeholders about the status of a case; and (iv) procedures to retrieve data for reporting purposes, including the periodic reports to the ADB.

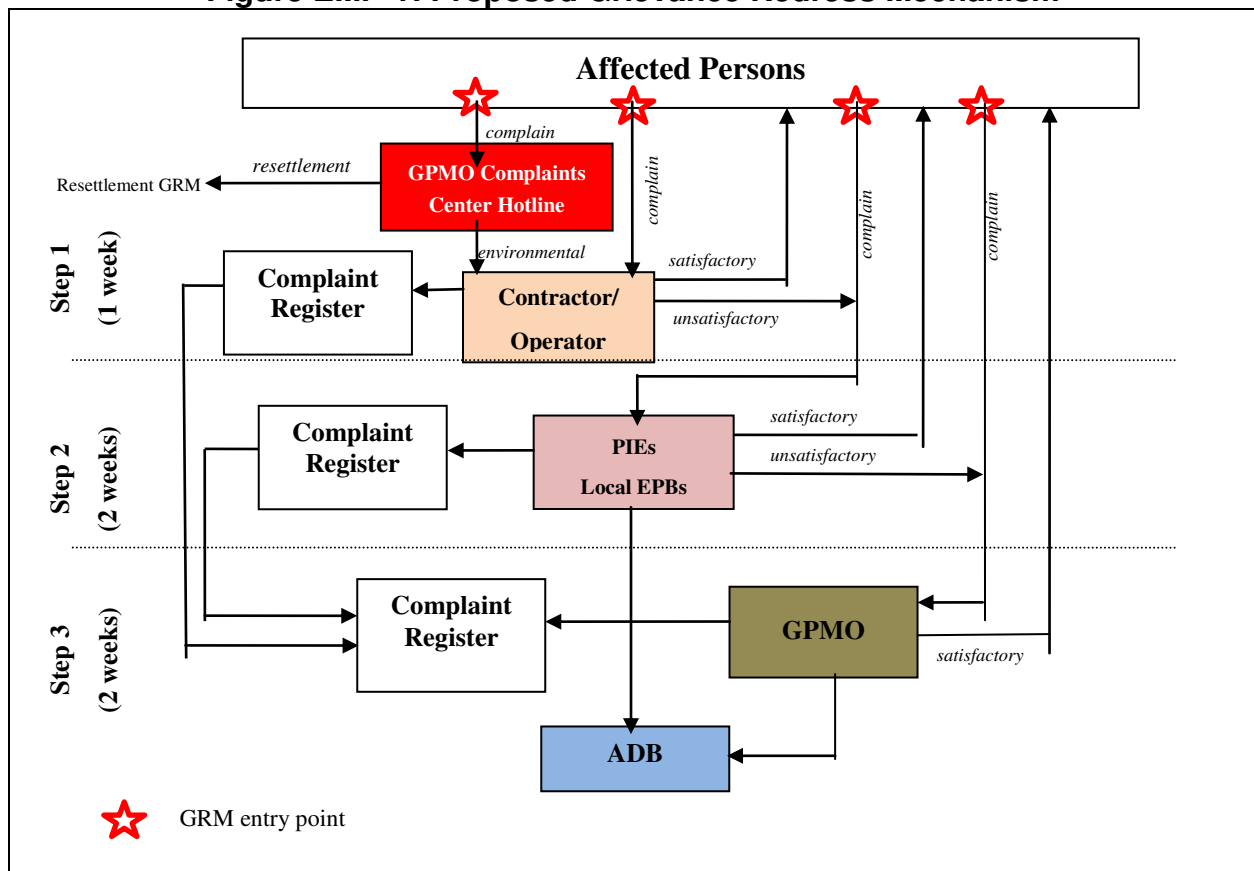
6. At any time, an AP may contact ADB (East Asia Department) directly, including the ADB Resident Mission in the PRC.

7. If the above steps are unsuccessful, persons who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>12</sup>

---

<sup>12</sup> See: <http://compliance.adb.org/>

Figure EMP-1: Proposed Grievance Redress Mechanism



## APPENDIX 4: CAPACITY DEVELOPMENT AND TRAINING

*Note: This is the capacity development and training proposed for Tranche 1, it provides a reference source for preparing a similar program for subsequent tranches*

1. The capacities of GPMO and PIEs to coordinate environmental management will be strengthened through a set of measures:
  - (i) Project Management Consulting (PMC) services funded through the loan will support GPMO with appointment of an international environment consultant (2 months) and a national consultant (10 months) to provide support on environmental management for all subprojects and preparation of Tranche 2.
  - (ii) The appointment of qualified staff within the GPMO and each PIE as environmental focal points in charge of EMP coordination, implementation and site inspections including GRM.
  - (iii) The commissioning of an independent ESE by each PIE to provide independent monitoring and verification of EMP implementation.
  - (iv) The appointment of EEM (an independent consultant) under the PMC service to guide GPMO and PIEs in implementing the EMP and ensuring compliance with ADB's Safeguard Policy Statement (SPS 2009).
  
2. **Training.** GPMO, PIEs and contractors will receive training in EMP implementation, supervision, and reporting, and on the GRM (**Table EMP-7**). Training will be facilitated by the EEM with support of experts under the PMC services, as needed.

**Table EMP-7: Training Program**

<b>Training</b>	<b>Attendees</b>	<b>Contents</b>	<b>Times</b>	<b>Period (days)</b>	<b>No. of persons</b>	<b>Cost (\$/person /day)</b>	<b>Total Cost</b>
EMP adjustment and implementation	GPMO, PIEs, contractors	Development and adjustment of the EMP, roles and responsibilities, monitoring, supervision and reporting procedures, review of experience (after 12 months)	Twice - Once prior to, and once after the first year of subproject implementation	2	20	100	\$8,000
Grievance Redress Mechanism	GPMO, PIEs, contractors, local EPBs	Roles and responsibilities, procedures, review of experience (after 12 months)	Twice - Once prior to, and once after the first year of subproject implementation	1	15	100	\$3,000
Environmental protection	GPMO, PIEs, contractors	Pollution control on construction sites (air, noise, wastewater, solid waste), use of PPE during construction and operation, occupational health and safety	Once (during subproject implementation)	2	15	100	\$3,000
Environmental monitoring	GPMO, PIEs, contractors	Monitoring methods, data collection and processing, reporting systems	Once (at beginning of subproject construction)	1	10	100	\$1,000
<b>Total estimated cost:</b>							<b>\$15,000</b>
<b>Notes:</b> EPB = Environmental Protection Bureau; GPMO = Guangxi project management office; PIE = project implementation unit; PPE = personal protective equipment.							

3. **Capacity building.** In addition to training for EMP implementation, the project will provide consulting services and training to assist and train the staff of GPMO and PIEs in project management, environmental management, land acquisition and resettlement, procurement, as well as external resettlement and environmental monitoring. In addition to the training, specified in the plan, \$30,000 will be included in the budget for each tranche for wildlife trafficking enforcement capacity development.



# Resettlement Framework

---

September 2016

PRC: Guangxi Regional Cooperation and Integration  
Promotion Investment Program

Prepared by the GPMO of Guangxi Regional Cooperation and Integration Promotion  
Investment Program for the Asian Development Bank.

## CURRENCY EQUIVALENTS

(as of 2 September 2016)

Currency unit	–	yuan (CNY)
CNY 1.00	=	\$0.1499
\$1.00	=	CNY6.6692

## ABBREVIATIONS

AAOV	–	Average Annual Output Value
AP	–	Affected Person
ADB	–	Asian Development Bank
BEZ		Border Economic Zones
DPR		Detailed Project Report
GMS		Greater Mekong Subregion
GRC		Grievance Redress Mechanism
HD		House Demolition
IR		Involuntary resettlement
LA		Land Acquisition
M&E		Monitoring & Evaluation
MFF		Multitranches Financing Facility
NSEC		North-South Economic Corridor
PRC		People's Republic of China
PPTA		Project Preparatory Technical Assistance
RF		Resettlement Framework
RP		Resettlement Plan
SME		Small and Medium Enterprise
SPS		ADB Safeguards Policy Statement

## NOTE

In this report, "\$" refers to US dollars.

This resettlement framework is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the "terms of use" section of this website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## TABLE OF CONTENTS

I. INTRODUCTION .....	1
II. OBJECTIVES, POLICY FRAMEWORK AND ENTITLEMENTS .....	2
III. SCREENING OF SUBPROJECTS AND PREPRATION OF RESETTLEMENT PLAN.....	17
IV. CONSULTATION, PUBLIC PARTICIPATION AND INFORMATION DISCLOSURE .....	18
V. GRIEVANCE REDRESS MECHANISM.....	19
VI. INSTITUTIONAL ARRANGEMENTS.....	20
VII. IMPLEMENTATION SCHEDULE .....	21
VIII. BUDGET AND FINANCING.....	22
IX. MONITORING AND REPORTING.....	22
APPENDIX 1: INVOLUNTARY RESETTLEMENT IMPACT CATEGORIZATION CHECKLIST .....	25
APPENDIX 2: RESETTLEMENT PLAN OUTLINE.....	25
APPENDIX 3: OUTLINE OF INTERNAL RESETTLEMENT/SOCIAL MONITORING REPORT .....	31
APPENDIX 4: SAMPLE TERMS OF REFERENCE FOR THE EXTERNAL MONITOR .....	33

## I. INTRODUCTION

### A. Project Description

1. The Greater Mekong Subregion<sup>1</sup> (GMS) Cooperation Program envisions a subregion that is more integrated, prosperous, and equitable. This vision is being pursued through a "3C" strategy of enhancing connectivity, improving competitiveness, and promoting a greater sense of community. To implement this strategy, the GMS countries have adopted an economic corridor approach, whereby transport corridors will be expanded, trade and investment promoted, and economic growth stimulated. The People's Republic of China (PRC) and Viet Nam are active participants in development of the GMS North-South Economic Corridor (NSEC).

2. The PRC government has requested ADB to provide a \$450 million Multitranche Financing facility (MFF) to fund a portion of the long-term investment needs for implementing Guangxi's strategies and action plans for both the GMS and the Belt and Road Initiative.

3. This investment program will enhance cooperation between the PRC and Viet Nam under the GMS framework, and is expected to have high regional economic cooperation and integration (RCI) spill-overs, benefitting also Viet Nam's northern border provinces including Quang Ninh, Lang Son, and Cao Bang. The Investment Program will stimulate economic corridor development between Guangxi and the northern border provinces of Viet Nam by (i) supporting the expansion of small and medium-sized enterprises (SME) in border areas; (ii) facilitating efficient cross-border financial transactions and investments; (iii) facilitating the development of an integrated and interoperable cross-border e-commerce platforms for the PRC and Viet Nam; (iv) providing key infrastructure and trade-related services in border economic zones; and (v) improving physical and informational connectivity and policy coordination.<sup>2</sup>

### B. Purpose of this Resettlement Framework

4. This Resettlement Framework (RF) has been prepared for the approval of the above Multitranche Financial Facility<sup>3</sup> (MFF), and to guide resettlement planning activities for (i) the proposed civil works with potential land acquisition and resettlement (LAR) impacts for subsequent tranches or (ii) unanticipated LAR impacts in the first tranche. The RF will facilitate compliance with the Safeguard Requirements 2 and 4 of ADB's Safeguards Policy Statement (SPS) 2009.

5. The first tranche of the Investment Program has been classified as Category 'C' for Involuntary Resettlement. Some infrastructure development activities are likely to take place in the following tranches, however, as the specific locations of such infrastructure development has not yet been finalized, this Resettlement Framework (RF) has been prepared to guide the subproject selection, screening and categorization, social impact assessment, and preparation and implementation of resettlement plans of subprojects (where ADB's IR policy is triggered) in accordance with the requirements

---

<sup>1</sup> Guangxi Zhuang Autonomous Region and Yunnan Province are members of GMS.

<sup>2</sup> The Asian Development Bank (ADB) provided project preparatory technical assistance for Proposed Multitranche Financing Facility People's Republic of China Guangxi Regional Cooperation and Integration Promotion Investment Program (TA-9120 PRC).

<sup>3</sup> The MFF lending modality allows for the Investment Program to be split into tranches (projects). For ADB Board approval, only the first tranche is prepared with related safeguard documents. Frameworks (including this document) are prepared to guide the preparation of safeguard documents for subsequent tranches.

specified in Safeguard Requirements 2 and 4 of SPS. The classification is an ongoing process to be confirmed by ADB during detailed design or each tranche.

6. The key scope of the RF is to:

- (i) Reflect fully the national and ADB involuntary resettlement policy objectives and relevant policy principles and safeguard requirements governing preparation and implementation of subprojects and/or components;
- (ii) Explain the anticipated resettlement impacts of the subprojects and/or components to be financed under the proposed tranche;
- (iii) Specify the requirements that will be followed for subproject screening and categorization, assessment, and preparation of RPs where required;
- (iv) Describe arrangements for information disclosure and meaningful consultation with affected persons including measures to involve vulnerable groups, and grievance redress mechanism;
- (v) Describe legal framework, compensation policies, eligibility criteria and entitlements of affected persons (APs) or entities;
- (vi) Describe the requirements for mitigation or rehabilitation of living conditions and livelihoods:
- (vii) Describe implementation procedures including budgets, institutional arrangements, and capacity development requirements;
- (viii) Describe monitoring and reporting requirements; and
- (ix) Describe the responsibilities and authorities of the borrower/client, ADB, and relevant government agencies in relation to the preparation, submission, review, and clearance of subproject safeguard documents, and monitoring and supervision of safeguard plan implementation.

## **II. OBJECTIVES, POLICY FRAMEWORK AND ENTITLEMENTS**

### **A. Objective of the Resettlement Framework**

7. The objective of this RF is to ensure that subproject screening, and subsequent resettlement planning and implementation where required, complies with the ADB SPS (SR-2 for involuntary resettlement) as well as applicable laws and regulations set up at PRC national level, Guangxi regional level and concerned local level. Based on the ADB SPS, the EA (GPMO)/IAs (PMOs) formulated this RF with the assistance of PPTA team. The executing agency is Government of Guangxi, through the Foreign Loans Projects Management Office (GPMO) located in the Office of the Guangxi Project Leading Group (GPLG). The implementing agencies are: (a) Prefecture- or county-level municipal governments in (i) Fangchenggang; (ii) Qinzhou; (iii) Chongzuo; (iv) Pingxiang City; and (v) Baise, with their respective Municipal Project Leading Groups for Utilization of Foreign Loans (PLGs) to provide overall guidance to their respective municipal project management offices (PMOs); and (b) Bank of Communications Nanning Branch for financial intermediary lending (FIL) SME finance subproject.

8. This Resettlement Framework (RF) has been prepared based on the applicable laws and regulations of the PRC and ADB's Safeguards Policy Statement (SPS, 2009).

(i) Relevant ADB policies include:

- a. Safeguard Policy Statement (SPS), June 2009; safeguard requirement # 2 for involuntary resettlement
- b. Public Communications Policy, 2011
- c. Accountability Mechanism Policy, 2012.

(ii) Laws, regulations and policies of the PRC include:

- a. Land Administration Law of the PRC (January 1, 1999, amended on August 28, 2004)
- b. The Implementation Rules for The Land Administration Law of the People's Republic of China (effective as of January, 1, 1999, amended on July 29, 2014);
- c. The Administrative Measures for the Pre-Review of Land Use for Construction Projects of the local government (No. 42 Order of The Ministry of Land and Resources, effective as of January 1, 2009);
- d. Guidelines on Improving the System of Land Acquisition Compensation and Resettlement (the Ministry of Land and Resources made) (effective as of November 3, 2004);
- e. Real Property Rights Law of the People's Republic of China (No. 62 order of the President of the People's Republic of China, and effective as of October 1, 2007); and
- f. September, 2004 the Ministry of Land Resources promulgated Guidelines on Improving the System of LA Compensation and Resettlement (the Ministry of Land and Resources [2004] No. 238).
- g. The Decision of the State Council on Deepening the Reform and Rigidly Enforcing Land Administration (SC [2004] No. 28)
- h. Expropriation and Compensation of the Housing on the State-owned Land (Decree 590 of State Council, (effective from January 21, 2011).

(iii) Guangxi regional relevant laws and regulations include:

- a. Implementation Method of Guangxi Zhuang Autonomous Region for Land Administration Law (effective from September 1, 2001)
- b. Notification on Announcement for Average Annual Output Value for Land issued by Land Resource Department of Guangxi Zhuang Autonomous Region (effective from January 1, 2016)
- c. Guidelines on Improving and Managing Land Acquisition in Guangxi Zhuang Autonomous Region (effective from November 21, 2014).

## **B. ADB Policy on Involuntary Resettlement**

9. The ADB's SPS 2009 summarizes Involuntary Resettlement safeguard requirements, as follows:

10. The objectives of ADB's SPS (2009) with regard to involuntary resettlement are (i) to avoid involuntary resettlement wherever possible; (ii) to minimize involuntary resettlement by exploring project and design alternatives; (iii) to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and (iv) to improve the standards of living of the displaced poor and other vulnerable groups.

11. The involuntary resettlement safeguards covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) Involuntary acquisition of land, or (ii) Involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers them whether such losses and involuntary restrictions are full or partial, permanent or temporary.

12. The three important elements of ADB's SPS (2009) are: (i) compensation at replacement cost for lost assets, livelihood, and income prior to displacement; (ii)

assistance for relocation, including provision of relocation sites with appropriate facilities and services; and (iii) assistance for rehabilitation to enhance, or at least restore, the livelihoods of all displaced persons relative to pre-project levels and to improve the standard of living of displaced poor and other vulnerable groups.

### **C. PRC Laws and Regulations**

13. The Land Administration Law of the PRC is the main policy basis of the Project. The Ministry of Land and Resources and the Guangxi Zhuang Autonomous Region Government have promulgated policies and regulations on this basis. The Decision of the State Council on Deepening the Reform and Rigidly Enforcing Land Administration (SC [2004] No. 28) promulgated in October 2004 defines the principles and rates of compensation and resettlement for LA, and LA procedures and monitoring system. These legal documents constitute the legal basis for resettlement in the Project.

14. The key provisions of the PRC and Guangxi Laws and Regulations:

#### **1. Document 28: State Council Decision to Deepen Reform and Strictly Enforce Land Administration, issued by State Council, October 2004**

15. Article 12: Improving land acquisition compensation practice. People's Governments at the county level and above shall adopt practical measures to ensure that the farmers whose land is acquired shall not be made worse off. It should be ensured that land compensation fees, resettlement subsidies and compensation for ground attachments and standing crops shall be provided in accordance to applicable laws and regulation in full and in time. If the land compensation fees and resettlement subsidies as stipulated by law still cannot be able to maintain the original standards of the land-losing farmers and are not adequate to cover the social insurance costs of the landless farmers, the provincial government shall approve an increase in the resettlement subsidies. If the sum of the land compensation fees and resettlement subsidies has reached the legal upper limit but still cannot maintain the original living standards of the farmers, the local government can provide additional subsidies with the use of revenues from the sales for the use of state land. The provincial government shall formulate and publicize the standard annual output or regional land prices for land acquisition in the cities and counties under the provincial jurisdiction. Land acquisition compensation shall be kept identical for identical quality of land in same locality. The full costs of land acquisition for national key development projects shall be included in the overall project budget.

16. Article 13: Properly resettling farmers whose land is acquired. People's Governments at the county level and above shall formulate concrete measures to guarantee the long-term livelihood of the farmers whose land is taken. The farmers shall be given stocks for land-taking projects that have stable revenues. In a prescribed urban zone, the local government shall place the farmers who are made landless because of land acquisition in the urban employment system, and set up a social insurance system for them. If the acquisition of collective land takes place outside the prescribed urban area, the local government shall set aside essential farmland within the administrative area or assign suitable jobs. Resettlement in distant areas should be considered for farmers who can no longer have adequate land to continue farming. The labor and social insurance departments shall cooperate with other relevant departments to provide guidance on the establishment of employment training and social insurance program for land-losing farmers.

## **2. PRC Land Administration Law**

17. The Land Administration Law of the PRC was passed at the 16th session of the Sixth Standing Committee Meeting of the National People's Congress on June 25, 1986. It was subsequently amended at the Fourth Session of the Ninth Standing Committee Meeting of the National People's Congress. The newly amended law was brought into force on January 1, 1999, according to the Decision on the Amendment to the Land Administration Law of the PRC that was adopted at the Fifth Session of the Seventh Standing Committee Meeting of the National People's Congress.

18. Article 47: Land acquired shall be compensated for on the basis of its original purpose of use.

19. Compensation for acquired cultivated land shall include compensation for land, resettlement subsidies and attachments and young crops on the acquired land. Compensation for acquisition of cultivated land shall be six (6) to ten (10) times the AAOV of the acquired land for three years preceding such acquisition. Resettlement subsidies for acquisition of cultivated land shall be calculated according to the agricultural population to be resettled. The agricultural population to be resettled shall be calculated by dividing the amount of acquired cultivated land by the average amount of the original cultivated land per person for the unit of the land is acquired. The standard resettlement subsidies to be divided among members of the agricultural population needing resettlement shall be four (4) to six (6) times the AAOV of the acquired cultivated land for three years preceding such acquisition. However, the highest resettlement subsidies for each hectare of the acquired cultivated land shall not exceed fifteen times its AAOV for the three years preceding such acquisition.

20. Standards of land compensation and resettlement subsidies for acquisition of other types of land shall be prescribed by provinces, autonomous regions and municipalities directly under the Central Government with reference to the standards of compensation and resettlement subsidies for acquisition of cultivated land.

21. Standards for compensation of attachments and young crops on the acquired land shall be prescribed by provinces, autonomous regions and municipalities directly under the Central Government.

22. For acquisition of vegetable plots in city suburbs, the land users shall pay towards a development and construction fund for new vegetable plots in accordance with the relevant regulations of the State.

23. If land compensation and resettlement subsidies paid in accordance with the provisions of the second paragraph of this Article are still insufficient to help the farmers needing resettlement to maintain their original living standards, the resettlement subsidies may be increased upon approval by people's governments of provinces, autonomous regions and municipalities directly under the Central Government. However, the total land compensation and resettlement subsidies shall not exceed 30 times the AAOV of the acquired land for the three years preceding such acquisition unless approved and financed by local government.

## **3. Expropriation and Compensation of the Housing on the State-owned Land**

24. Article 2 In order to meet the demands of public interests, for the house expropriation from units and individuals on the state-owned land, the owner of the expropriated houses (hereinafter referred to as expropriate ) should be compensated fairly.



25. Article 4 The city and the county people's governments shall be responsible for the administrative divisions of the house expropriation and compensation in their own administrative area.

26. Article 5 The house expropriation departments can entrust the implementation unit to undertake the concrete work of house expropriation and compensation, and the implementation unit cannot seek to make profit as its goal.

27. Article 7 Any organization or individual have the rights to report to relevant people's government, house expropriation department and other relevant departments the behavior against the provisions of this regulation. The relevant people's government, house expropriation department and other relevant departments that receive the report should check and deal with the report in time.

28. Article 8 In order to meet the public interests such as safeguarding the state security and promoting national economic and social development, the house expropriation is definitely needed for any of the following conditions. Then the city or county people's government can make the decision of house expropriation.

- a. the need of national defense and foreign affairs;
- b. the need of infrastructure construction for energy, transport, and water conservancy organized and implemented by the government;
- c. the need of public affairs for science and technology, education, culture, health, sports, environmental and resources protection, disaster prevention and mitigation, cultural relic protection, social welfare, and municipal utilities organized and implemented by the government.
- d. the need for low-income house organized and implemented by the government;
- e. the need for reconstruction of the dangerous houses and poor infrastructure district in accordance with the relevant provisions of the urban and rural planning organized and implemented by the government;
- f. the need for other public interests needs set by laws, administrative rules and regulations.

29. Article 10 The house expropriation department makes an initial draft for expropriation and compensation and submit to city or county people's government.

30. The city or county people's governments shall organize relevant departments to demonstrate and publish the expropriation and compensation draft to ask for public opinion, the period of which should not be less than 30 days.

31. Article 12 Before the city or county people's government makes the decision of house expropriation, the government should make a social stability risk assessment. If the amount of house expropriation is large, it should be discussed and decided by the executive meeting of the government.

32. Before the decision of house expropriation is made, the fund of expropriation and compensation should be in full amount in place, be deposited in special account and used only for this purpose.

33. Article 13 After the decision of house expropriation was made, the city or county people's government should announce it in time. The announcement should include the house expropriation and compensation plan, the rights for the administrative reexamination and administrative proceedings and so on.

34. The city or county people's governments and the house expropriation department should do well in propagating and explaining the house expropriation and compensation.
35. The house is expropriated legally, at the same time, the use rights for state-owned land is also taken back.
36. Article 16 After the range of house expropriation is determined, it is banned to newly build, expand, rebuild houses and to change the use of houses for more unreasonable compensation; no compensation will be paid to the implementation against the regulations.
37. The house expropriation department should inform the relevant departments the above-mentioned behavior in written form to suspend relevant procedures. The written form should make the period of suspension clear, which should be no longer than one year.
38. Article 17 The compensation to expropriate by the city or county government that makes the decision of house expropriation should include the following:
- a. Compensation for the value of expropriated house;
  - b. The compensation for moving house and temporary shelters caused by house expropriation;
  - c. The compensation for production shut-down or business shut-down caused by house expropriation.
39. The city or county people's government should formulate subsidies and incentive measures to subsidize and reward the expropriated household.
40. Article 19 The compensation of the expropriated house should not be lower than the market price of the similar house on the publish date of the house expropriation decision. The value of expropriated house is decided by the qualified house evaluation organs according to the formulations of expropriated house evaluation.
41. Article 21 The expropriated household/entity can choose monetary compensation or choose house property right exchange.
42. Article 25 Based on the provisions of this regulation, the house expropriation department and the expropriate sign compensation agreement on compensation method, compensation amount, payment period, the location and area of the house for property right exchange, moving fee, temporary relocation fee or temporary shelter house, production shut-down and business shut-down loss, time limit for removal, the transition way and transition period, and so on.
43. After the signing of the agreement, if one party does not fulfill the appointed obligation in the agreement, the other party can lodge a lawsuit according to law.
44. Article 26 If the house expropriation department and the expropriate can not reach a compensation agreement during the signing period defined by the house expropriation plan, or the owner of the expropriated house is not clear, the house expropriation department reports to the city or county people's government to make compensation decision and shall make public announcement in the house expropriation range according to the provisions of this regulation and the house expropriation plan.

45. The compensation decision should be fair, including the relevant compensation agreement in Item 1, Article 25 of this regulation.

46. If the expropriate refuses to accept the compensation decision, he can apply for administrative the administrative reexamination or lodge a lawsuit according to law.

47. Article 27 The implementation of house expropriation shall compensate first and then move.

48. After the city or county people's government that makes the house expropriation decision compensates the expropriated household/entity, the expropriated household/entity should finish moving within the deadline defined by the compensation agreement or compensation decision.

49. No unit or individual can force the expropriate to move by violence, threat or illegal ways such as cutting off water supply, heat supply, gas supply, power supply and traffic, and the construction unit is banned to take part in the removal activity.

50. Article 29 The house expropriation department shall establish house expropriation and compensation files according to laws, and publish compensation for each household for expropriate in the house expropriation range.

#### **4. Implementation Method of Guangxi Zhuang Autonomous Region for Land Administration Law**

51. Article 7: The ownership of the state-owned and rural collective-owned land shall be determined by the Land Administration Law, the implementation regulation of the Land Administration Law and other laws and statutes.

52. Article 8: The rural collective-owned land is legally owned by the farmer's collectives and managed and administrated by the village collective economic bodies. If the village collective economic body is not complete, the villager committee shall manage and administrate the land. If the land in a village is owned by more than two rural collective economic bodies, each of the bodies or village group shall manage and administrate the land. If the land is owned by town/township, the rural collective economic bodies of the town or township shall manage and administer the land. If the rural collective economic body of the town or township is not complete, the town or township government shall manage and administer the land.

53. Article 21: Preparation of the yearly schedule of land use shall follow the following principle.

- a. strictly follow the overall land use plan and dominate the gross land size used for construction and protect the cultivated land.
- b. Guide the land demand by land supply, and rationally and effectively utilize the land.
- c. Preference of use of land shall be given to the key capital construction projects, and the projects supported by the state industrial policies of the region and state.
- d. Protect and improve the ecological environment and the sustainable use of the land resources.

54. Article 26: The following shall abide by in reclaiming new cultivated land in same size and quality of the cultivated land requisitioned for non-agricultural construction. (i) Within the land boundary for urban construction defined in the overall land use plan, the

local city, county government shall be responsible for organizing reclamation for implementation of the planned urban construction; (ii) Within the land boundary for construction of village or town facilities defined in the overall land use plan, the town or township government shall be responsible for organizing the rural collective economic bodies or the land occupying organization to reclamation for implementation of the planned construction of village or town facilities; and (iii) For the cultivated land occupation for construction of power generating, transportation, water conservancy, mining and military facilities beyond the land boundary for urban and rural construction defined in the overall land use plan, the land occupation organization shall be responsible for reclamation of new cultivated land.

55. Article 27: For the cultivated land occupied for non-agricultural construction, the organization or individual shall pay the reclamation fee if he has no means for reclamation.

56. Article 34: The land use organization and individual shall restore the destroyed land due to excavation, collapse and occupation during production and construction according to the State's and Regional stipulations concerning reclamation of land, and in 30 days of completing such reclamation, applies to the land administrative department of local municipality, county (city) government for inspection and acceptance. In case the land use organization or individual who has not means to conduct reclamation or whose such reclamation is not in compliance to the requirement in acceptance, he shall pay to the land administrative department of local municipality, county (city) government the land reclamation fee at a rate of CNY 20-80 per square meter. The said land administrative department shall organize the land reclamation.

57. Article 45: Each rural villager's household shall have only one piece of house plot. Construction of villager's residence shall be in compliance to the overall land use plan of the town/township, and shall be in combination of the reconstruction of the old village and take full advantages of the old house plot, idle land and waste land on hills within the village. Occupation of farmland shall be strictly limited. The area of approved new house plots shall observe the following criteria: (1) size of house plot in plain and suburban areas shall not exceed 100 square meters for each household; and (2) size of house plot in uplands and hilly areas shall not exceed 150 square meters for each household.

**5. Notification on Announcement for Average Annual Output Value for Land issued by Land Resource Department of Guangxi Zhuang Autonomous Region (effective from January 1, 2016)**

- a. Land acquisition approved by Guangxi Zhuang Autonomous Region and State Council should apply the new compensation standards.
- b. The integrated compensation consists of land compensation and resettlement subsidy. The compensation for standing crops and ground attachments, and social security fund is not included, and these 3 parts should be listed as separate expenditure.
- c. In addition to cash compensation, agricultural production resettlement, reemployment resettlement, using the land as share of the project and relocation resettlement can be applies. Skill training should be provided.

**D. Main Differences between ADB Policies and PRC Legislation**

58. The main differences between ADB involuntary resettlement policy requirements and PRC laws, together with gap-filling solutions, are summarized in Table 1 below.

**Table 1: Summary of Key Differences between ADB SPS 2009 and PRC Laws/Guangxi Policies and Gap-filling Measure**

ADB Safeguard Policy Statement	Corresponding Legal Provisions	Gap-filling Measures
<p><b>Policy Principle 1:</b> Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.</p>	<p>National legislation has no similar requirements. Lower levels of government generally are responsible for determining project preparation processes, but generally do not specifically require a separate early screening process.</p>	<p>Efforts will be made to minimize LAR impacts during FSR and further efforts will be made during detailed design.</p>
<p><b>Policy Principle 2:</b> Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.</p>	<p>According to the <i>Land Administration Law of the People's Republic of China</i>, Once a plan for compensation and resettlement subsidies for requisitioned land is decided on, the local people's government concerned shall make it known to the general public and solicit comments and suggestions from the collective economic organizations, the land of which is requisitioned, and the peasants.</p> <p><i>State Council [2004] No. 28</i>, Ministry of Land and Resources [2004] No. 238 and Guidelines on Improving and Managing Land Acquisition in Guangxi Zhuang Autonomous Region (effective from November 21, 2014 ) requires that (i) inform land acquisition condition, compensation rates, house relocation and livelihood restoration plans to affected farmers; (2) affirm the result of land acquisition surveys; (3) organize an evidentiary hearing if it is necessary (4) establish and improve GRM.</p>	<p>Consultation has begun at the early stage (before and during the ADB technical assistance phase). The Project will ensure APs are closely consulted during detailed design and will disclose the RP(s) to APs as required by ADB. The consultation and information disclosure will be continued during project implementation.</p>
<p><b>Policy Principle 3:</b> Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when</p>	<p><i>State Council [2004] number 28</i> states that (1) There are projects bring about stable profit. Farmers use land use</p>	<p>Rehabilitation and support measures will be included in the RP.</p>

ADB Safeguard Policy Statement	Corresponding Legal Provisions	Gap-filling Measures
<p>affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.</p>	<p>right as shares; (2) within a planned urban area, improvement of employment system and social security to safeguard AP's lives. (3) out of a planned urban area, land resettlement, employment resettlement, or displacement resettlement shall be implemented (4) carry out employment trainings.</p>	
<p><b>Policy Principle 4:</b> Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.</p>	<p>Ministry of Land and Resources [2004] 238 and Notification on Announcement for Average Annual Output Value for Land issued by Land Resource Department of Guangxi Zhuang Autonomous Region (effective from January 1, 2016 ) requires that (1) Agricultural production resettlement (2) reemployment resettlement (3) using the land as share of the project (4) relocation resettlement.</p> <p>National legislation relating to urban housing provides for independent valuation, compensation at market value, or provision of replacement housing of equivalent value at the request of affected persons. (See State Council Regulations on Collection and Compensation for Houses on State-Owned Land, 2011.) Arrangements generally assure security of tenure. Compensation rates are administratively determined through application of prescribed valuation processes.</p>	
<p><b>Policy Principle 5:</b> Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas</p>	<p>The vulnerable group will be included in the rural Minimum Living Guarantee System.</p>	<p>Special funds will be made available to assist the Vulnerable groups, who will be identified during the DMS. All assistance measures will be specified in the RP.</p>

ADB Safeguard Policy Statement	Corresponding Legal Provisions	Gap-filling Measures
provide them with appropriate income sources and legal and affordable access to adequate housing.		
<b>Policy Principle 7:</b> Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.	No similar requirements; legislation restricts compensation to those legally entitled.	Make compensation at replacement value to buildings without titles to land constructed before the cut-off time;
<p><b>Policy Principle 8:</b> Prepare a resettlement plan (RP) elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.</p> <p><b>Policy Principle 9:</b> Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.</p>	Except for large-scale water sector projects, there are no specific requirements to prepare a resettlement plan.	RP will be prepared for all subproject facilities entailing IR impacts. RP will be disclosed on ADB website and in the village in local language.
<b>Policy Principle 10:</b> Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.	Refer to Article 12 of No. 28 Decree. The total resettlement cost should be included in the total project cost estimate. All compensation and administrative costs are included. Some rehabilitation measures are covered by local government. There is no requirement or budget for external monitoring.	No need.
<b>Policy Principle 11:</b> Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.	<p>Regulations generally require compensation and other financial forms of resettlement assistance to be paid before physical or economic displacement.</p> <p>No systematic provisions for resettlement supervisions throughout the project implementation period.</p>	No need.
<b>Policy Principle 12:</b> Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the	Except for large-scale water projects, there are no requirements to monitor and evaluate outcomes, including	The requirements for monitoring and reporting are included in this RF and will be

ADB Safeguard Policy Statement	Corresponding Legal Provisions	Gap-filling Measures
objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring reports.	impacts on standards of living of displaced persons.  There is no requirement for reporting (internal and external) and there is no disclosure of monitoring results.	further specified in the RP, as needed.

## E. Entitlement Matrix

59. In general, people eligible for compensation would include those affected in the following ways:

**(i) Land to be permanently acquired/used for the project:** This refers to (a) members of affected villages who have formal land use rights either by land take for new facilities or by adjustment of farmlands, and (b) those outsiders who are currently farming the land areas under lease arrangement. Affected persons in category a) are entitled to (i) replacement land, or (ii) land compensation at replacement cost, or (iii) other assistance/benefit sharing, or (iv) a combination of the above. Compensation should be in line with the PRC Land Administration Law (1998), and the Notification on Announcement for Average Annual Output Value for Land issued by Land Resource Department of Guangxi Zhuang Autonomous Region (effective from January 1, 2016). Based on relevant national law and provincial and local regulations, the compensation for farmland, including land compensation and resettlement subsidy will be set to at least 16 times of AAOV. For those in category b) they are entitled to compensation for lost crops and lost structures and will be assisted to arrange other lands for lease.

**(ii) Loss of structures and fixed assets, including trees and green crops:** Owners of structures and other fixed assets (regardless of whether they hold land title or building permits for structures erected prior to the cut-off date). For structures to be demolished in rural areas, compensation will be set at the replacement value, based on analysis of material costs for a replacement structure in each subproject area. For those affected urban non-registered houses if any, compensation rates based on replacement value of structures should be provided along with rehabilitation measures. For urban registered houses, compensation based on market value will be paid. The compensation for various attachments, infrastructure facilities, transition subsidy, and moving allowance will be set in accordance with the local regulations.

For non-residential structures, compensation will be set at the replacement value, based on an analysis of material costs in the subproject area. In terms of compensation for equipment relocation, moving allowance, lost wages and income during the temporary interruption, this will be determined in accordance with actual costs. For those affected non-registered business if any, compensation rates based on replacement value should be provided along with rehabilitation measures.

**(iii) Losses associated with temporary impacts:** This includes temporary land occupation, or disturbance during construction. For temporary land occupation, the compensation will be based on the AAOV, length of occupation, and cost of land reclamation.



60. A brief description of eligible criteria, types of affected persons, compensation policy is shown in the entitlement matrix (Table 2).

**Table 2: Entitlement Matrix**

<b>Type of Impact</b>	<b>Affected Person</b>	<b>Compensation Policies and Entitlements</b>
<b>Permanent land acquisition/ occupation</b>	Users of state-owned land	<ul style="list-style-type: none"> <li>a. For the affected state-owned urban land users, such as enterprises, institutions, and residents, cash compensation based on market value and negotiation will be paid for the loss of the land areas.</li> <li>b. The compensation rate will be based on the principle of replacement value and will allow the relocated land users to obtain replacement land in similar locations for rehabilitation.</li> <li>c. For the affected other urban land areas, such as unused land, river channels, and so on, administrative transfer of the land will be carried out.</li> </ul>
<b>Permanent land acquisition</b>	Owners of collectively-owned irrigated land, dry land, fruit orchard/ garden, vegetable garden, fish pond, etc.	<ul style="list-style-type: none"> <li>a. Compensation standard for various rural lands should be in line with the <i>PRC Land Administration Law (1998) and Implementation Method of Guangxi Zhuang Autonomous Region for Land Administration Law (effective from September 1, 2001)</i>. <i>Notification on Announcement for Average Annual Output Value for Land issued by Land Resource Department of Guangxi Zhuang Autonomous Region (effective from January 1, 2016)</i>, stipulates the average annual output value (AAOV) and the multiples (at least 16 times).</li> <li>b. Cash compensation will be directly paid to APs</li> <li>c. The compensation rates for green crop and other ground attachments based on replacement value will be paid directly to the APs.</li> <li>d. For land loss farmers, they will be provided with replacement farmland through land readjustment and/or replacement farmland reserved by the village committee and/or various economic rehabilitation measures, such as skill training, provision of job opportunities, and social security to ensure their incomes and/or livelihoods are fully restored and sustainable.</li> <li>e. For those village groups with no possibility of land readjustment or development, the resettlement subsidy will be paid directly to the APs, and the village groups shall manage and use the land compensation fee based on the village meeting.</li> </ul>
<b>Temporary land occupation</b>	Owners of rural land	<ul style="list-style-type: none"> <li>a. The compensation for temporary land occupation will include young crops cost, loss of output during occupation, and land reclamation cost to restore lands after use by the subproject.</li> <li>b. The compensation will be determined according to the AAOV and length of occupation time. The average time limit of the temporary land acquisition is set at two years.</li> <li>c. The compensation for land reclamation will be based on actual cost or government's standards.</li> <li>d. While the compensation for green crop and/or loss of output during land occupation will be paid directly to</li> </ul>

		APs/entities, land should be restored by the contractors or local government will restore..
<b>Structure demolition</b>	Owner of Rural Houses	<ul style="list-style-type: none"> <li>a. For rural houses to be demolished, compensation will be set at the replacement value, based on analysis of material costs for a replacement structure in each subproject area. The compensation for various attachments, infrastructure facilities, transition subsidy and moving allowance will be set in accordance with the related laws and regulations.</li> <li>b. The relocated rural households will be resettled nearby within their current villages.</li> <li>c. For each relocated household, the village will provide a replacement housing plot funded by the Project, which will be connected with roads, water supply and electricity.</li> <li>d. For those villages with no possibility of allocation of housing plot, relocation apartments will be provided.</li> <li>e. If the land is leased, the compensation for land will be paid to the owner of the land, and the compensation for structures will be paid to the owner of the houses.</li> </ul>
	Owner of Urban Houses	<ul style="list-style-type: none"> <li>a. For demolished urban houses, compensation will be set at the market value based on appraisal.. The compensation for various attachments, infrastructure facilities, transition subsidy and moving allowance will be set in accordance with the related laws and regulations.</li> <li>b. The relocated urban households will be provided with two rehabilitation options. One is to provide replacement apartment housing with better quality and similar sizes. The other option is to provide cash compensation at replacement value so APs can purchase available units on the market. The objective of these two options is to ensure that the living condition of the relocated people is restored or improved.</li> <li>c. The compensation will be paid to the owners. The renters will be informed of house demolition in advance.</li> </ul>
	Owners or users of non-residential structures	<ul style="list-style-type: none"> <li>a. For owners of non-residential structures, such as enterprises, institutions, and shops, compensation will be set at the replacement value, based on an analysis of material costs in the subproject area, plus land value if located in urban planning areas.</li> <li>b. For those enterprises that remain in their current locations with relatively minor impacts, they will make their own arrangements to build any replacement buildings based on cash compensation received. For those enterprises that need to be relocated, the project management office and the local government should assist them to identify an alternative site in accordance with the urban land use plan.</li> <li>c. In terms of compensation for equipment relocation, the moving allowance, and lost wages and income during the temporary interruption will be determined in accordance with actual costs. Equipment that is not movable will be compensated at replacement cost.</li> <li>d. For small shop owners that are affected by the</li> </ul>

		<p>Project, cash compensation will be provided based on replacement value of damaged assets, plus moving and transition allowances, and lost wages during transition. Special assistance will be provided to enable businesses to relocate to a good commercial area, including start-up expenses.</p> <p>e. Affected workers will be assured of continued employment, either by the enterprises or by local government and such costs will be included in the compensation paid by the Project. Workers will receive salaries for a minimum of 3 months due to work stoppage or loss of employment.</p> <p>f. The project office and local government should provide assistance to them during the process of relocation and rehabilitation.</p>
<p><b>Loss of ground attachments</b> (Green crops, economic trees and other ancillary facilities (wells, drying grounds, etc.) caused by permanent or temporary land occupation)</p>	<p>Property/ asset owner (whether having legal title to land or not)</p>	<p>a. Collective and individual assets will be compensated at replacement cost or reconstructed in accordance with the "original function, the original scale and standards", and the costs will be included in the project cost and paid by contractor directly to the property/asset owner.</p>
<p><b>Damage to public infrastructure</b> (electricity, water lines, irrigation, drainage, roads)</p>	<p>Owner or in charge departments</p>	<p>a. All the common facilities affected by the Project shall be rehabilitated and rebuilt according to the actual conditions affected by the Project, the original standard, scale and function, and the new requirements. The compensation funds shall be planned according to the rehabilitation plan, and provided to the relevant public departments in charge of special facilities to organize the implementation. The compensation payable where public facilities are affected will be determined in accordance with the relevant regulations and estimates quota, with reference to the unit costs for similar subproject areas.</p>
<p><b>Impact on Vulnerable households</b></p>	<p>Vulnerable households<sup>4</sup> that are impacted by any of the above categories</p>	<p>a. Assistance will be provided to ensure there are no short term losses of income and that these households will be better off after the Project.</p> <p>b. Provision of labor for house reconstruction.</p> <p>c. Priority to obtain project related employment opportunities.</p> <p>d. Provision of house renting (lowest cost) information.</p>

## F. Cut-off Date

61. The cut-off date for the eligibility for compensation is the date on which EA announces the LA/HD notice. Any newly claimed land, newly built house or settlement in the project area by the APs after this date will not be entitled to compensation or subsidization. Any building constructed or tree planted purely for extra compensation will not be counted in the DMS.

<sup>4</sup> Vulnerable groups refer to individuals and households below the minimum living standard of each city/county, as well as orphans, the disabled, the mentally handicapped, and women-headed households.

### **III. SCREENING OF SUBPROJECTS AND PREPARATION OF RESETTLEMENT PLAN**

#### **A. Screening of Subproject**

62. For all of the Guangxi Regional Cooperation and Integration Promotion and Investment Program subprojects where land acquisition and resettlement is necessary, individual RPs must be prepared and implemented according to the policies set out in this RF. Following the ADB's operational procedures for involuntary resettlement, the first tranche of this MFF has been classified as Category 'C' for Involuntary Resettlement, so no RPs have been prepared; nonetheless, due diligence reports were prepared to assess IR impacts that occur prior to ADB involvement (early 2016).

63. The project will screen all subproject facilities for subsequent tranches during preliminary or detailed design to identify potential IR impacts. Firstly, further screening will be undertaken through site visits and consultations with potential APs to understand the existing local land use and ownership arrangements and the proposed project components and potential IR impacts. The following steps are required for the screening:

- Preparation of village level project maps showing existing conditions (housing, access roads, irrigation systems, contracted farmland, land use designations and current land use (i.e., vacant lands or uses that vary for official designation).
- Preparation of overlay maps identifying the proposed facilities and their boundaries (redlines) based on detailed design drawings.
- Verification of the land use rights and leases, including any disputes.
- Visit to and observation of the proposed construction works.
- Consultations with villagers to assess if the proposed works will adversely affect any person(s), groups or entities (as defined in this RF).
- Preparation of a screening report summarizing the main findings, including (i) brief description of the proposed facility site including village maps; (ii) description of subproject facility and types of works; (iii) description of proposed land use changes compared with the current use; (iii) IR impact findings identified by the DI; (iv) process and outcome of consultations with farmers and stakeholders (records of meetings, etc.); and (v) confirmation whether any further actions are required (i.e., need to prepare a RP) or not (i.e., no IR impacts or risks). The screening checklist is in **Appendix 1**.

#### **B. Due Diligence for Subprojects with prior IR Impacts**

64. In case of subprojects with prior land acquisition or involuntary resettlement, the PMO will conduct due diligence to determine if there are any outstanding compensation or resettlement issues, or unresolved grievances or related areas of reputational risk to ADB. If there are any outstanding involuntary resettlement issues, the PMO will report these to ADB and prepare corrective measures in the form of a retrofit plan to achieve compliance with ADB's IR requirements. The retrofit plan should be disclosed to affected persons and submitted to ADB for review and approval.

#### **C. Procedure for Assessment of Impact and Preparation of RP**

65. If the screening process identifies potential IR impacts, the next step would be to consider design modifications to avoid or reduce the degree of impacts. This will be an iterative process involving consultations between the APs and the design institute. Once the designs have been optimized and approved by the related PMO, if all IR impacts have been avoided, no further action is required. If some IR impacts remain, a RP will be

prepared. For this to be effective, the screening must be done together with the preliminary or detailed design process; it should not be done after designs are finalized.

66. RPs will be prepared in accordance with ADB's SPS (2009) and this RF (see outline in Appendix 2), in close collaboration with those affected. Each RP will establish appropriate safeguards including compensation measures to offset any losses to ensure no person is made worse off. The RPs will be prepared by the PMOs with the assistance of their consultants as needed, disclosed to affected persons, and reviewed and approved by the PMO prior to the PMO's submission to ADB for review and approval.

67. For preparation of the RP, the PMOs will organize the design institutes to carry out a detailed and 100% census survey based on final design, and sample socio-economic survey of APs with at least 20% of affected households or entities. The socio-economic survey should collect relevant information to understand baseline conditions and to analysis the impacts of LA, LO and HD impacts.

68. The RP will be prepared based on the analysis of impacts; and will include income restoration plan, land adjustment plan, compensation standards, house relocation plan and other mitigation measures, as required. Based on the assessment of impacts, the PMO will need to formulate the plan of compensation for losses, and where impacts are significant, the additional measures to restore lost income or assets. Compensation will be negotiated based on minimum published rates from relevant government agencies with additional discussion as required to ensure compensation at replacement value and adequate livelihood restoration. The compensation rates will be specified in each RP. Plans may also include measures to provide temporary or new infrastructure that is affected during construction. Each RP will include a budget for RP implementation, identifying the source of funds and an implementation schedule linked with the civil works. Construction of civil works will not commence until (i) ADB has approved the RP; and (ii) compensation has been paid, and/or replacement land has been allocated to affected persons. For contracts financed by ADB, contracts will not be awarded until the final RP has been approved by ADB. Finally, each RP will specify the requirements for the resettlement implementation supervision, monitoring and reporting (see guidelines in Section VI).

69. After review and endorsement by PMO, each RP will be submitted to ADB for approval. The PMOs, independent resettlement monitoring agency, and ADB project team will supervise and monitor the resettlement implementation for individual subprojects.

#### **IV. CONSULTATION, PUBLIC PARTICIPATION AND INFORMATION DISCLOSURE**

70. Each subproject with IR impacts should undertake public consultation and information disclosure within the project area with APs. Knowledge and acceptance of the proposed compensation policies and rehabilitation measures for the APs is a precondition for ADB approval of each RP.

71. In order to engage with the community and enhance public understanding on the Project and address the issues pertaining to resettlement, various types of APs and other stakeholders will be consulted through group discussions, meetings and individual interviews during the DPR and RP preparation of sub-projects. The opinions of the stakeholders and their perceptions will be obtained during these consultations and the RP will document these and explain how APs' concerns have been addressed.

72. To encourage meaningful participation by project stakeholders, enhance project benefits, improve project design and ensure effective implementation of all project activities, further information disclosure, consultations and participation by targeted groups will be planned during project design and implementation. The scope of information disclosure, consultations and participation includes explaining to and seeking feedback from APs about detailed scope and schedule of all proposed construction activities, land and facility improvements, land occupation, need for compensation, employment opportunities provided to local farmers, training, and non-agricultural support measures. The main purpose of such activities will be to allow the APs to understand the proposed project activities and obtain their agreement for carrying out such activities, so that they have a better idea how the project will benefit them. The information disclosure, consultation and participation work of this project is the responsibility of the PMO.

73. The subsequent consultation activities completed will be described in the RPs, as well as the consultation and participation activities to be carried out for RP implementation. To ensure the affected persons' opinions and suggestions are fully considered, public participation will precede the design and implementation of the resettlement measures. Public participation will be part of the whole process of planning, design, implementing, and monitoring the RP.

74. At the stage of drafting and finalizing the RPs, each PMO will disclose the related RP to the affected persons. The draft RPs will be disclosed to APs at least 1 month ahead of ADB review. If there are changes to the final RP, it will be disclosed again after being approved by ADB. ADB will also disclose the RPs on its website upon approval; this will include the formal endorsement letters from local government/PMOs.

## **V. GRIEVANCE REDRESS MECHANISM**

75. During implementation of the RP, APs' complaints may arise because of problems or change to the actual subproject implementation activities that had not been foreseen when the RP was prepared. In order to ensure that the APs can voice their complaints when any problem arises in connection with the land acquisition and/or resettlement of the APs, a grievance redress procedure is defined within this RF and will be included in the RPs.

A project level grievance redress mechanism (GRM) will be established to receive, manage and address any social issues which may arise due to the project. The project agencies will ensure that potentially affected communities are informed on GRM at an early stage. The purpose of this procedure is to provide a mutually satisfactory means for rapid response to any AP's complaint, to avoid any likelihood of a complicated legal procedure.

76. The detailed procedure is as follows:

- a. If any AP does not agree with the compensation or resettlement plan, he/she can voice his/her complaint to the village or residential committee. The village or residential committee should keep records, consult with the local resettlement office and provide a reply to the AP within 2 week.
- b. If the AP is not satisfied with the reply, he/she can appeal to the township or sub-district resettlement working office, which will take records, consult with the local resettlement office and provide a resolution to the AP within 2 week.

- c. If the AP still does not accept the proposed resolution, then he/she can appeal directly to the PMO, which is the main organization responsible for the whole subproject. The PMO should make a record of any appeal and provide a resolution within 1 week.
- d. If the dispute still cannot be resolved, then the AP can appeal to the GPMO. The GPMO is responsible for keeping records of all appeals, and the resultant resolutions.

77. APs also have the right to use alternative channels at any time: (i) go through an administrative appeal according to the *Administrative Procedure Law of PRC*, or (ii) go directly to the People's Court.

78. APs will be aware of their right to appeal through the participatory meetings and from distribution of the resettlement information booklet by following the new provisions in the land administration law and regulations. The Project will also publicize information through the mass media and collect the APs' opinions and suggestions, which will then be investigated and resolved through all necessary administrative levels in a timely manner.

Any costs incurred to receive documents and address grievances will be paid by the PMO or with regard to relevant laws and regulations (no charges need to be paid by complainants).

79. The tracking and documenting of grievance resolutions by the PMO will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s); (ii) regular updating of the GRM database by the Social safeguard Officer in each PMO; (iii) processes for informing stakeholders about the status of a case; and (iv) a simple but effective filing system, so that data can be retrieved for reporting purposes, including reports to ADB.

80. The aggrieved persons may also express grievance to the external monitor, who would then report it to the local PMO and GPMO.

81. Alternatively, the aggrieved person(s) may submit a complaint to the ADB's Project Team to try to resolve the problem. If good faith efforts are still unsuccessful, they may submit their complaint to ADB's Accountability Mechanism (2012).<sup>5</sup> The first step requires good faith efforts to resolve the problem with the ADB Project Team.

## **VI. INSTITUTIONAL ARRANGEMENTS**

### **A. Key Institutions**

82. The GPMO will be responsible for management of the overall investment program implementation. The PMOs for the subprojects are the IAs who have the subproject specific responsibility to implement the RPs in conjunction with local government agencies according to this RF. The GPMO will authorize the PMO of each subproject city to conduct regular (quarterly or semi-annual) monitoring, supervision and reporting of the resettlement implementation as per the requirements of this RF and subproject RPs. The institutions to be responsible for the planning, management, implementation and monitoring of the resettlement activities include:

- (i) GPMO for Guangxi Regional Cooperation and Integration Promotion Investment Program,

---

<sup>5</sup> <http://www.adb.org/Accountability-Mechanism/default.asp>.

- (ii) PMO for each subproject,
- (iii) Village (Residential) Committee, and Villagers' Group,
- (iv) Selected Design Institutes for FSR/detailed design report,
- (v) Selected Design Institutes for Resettlement Planning, and
- (vi) Selected Independent Resettlement Monitoring and Evaluation Institution.

83. In the RP for each subproject, details should be presented on the staff, responsibility, and relationship of these institutions that are required. In addition, assessment of institutional capacity and resources capacity should be carried out, based on which, detailed training programs will be developed and included in the RP. Although the GPMO has extensive experience, most staff of the subproject PMOs have had less exposure to implementing foreign loan funded projects, and with ADB resettlement policy requirements. Additional training for resettlement staff from each subproject will be included in the individual RPs.

## **B. Resettlement responsibilities of the Institutions**

84. **EA (GPMO).** Its primary duties are to organize resettlement work of this Investment Program, take charge of policy development of the resettlement activities in the implementation areas of subprojects, endorse this RF, and organize and coordinate relationship of the resettlement agencies at all levels.

85. **IAs (PMO for each subproject).** Its main duties are to take charge of policy development of the resettlement activities in the implementation areas of this subproject, endorse the RP(s) and organize and coordinate relationship of the related agencies (land resource bureau, house demolition bureau, etc), and report to GPMO. The PMO will provide support to the design institutes and external M&E agency. A resettlement office will be set in the PMO.

86. **Affected village/community committees:** providing land contracting information, assisting in the surveys, reallocate housing sites and contracted land after land acquisition and house demolition, providing information on affected vulnerable groups, carrying out community mobilization and publicity, assisting technicians in measurement, valuation, negotiating and signing the resettlement agreements.

87. **Design institute for FSR/detailed design report:** preparing the project design and defining the range of land acquisition and house demolition.

88. **Design Institutes for Resettlement Planning:** It will conduct the detailed impact measurement survey and socio-economic household survey, consultation with the APs and prepare the RP.

89. **Independent Resettlement Monitoring and Evaluation Institution.** It will observe all aspects of the implementation of RP and, conduct M&E of relocation and resettlement work, and submit external M&E report of resettlement to the PMO and ADB.

## **VII. IMPLEMENTATION SCHEDULE**

90. The RP implementation schedule will vary from subproject to subproject. In general, the subproject implementation will consist of the three major phases, namely (i) project and RP preparation, (ii) land acquisition and house demolition, and (iii) resettlement and rehabilitation of APs. In line with the principles laid down in this RF, the GPMO and PMOs will ensure that project activities are synchronized between the resettlement plan implementation activities as well as the subproject implementation. The GPMO and PMOs will ensure that no physical or economic displacement of



displaced households will occur until: (i) compensation at full replacement cost has been paid to each displaced person for project components or sections that are ready to be constructed; (ii) other entitlements listed in the resettlement plan are provided to the displaced persons; and (iii) a comprehensive income and livelihood rehabilitation program, supported by adequate budget, is in place to help displaced persons, improve, or at least restore, their incomes and livelihoods. Furthermore, all RPs will be revised during detailed design, and the updated RPs will be approved by government and ADB and disclosed prior to implementation.

## **VIII. BUDGET AND FINANCING**

91. The project implementation units (PIUs) of each subproject will bear all costs related to permanent land acquisition, house demolition, temporary land occupation and ground attachments compensation, if there are IR impacts. Actual costs of compensation and rehabilitation will be specified in each RP. The cost evaluation and budget will be included in every RP and will specifically mention — cash or in-kind measures (e.g., replacement land, land adjustment, benefit sharing, etc.). All affected persons have rights to compensation, rehabilitation and other support measures if they are adversely impacted by loss of land, income or property assets.

92. Resettlement policies identified in the RF provide the basis for calculation of resettlement compensation and other costs. Resettlement compensation shall be paid in full to the individual, entity or collective suffering from loss of land or other property. The procedures through which the compensation is disbursed will be specified in each RP. The basic principle is that fund flows will be as direct as possible, to minimize the coordination, arbitration and other intermediate links. The budget of the RP will include contingency expenses, usually about 10% of the total RP budget, to meet the needs of cost increase or unexpected resettlement expenses.

93. The costs for monitoring, supervision, grievance redress, reporting and engaging the external monitor will be borne by each PMO as part of their project administration budgets. These costs will be included in the individual RPs.

## **IX. MONITORING AND REPORTING**

94. Both internal and external monitoring and evaluation of the resettlement screening and RP implementation will be carried out to ensure all APs and communities are compensated adequately and timely, and that their lands, incomes and property assets are restored or adequately compensated in cash or kind as early as possible, in accordance with the principles set out in the RF.

### **A. Internal Monitoring**

95. The PMOs will be responsible for the internal resettlement monitoring activities. The monitoring work will include reviewing the main implementation milestones, evaluating the resettlement impacts, and if necessary revising the subproject RPs (e.g., due to change in scope). The PMO will be responsible for ensuring the effective performance of the resettlement institutions during resettlement implementation, including strengthening the coordination between different institutions. PMOs will prepare quarterly progress reports for submission to ADB as the routine review and monitoring of resettlement implementation issues. The reports would include any suggestions for consideration and future action. An outline of internal monitoring report is enclosed in **Appendix 3**.

96. The internal monitoring will include:

1. Updates of implementation schedules and progress of the last quarter and works/actions planned in the next quarter;
2. The allocation of housing sites, house reconstruction, and relocation activities;
3. Assessment of implementation progress and the quality of the replacement facilities for the resettled people and their productive activities;
4. Investigation, coordination and provision of suggestions to deal with any issues that arise (previously or newly) for the resettlement institutions and the APs during the resettlement implementation process;
5. Oversight on the restoration of family income once relocation and resettlement has been completed;
6. Measures taken for vulnerable groups or individuals;
7. The allocation, disbursement, and use of resettlement compensation;
8. Assessment and support for participation and consultation during the implementation period;
9. Progress on resettlement training and its effectiveness in livelihood promotion; and
10. Implementation issues and proposed follow-up actions.
11. The PMO will be responsible for preparing and submitting to ADB an annual resettlement summary report and a final comprehensive resettlement completion report once all resettlement activities have been finished.

## **B. External Monitoring**

97. According to ADB's policies, one qualified, independent and experienced resettlement agency will be engaged as the independent resettlement monitor.

98. The external monitor will conduct follow-up M&E of IR screening process and resettlement activities periodically, monitor resettlement progress, quality and funding, and give advice. It will also conduct follow-up monitoring of the APs' production level, income level and standard of living, and submit M&E reports to the PMO and ADB. See Appendix 4 for the terms of reference for external M&E.

### **1. Scope and Methods of External Monitoring**

#### **a. Baseline survey**

99. The external monitor will conduct a baseline survey of households in the affected villages and village groups affected by land acquisition or by house demolition to obtain baseline data on the monitored displaced households' production level and standard of living. The production level and standard of living survey will be conducted annually to track variations of the APs' production level and standard of living. This survey will be conducted using such methods as household survey (sample size: 20% of the households affected by land acquisition to be sampled randomly and 100% of AHs by house demolition, 100% of the affected village groups), random interview, focus group discussions and field observation to acquire necessary information. Qualitative and quantitative evaluation will be made on this basis.

#### **b. Periodic M&E**

100. During the implementation of the RP, the external monitor will conduct periodic follow-up resettlement monitoring semi-annually of the following activities by means of field observation, household survey and random interview:

- Payment and amount of compensation;

- Adequacy and effectiveness of consultation and participation;
- Preparation and adequacy of the resettlement site;
- House rebuilding;
- Relocation of the affected persons to new housing;
- Training of local official and livelihood training for APs;
- Support for vulnerable groups and improved living standards;
- Restoration and rebuilding of infrastructure and special facilities;
- Production and livelihood restoration measures;
- Relocation and/or rehabilitation of affected businesses or shops
- Compensation for lost properties and attachments;
- Compensation for lost work in affected businesses or shops;
- Payment and adequacy of transition subsidy;
- Timetables of the above activities (applicable at any time);
- Effectiveness of resettlement organizations;
- Effectiveness of GRM and complaint resolution;
- Use of compensation fees for collective land and income of APs;
- Income growth of households through income restoration measures; and
- Whether affected persons have benefited from the subproject.

**c. Public consultation**

101. The external monitoring agency will attend public consultation meetings held during resettlement implementation to evaluate the effectiveness of public participation.

**d. Grievance redress**

102. The external monitor will visit the affected villages and groups periodically, and inquire with the subproject PMOs and town resettlement offices and implementing agencies that accept grievances about how grievances have been handled. It will also meet complainants, assess the status of problem resolution and, where necessary, propose corrective measures and advice for existing issues so as to make the resettlement process more effectively.

**2. External Monitoring Reporting**

103. The external monitor will submit monitoring or evaluation reports to ADB and the PMO semi-annually during resettlement implementation, followed by two annual evaluation reports.

## APPENDIX 1: INVOLUNTARY RESETTLEMENT IMPACT CATEGORIZATION CHECKLIST

1. The EA will submit to ADB the Involuntary Resettlement Impact Categorization Checklist for each subproject. The project management Consultants will prepare the checklist based on field survey.

Land Acquisition and Resettlement Issues	Yes	No	Not Known	Remarks
<b>A. For Subprojects with Prior Land Acquisition or Resettlement</b>				
1. Did the subproject require any permanent land acquisition or temporary land occupation? If yes, provide information on				Please determine the arrangements made by the local/provincial government on matters pertaining to land acquisition , compensation and resettlement and rehabilitation.  If there are outstanding issues that are likely to be noncompliant with ADB's Safeguards Policy Statement and the Resettlement Framework, prepare a corrective action plan (CAP)
– Name of village/s and county where subproject is located and from whom land was acquired				
– Total land area occupied by the subproject				
– Status of land acquisition for the facility/subproject				
– Information on status of payment of compensation				
– Type of land acquired (i.e. land classification prior to subproject construction)				
– Amount paid by the government agency to original land users for land and/or fixed assets				
– Name of local government agency who handled land acquisition and resettlement activities				
– Number of persons/households affected by land acquisition by the Government				
2. During the ground clearing works for the subproject, was there any				
– Demolition of residential houses and relocation of affected persons?				
– Demolition of commercial structures or any other structures?				
– Loss of businesses and other livelihoods?				
– Loss of crops and trees				
3. Are there any outstanding grievances or unpaid compensation?				
<b>B. For Subprojects with New/Additional Land Acquisition or Resettlement</b>				
1. Will the subproject require acquisition of collectively owned land, state-owned land or land held by community under traditional, customary and usufruct rights?				If yes, compensation at replacement cost may be required and details outlined in a resettlement plan (RP)
2. Will access to common properties (e.g. burial grounds, community facilities, public grazing lands, forest, etc) be restricted by subproject activities?				If yes, mitigation measures accepted by the affected community need to be outlined in an RP.
3. Will land acquisition result in loss of				If yes, prepare a

housing and/or affect other structures?				resettlement plan (RP).
4. Are there any non-titled people whose living arrangements and/or livelihoods will be affected by the subproject?				If yes, livelihood restoration measures should be developed and described in the RP.
5. Will there be loss of agricultural plots?				
6. Will there be losses of crops, trees, and fixed assets?				
7. Will there be loss of businesses or enterprises?				
8. Will there be loss of incomes and livelihoods?				
9. Will any social or economic activities be affected by land use-related changes?				

<b>IR Impact Category</b>			<b>Plan Required</b>	Prepared by: (Subproject Staff) Name and Signature: Designation: Date:
<b>A</b>	Significant Impact		RP/CAP	Approved by: ( ) Name and Signature: Designation: Date:
<b>B</b>	Not Significant		RP/CAP	
<b>C</b>	No impact		None	

## **APPENDIX 2: RESETTLEMENT PLAN OUTLINE**

1. This outline is part of the ADB SPS Safeguard Requirements 2. A resettlement plan is required for all projects with involuntary resettlement impacts. Its level of detail and comprehensiveness is commensurate with the significance of potential involuntary resettlement impacts and risks. The substantive aspects of the outline will guide the preparation of the resettlement plans, although not necessarily in the order shown.

### **A. Executive Summary**

2. This section provides a concise statement of project scope, key survey findings, entitlements and recommended actions.

### **B. Introduction and Project Description**

3. This section:

- (i) provides a general description of the project, discusses project components that result in land acquisition, involuntary resettlement, or both and identify the project area.
- (ii) describes the objectives of the RP; and
- (iii) describes the alternatives considered to avoid or minimize resettlement. Include a table with quantified data and provide a rationale for the final decision.

### **C. Scope of Land Acquisition and Resettlement**

4. This section:

- (i) discusses the project's potential impacts, and includes maps of the areas or zone of impact of project components or activities;
- (ii) describes the scope of land acquisition (provide maps) and explains why it is necessary for the main investment project;
- (iii) summarizes the key effects in terms of assets acquired and displaced persons; and
- (iv) provides details of any common property resources that will be acquired.

### **D. Socioeconomic Information and Profile**

5. This section outlines the results of the social impact assessment, the census survey, and other studies, with information and/or data disaggregated by gender, vulnerability, and other social groupings, including:

- (i) define, identify, and enumerate the people and communities to be displaced;
- (ii) describe the likely impacts of land and asset acquisition on the people and communities displaced taking social, cultural, and economic parameters into account;
- (iii) discuss the project's impacts on the poor, indigenous and/or ethnic minorities, and other vulnerable groups; and
- (iv) identify gender and resettlement impacts, and the socioeconomic situation, impacts, needs, and priorities of women.

### **E. Information Disclosure, Consultations, and Participation**

6. This section:

- (i) identifies project stakeholders, especially primary stakeholders;
- (ii) describes the consultation and participation mechanisms to be used during the different stages of the project cycle;
- (iii) describes the activities undertaken to disseminate project and resettlement information during project design and preparation for engaging stakeholders;
- (iv) summarizes the results of consultations with displaced persons (including host communities), and discusses how concerns raised and recommendations made were addressed in the resettlement plan;
- (v) confirms disclosure of the draft resettlement plan to displaced persons and
- (vi) includes arrangements to disclose any subsequent plans; and
- (vii) describes the planned information disclosure measures (including the type of information to be disseminated and the method of dissemination) and the process for consultation with displaced persons during project implementation.

## **F. Grievance Redress Mechanism**

7. This section describes mechanisms to receive and facilitate the resolution of displaced persons' concerns and grievances. It explains how the procedures are accessible to displaced persons and gender sensitive.

## **G. Legal Framework**

8. This section:

- (i) describes national and local laws and regulations that apply to the project and identify gaps between local laws and ADB's policy requirements; and discuss how any gaps will be addressed.
- (i) describes the legal and policy commitments from the EA for all types of displaced persons;
- (ii) outlines the principles and methodologies used for determining valuations and compensation rates at replacement cost for assets, incomes, and livelihoods; and set out the compensation and assistance eligibility criteria and how and when compensation and assistance will be provided.
- (iii) describes the land acquisition process and prepare a schedule for meeting key procedural requirements.

## **H. Entitlements, Assistance and Benefits**

9. This section:

- (i) defines entitlements and eligibility of displaced persons , and describes all resettlement assistance measures (includes an entitlement matrix);
- (ii) specifies all assistance to vulnerable groups, including women, and other special groups; and.
- (iii) outlines opportunities for displaced persons to derive appropriate development benefits from the project.

## **I. Relocation of Housing and Settlements**

10. This section:

- (i) describes options for relocating housing and other structures, including replacement housing, replacement cash compensation, and/or self-selection (ensure that gender concerns and support to vulnerable groups are identified);

- (ii) describes alternative relocation sites considered; community consultations conducted; and justification for selected sites, including details about location, environmental assessment of sites, and development needs;
- (iii) provides timetables for site preparation and transfer;
- (iv) describes the legal arrangements to regularize tenure and transfer titles to resettled persons;
- (v) outlines measures to assist displaced persons with their transfer and establishment at new sites;
- (vi) describes plans to provide civic infrastructure; and
- (vii) explains how integration with host populations will be carried out.

## **J. Income Restoration and Rehabilitation**

11. This section:

- (i) identifies livelihood risks and prepare disaggregated tables based on demographic data and livelihood sources;
- (ii) describes income restoration programs, including multiple options for restoring all types of livelihoods (e.g. project benefit sharing, revenue sharing arrangements, joint stock for equity contributions such as land, discuss sustainability and safety nets);
- (iii) outlines measures to provide social safety net through social insurance and/or project special funds;
- (iv) describes special measures to support vulnerable groups;
- (v) explains gender considerations; and
- (vi) describes training programs.

## **K. Budget and Financial Plan**

12. This section:

- (i) provides an itemized budget for all resettlement activities, including for the resettlement unit, staff training, monitoring and evaluation, and preparation of resettlement plans during loan implementation.
- (ii) describes the flow of funds (the annual resettlement budget should show the budget-scheduled expenditure for key items)
- (iii) includes a justification for all assumptions made in calculating compensation rates and other cost estimates (taking into account both physical and cost contingencies), plus replacement costs.
- (iv) includes information about the source of funding for the resettlement plan budget.

## **L. Institutional Arrangements**

13. This section:

- (i) describes institutional arrangement responsibilities and mechanisms for carrying out the measures of the resettlement plan;
- (ii) includes institutional capacity building program, including technical assistance, if required;
- (iii) describes role of NGOs, if involved, and organizations of displaced persons in resettlement planning and management; and
- (iv) describes how women's groups will be involved in resettlement planning and management



**M. Implementation Schedule**

14. This section includes a detailed, time bound, implementation schedule for all key resettlement and rehabilitation activities. The implementation schedule should cover all aspects of resettlement activities synchronized with the project schedule of civil works construction, and provide land acquisition process and timeline.

**N. Monitoring and Reporting**

15. This section describes the mechanisms and benchmarks appropriate to the project for monitoring and evaluating the implementation of the resettlement plan. It specifies arrangements for participation of displaced persons in the monitoring process. This section will also describe reporting procedures.

**APPENDIX 3: OUTLINE OF INTERNAL RESETTLEMENT/SOCIAL MONITORING REPORT**

<b>Section</b>	<b>Contents</b>
<b>Summary and milestone</b>	An executive summary including status on RP milestones. Include Table on Milestone.
<b>Introduction</b>	<p>Brief background on the project/subproject and progress status (works)</p> <p>The status of project's/subproject's resettlement category and planning documents (original, updated or new plans) on resettlement/social safeguards</p> <p>Institutional arrangements for resettlement and social aspects (staff, consultants, grievance redress mechanism, translation of documents, etc.)</p> <p>Approval of budget and compensation standards for land acquisition and resettlement</p> <p>Preparation of detailed implementation schedule</p> <p>Arrangement for the monitoring (internal monitoring, external monitoring, etc.)</p>
<b>Monitoring Activities for this period</b>	<p>Methodology for monitoring</p> <p>Monitoring Period - what period the monitoring covers</p> <p>Main monitoring activities – site visits, consultations, survey etc</p>
<b>Monitoring Results</b>	<p>Update of LAR progress based on recent technical design and construction, including any change in scope.</p> <p>Explanation of any additional impacts and whether RP update needed.</p> <p>Update on compensation standards</p> <p>Progress and performance in implementation of RPs and related social plans (how their plans have been implemented, what are the outputs, etc.)</p> <p>Results on consultations, participation and grievance redress (whether they have been effective)</p> <p>Compliance on disclosure (whether reports have been submitted, posted on website)</p> <p>Whether the implementation complies with the approved</p>

	<p>RPs Whether any issues and corrective measures identified to achieve compliance. If yes, actions with target dates and responsible agency/person)</p> <p>Include Tables on key aspects, including:</p> <p>Impacts Update Standards Update LAR Progress Resettlement housing site preparation Income/livelihood rehabilitation measures Assistance to vulnerable groups Consultation and Disclosure Grievances</p>
<p><b>Summary, Conclusions and Follow-up Actions</b></p>	<p>Summary of main findings;</p> <p>Main issues identified and corrective actions noted;</p> <p>A table on follow-up action, which can be updated each period to track completion of actions required.</p>
<p><b>Attachments</b></p>	<p>Monitoring checklist (based on items identified in the RP)</p> <p>Photographs</p>

## **APPENDIX 4: SAMPLE TERMS OF REFERENCE FOR THE EXTERNAL MONITOR**

### **A. Introduction**

1. Monitoring and evaluation will include, but will not be limited to, (i) the progress and effectiveness of the implementation of the RP; and (ii) the evaluation of income restoration and post-resettlement conditions of the affected persons (APs) and affected communities, including host communities.

### **B. Objectives and Requirements of Monitoring and Evaluation**

2. The objectives of monitoring and evaluation are to assess whether the RP is implemented on schedule and within budget and whether the goals and principles of the RP are achieved. Specifically, monitoring and evaluation will focus on the following aspects of the APs' situation and the resettlement process.

- Social and economic situation prior to and after land acquisition and/or resettlement;
- Timely disbursement of funds and compensation payments to APs;
- Measures taken to restore APs' income/livelihoods;
- Functioning of the grievance redress mechanism
- Social adaptability after resettlement, where required;
- Restoration of APs' incomes/livelihood, including vulnerable groups
- Special items related to the vulnerable groups;
- Condition and quality of land temporarily acquired when it is returned to the original land users;
- and,
- Living conditions and economic status of APs following resettlement in comparison to the "without project" scenario.

3. Monitoring and evaluation will include (i) the verification or establishment of a socio- economic baseline of the APs prior to actual land acquisition, physical displacement/relocation, loss of assets or disruption of businesses (as relevant); (ii) verification of internal monitoring data and reports; (iii) the regular monitoring of their house demolition and displacement/relocation to new housing (as relevant) and adjustment during subproject implementation; and (iv) evaluation of their situation for a period of two years after land acquisition or house displacement (as relevant). In addition, qualitative and quantitative evaluation will be made on the sustainability of living conditions of APs. Investigation will include consultations and observations with APs, IAs, local officials, village leaders, as well as a quantitative sample survey of at least 20% of affected households. Focus group discussions will be conducted with male and female APs, vulnerable groups and others.

4. If the findings of the M&E indicate significant compliance gaps, the external monitor will work with the EA and/or PMO to prepare a corrective action plan (CAP) in cooperation with the relevant stakeholders, to address pending issues. The external monitor will also monitor and report on the implementation of the CAP.

### **C. Monitoring Indicators**

5. Monitoring will include process, output and outcome indicators. The monitoring framework and formats stipulated in the RPs will be adopted. The following general indicators should be covered where relevant.

- Disbursement of entitlements to APs and enterprises/businesses: compensation, relocation, housing, cultivated farmland, and employment as specified in the RP.
- Provision of relocation options, progress of distribution of cash compensation/housing plots and relocation houses, ; the compensation for construction of houses should at least be replacement cost; the APs must receive their compensation prior to dispossession and other entitlements and allowances as stipulated in agreements.
- Development of economic productivity: re-allocation of cultivated land, land restoration, job opportunities available to APs, number of APs employed or unemployed as a result of the subproject.
- Standard of living: Throughout the implementation process, the trends in standards of living will be observed and the potential problems in the way of restoration of standards of living will be identified and reported. The Monitor will carry out a tracer survey of baseline AHs before and after the completion of resettlement implementation to document the standards of living and the conditions of the APs for 2 years.
- Restoration of public infrastructure: all necessary infrastructure should be restored at least up to a standard equal to the standard at the original location; the compensation for all infrastructure should be sufficient to reconstruct it to the same quality
- Resettlement sites. Land for resettlement sites should be acquired in a timely manner and public infrastructure provided prior to commencement of house construction. Long transition period should be avoided through good planning and scheduling of resettlement activities and house demolition.
- Effectiveness of resettlement planning. Adequacy of assets measurement, entitlements, sufficiency of budget, and timeliness of mitigation measures.
- Level of satisfaction of APs: level of satisfaction of APs with various aspects of the resettlement program; the effectiveness of the grievance redress mechanism will be reviewed and the speed and results of grievance redress measures will be monitored.
- Social adaptability of vulnerable groups: impacts on children, ethnic minorities and other vulnerable groups, public participation, APs' attitudes and reaction to post resettlement situation, implementation of preferential policies, income restoration measures, and improvements in women's status in villages.
- Other impacts. The monitor will verify if there are unintended impacts on employment and incomes.

#### **D. Special Considerations**

6. Special attention will be paid to women, ethnic minorities, as well as the poor and other vulnerable groups during monitoring; these include:

- The status and roles of women: Closely monitor any change in women's status, function and situations. At least 40% of APs surveyed will be women.
- Differential impacts on ethnic minority groups. Closely monitor their socioeconomic status to ensure that they have not been marginalized. Monitoring indicators should be disaggregated by gender, income level and ethnicity.
- Care and attention to vulnerable groups: Closely monitor living conditions of the poor, the elderly, persons with disability, single female headed households and other vulnerable groups after resettlement, to ensure that their livelihood and/or living condition is improved.
- Monitoring and evaluation will provide information on the utilization and adequacy of resettlement funds.

# Ethnic Minorities Development Framework

---

Project Number: 50050-002  
September 2016

## PRC: Guangxi Regional Cooperation and Integration Promotion Investment Program

Prepared by the Government of the People's Republic of China for the Asian Development Bank.

## CURRENCY EQUIVALENTS

(as of 2 September 2016)

Currency unit	–	yuan (CNY)
CNY 1.00	=	\$0.1499
\$1.00	=	CNY6.6692

## ABBREVIATIONS

ADB	–	Asian Development Bank
BEZ	–	Border Economic Zones
EM	–	Ethnic Minorities
EMDF	–	Ethnic Minorities Development Framework
EMDP	–	Ethnic Minorities Development Plan
GMS	–	Greater Mekong Subregion
GRC	–	Grievance Redress Mechanism
IP	–	Indigenous People
M&E	–	Monitoring & Evaluation
MFF	–	Multitranches Financing Facility
NSEC	–	North-South Economic Corridor
PRC	–	People's Republic of China
PPTA	–	Project Preparatory Technical Assistance
RAEM	–	Regional Autonomy of Ethnic Minorities
SPS	–	Safeguards Policy Statement

## NOTES

- (i) The fiscal year (FY) of the Government of the People's Republic of China and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

This ethnic minorities development framework is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the "terms of use" section of this website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## I. INTRODUCTION

### 1.1. Project Description

1. The Greater Mekong Subregion<sup>1</sup> (GMS) Cooperation Program envisions a subregion that is more integrated, prosperous, and equitable. This vision is being pursued through a "3C" strategy of enhancing connectivity, improving competitiveness, and promoting a greater sense of community. To implement this strategy, the GMS countries have adopted an economic corridor approach, whereby transport corridors will be expanded, trade and investment promoted, and economic growth stimulated. The People's Republic of China (PRC) and Viet Nam are active participants in development of the GMS North-South Economic Corridor (NSEC).

2. The PRC government has requested ADB to provide a \$450 million Multitranches Financing facility (MFF) to fund a portion of the long-term investment needs for implementing Guangxi's strategies and action plans for both the GMS and the Belt and Road Initiative.

3. This investment program will enhance cooperation between the PRC and Viet Nam under the GMS framework, and is expected to have high regional economic cooperation and integration (RCI) spill-overs, benefitting also Viet Nam's northern border provinces including Quang Ninh, Lang Son, and Cao Bang. The Investment Program will stimulate economic corridor development between Guangxi and the northern border provinces of Viet Nam by (i) supporting the expansion of small and medium-sized enterprises (SME) in border areas; (ii) facilitating efficient cross-border financial transactions and investments; (iii) facilitating the development of an integrated and interoperable cross-border e-commerce platforms for the PRC and Viet Nam; (iv) providing key infrastructure and trade-related services in border economic zones; and (v) improving physical and informational connectivity and policy coordination.<sup>2</sup>

### 1.2. Rationale for the Ethnic Minorities Development Framework

1. Although Zhuang, Han, Jing, Miao, Yao are officially designated as the long-dwelling ethnic groups (shiju minzu) in the Investment Program impacted districts/cities, the Zhuang constitute the dominant population. In Jingxi, 99.4% of the people are Zhuang. In Pingxiang City and Jiangzhou District, Zhuang population accounts for 85% and 80% respectively whereas in Fangcheng District, Zhuang accounts for 35.7% of the total population. Except for Zhuang, there is no concentrated settlement of any other ethnic group in the project area. The local population consulted does not see any ethnic differences amongst themselves either in terms of socioeconomic status or cultural or religious identities.

2. Based on due diligence in accordance with the SPS 2009, it is confirmed that the Tranche 1 will not incur any adverse impacts on ethnic minorities. MFF is categorized B for Indigenous People. Indigenous Peoples Plan elements were included in the project design following para 17 of Safeguard Policy Statement SR3 (Indigenous Peoples).

---

<sup>1</sup> Guangxi Zhuang Autonomous Region and Yunnan Province are members of GMS.

<sup>2</sup> The Asian Development Bank (ADB) provided project preparatory technical assistance for Proposed Multitranches Financing Facility People's Republic of China Guangxi Regional Cooperation and Integration Promotion Investment Program (TA-9120 PRC).



3. This Ethnic Minorities Development Framework (EMDF) has been prepared for the approval of the above Multitranche Financial Facility<sup>4</sup> (MFF), in consideration to the PRC's Constitution, relevant laws and policies, and the ADB's Safeguards Policy Statement (SPS) June 2009. The EMDF will facilitate compliance with the Safeguard Requirements 3 of ADB's Safeguards Policy Statement (SPS) 2009.

4. Some infrastructure development activities are likely to take place in the following tranches, however, as the specific locations of such infrastructure development has not yet been finalized, this EMDF has been prepared to guide the subproject selection, screening and categorization, social impact assessment, and preparation and implementation of ethnic peoples development plans of subprojects (where ADB's safeguard requirements will be triggered) in accordance with the requirements specified in Safeguard Requirements 3 of SPS. The classification is an ongoing process to be confirmed by ADB during each tranche.

5. The EMDF provides guidance on conduct of socio-economic surveys for beneficial as well as mitigating measures, capacity building, grievance and redress mechanism, institutional arrangements, consultation and disclosure, monitoring and evaluation, and the budget and financing.

## **II. OBJECTIVES, POLICY FRAMEWORK AND ENTITLEMENTS**

### **2.1. Objective of the Ethnic Minorities Development Framework**

6. The objectives of the EMDF are to ensure that, if ethnic groups in the project provinces are positively and negatively affected by the project, they (i) are adequately and fully consulted; (ii) receive culturally appropriate benefits from the project and compensation for any losses; (iii) are provided with special assistance as per laws and policies; and (iv) receive adequate protection against project adverse impacts on their culture identities. This Ethnic Minorities Development Framework also sets out the steps for preparation of Ethnic Minorities Development Plan (EMDPs) for the subprojects. The EMDP will be formulated and approved before any physical activities start.

7. In the ADB's SPS (2009), the term Indigenous Peoples is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following in varying degrees: (i) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; (ii) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; (iii) customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and (iv) a distinct language, often different from the official language of the country or region.

8. In PRC, the term "ethnic minorities" is more acceptable and understandable than "Indigenous peoples". This official terminology is used in this Ethnic Minorities Development Framework as per PRC Laws and Regulations.

---

<sup>4</sup> The MFF lending modality allows for the Investment Program to be split into tranches (projects). For ADB Board approval, only the first tranche is prepared with related safeguard documents. Frameworks (including this document) are prepared to guide the preparation of safeguard documents for subsequent tranches.

## **2.2. Relevant Laws and regulations of PRC**

### **2.2.1. PRC's Ethnic Minority Policy**

9. A unified multi-ethnic country is defined as the fundamental realities of the People's Republic of China (PRC), which highlights "safeguarding national unification and ethnic unity" as its overarching goal of ethnic minority affairs management and policies. The Common Program adopted by the Chinese People's Political Consultative Conference (CPPCC) in September 1949 clearly stipulated that "all the ethnic groups within Chinese territory were equal. PRC, as a unified multi-ethnic state, instituted EM Regional Autonomy in areas where EM people lived in compact communities, establishing various levels of regional EM autonomous organs according to the population and scope of these areas. The state takes various measures to guarantee that ethnic minorities can participate equally in the administration of state affairs and autonomously manage their internal affairs.

10. According to China's Constitution (adopted in 1954, and revised in 1982), Regional Autonomy of Ethnic Minorities (RAEM) is one of the fundamental national policies. The key principles include:

- Principle of ethnic equality and unity;
- Principle of equal opportunities for each ethnic minority to participate in the management of state affairs; and
- Principle of regional autonomy of ethnic minorities.

11. The key guiding principles of managing ethnic affairs in the PRC include: (i) insisting on socialist system; (ii) insisting on the leadership of the Chinese Communist Party (CCP); and (iii) insisting on the system of regional autonomy of ethnic minorities;" (iv) "safeguarding the unity of all ethnic groups; and (v) national unity is the supreme interest of all ethnic groups". Thus "equality and unity" are on the priority of PRC's EM policies which are further elaborated as:

- Policy of speeding up economic development in ethnic minority areas
- Favorable policy for ethnic minority family planning (2-3 children for each couple is permitted for ethnic minority people)
- Policy of developing ethnic minority education
- Policy of respecting and developing ethnic minority languages,
- Policy of respecting ethnic minorities' freedom in religious belief
- Policy of protecting ethnic minorities' cultural heritages
- Policy of respecting ethnic minorities' customs and traditions.

12. The new target of governmental effort in PRC rural development is to improve the living conditions and social safeguards in villages, and is elaborated as: "Five Connections, Eight Haves". Five connections refers to (i) connection of road; (ii) connection of electricity; (iii) connection of water supply; (iv) connection of TV cables; (v) connection of internet and telephone. The Eight haves include: (i) have qualified public space for organized activities; (ii) have qualified clinic and village doctors; (iii) each natural village has comfortable living conditions; (iv) each household has descent creditable house which is anti-seismic; (v) each person has at least one mu stable high yield paddy field or other farming land; (vi) each person has at least one mu cash crop land; (vii) each person has at least one livestock to sell each year; (viii) each member of the labor force has one skill to increase his/her income.

13. Since 2000, a series of national programs have been launched to speed up the overall development of ethnic minority areas. “West Development Program”, “Vitalizing Border Areas and Enriching the People Living There”, “Supporting Smaller Ethnic Minorities”, “the Reconstruction of Villages with Outstanding Ethnic Cultural Features”, “Poverty Alleviation Focusing on Contiguous Poor Areas”, “Water Cellar for Mothers” and many other local-level programs have had significant impact on the rural living conditions and socioeconomic development for both ethnic minority villages, Han villages and the mixed villages.

### **2.3. ADB’s Policy on Indigenous People**

14. On 29 June 2009, ADB updated its safeguards policies by integrating its policies on involuntary resettlement, indigenous peoples and the environment into one common SPS. The SPS was approved by the ADB Board on 20 July 2009 and became effective on 20 January 2010.

15. The objectives of ADB Policy on Indigenous Peoples are to ensure that project are designed and implemented in a way that fosters full respect for Indigenous Peoples’ identity, dignity, human rights, livelihood systems, and cultural uniqueness as defined by the Indigenous Peoples themselves so that they (i) receive culturally appropriate social and economic benefits; (ii) do not suffer adverse impacts as a result of projects; and (iii) can participate actively in projects that affect them. The term “Indigenous Peoples” is used by the SPS in a generic sense to refer to a distinct, vulnerable, social, and cultural group possessing the following four characteristics in varying degrees:

- (i) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- (ii) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- (iii) customary, cultural, economic, social, or political institutions that are
- (iv) separate from those of the dominant society and culture; and
- (v) a distinct language, often different from the official language of the country or region.

16. Projects financed by ADB, including associated facilities that are financed by the government or other sources, are expected to observe the following policy principles:

- (i) Screen early on to determine (a) whether Indigenous Peoples are present in, or have collective attachment to, the project area; and (b) whether project impacts on Indigenous Peoples are likely;
- (ii) Undertake a culturally appropriate and gender-sensitive social impact assessment or use similar methods to assess potential project impacts, both positive and adverse, on Indigenous Peoples. Give full consideration to options the affected Indigenous Peoples prefer in relation to the provision of project benefits and the design of mitigation measures. Identify social and economic benefits for affected Indigenous Peoples that are culturally appropriate and gender and intergenerationally inclusive and develop measures to avoid, minimize, and/or mitigate adverse impacts on Indigenous Peoples;
- (iii) Undertake meaningful consultations with affected Indigenous Peoples communities and concerned Indigenous Peoples organizations to solicit their participation (a) in designing, implementing, and monitoring measures to avoid adverse impacts or, when avoidance is not possible, to minimize, mitigate, or compensate for such effects; and (b) in tailoring project benefits for affected Indigenous Peoples communities in a culturally appropriate

manner. To enhance Indigenous Peoples' active participation, projects affecting them will provide for culturally appropriate and gender inclusive capacity development. Establish a culturally appropriate and gender inclusive grievance mechanism to receive and facilitate resolution of the Indigenous Peoples' concerns. Summarize the date, location, consultee group and items discussed (refer to Appendix 3 for a suggested template for the summary report);

- (iv) Ascertain the consent of affected Indigenous Peoples communities to the following project activities: (a) commercial development of the cultural resources and knowledge of Indigenous Peoples; (b) physical displacement from traditional or customary lands; and (c) commercial development of natural resources within customary lands under use that would impact the livelihoods or the cultural, ceremonial, or spiritual uses that define the identity and community of Indigenous Peoples. For the purposes of policy application, the consent of affected Indigenous Peoples communities refers to a collective expression by the affected Indigenous Peoples communities, through individuals and/or their recognized representatives, of broad community support for such project activities. Broad community support may exist even if some individuals or groups object to the project activities;
- (v) Avoid, to the maximum extent possible, any restricted access to and physical displacement from protected areas and natural resources. Where avoidance is not possible, ensure that the affected Indigenous Peoples communities participate in the design, implementation, and monitoring and evaluation of management arrangements for such areas and natural resources and that their benefits are equitably shared;
- (vi) Prepare an Indigenous Peoples Plan (IPP) that is based on the social impact assessment with the assistance of qualified and experienced experts and that draw on indigenous knowledge and participation by the affected Indigenous Peoples communities. The IPP includes a framework for continued consultation with the affected Indigenous Peoples communities during project implementation; specifies measures to ensure that Indigenous Peoples receive culturally appropriate benefits; identifies measures to avoid, minimize, mitigate, or compensate for any adverse project impacts; and includes culturally appropriate grievance procedures, monitoring and evaluation arrangements, and a budget and time-bound actions for implementing the planned measures;
- (vii) Disclose a draft IPP, including documentation of the consultation process and the results of the social impact assessment in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected Indigenous Peoples communities and other stakeholders. The final IPP and its updates will also be disclosed to the affected Indigenous Peoples communities and other stakeholders;
- (viii) Prepare an action plan for legal recognition of customary rights to lands and territories or ancestral domains when the project involves (a) activities that are contingent on establishing legally recognized rights to lands and territories that Indigenous Peoples have traditionally owned or customarily used or occupied, or (b) involuntary acquisition of such lands; and
- (ix) Monitor implementation of the IPP using qualified and experienced experts; adopt a participatory monitoring approach, wherever possible; and assess whether the IPP's objective and desired outcome have been achieved, taking into account the baseline conditions and the results of IPP monitoring. Disclose monitoring reports.

## **2.4. ADB IP Policy Principles Relevant to this Project**

17. All the above-mentioned ADB IP policy principles and approaches are relevant for the project despite the anticipated project impact on IP being limited. PRC does not have these specific requirements (such as early screening, social assessment, meaningful consultation, information dissemination, IPP and grievance redress system) in its project designing and implementation, assuming that these can be adequately dealt with by the local administrative system.

18. In view of the above, the key ADB SPS requirements which are relevant in this project due to the differences between ADB approaches and Chinese strategies include: (i) an early screening be conducted by qualified expert to identify IP in the Project areas and the potential impact on IPs. (ii) social impact assessment is conducted ensure that positive or adverse impacts of the Project are identified and the benefit has to be culturally appropriate and does not create gender differences; (iii) meaningful consultation with various IP organizations and communities is done to make sure people can participate actively in project design and implementation; (iv) an IPP/EMDP is prepared by qualified experts to ensure that positive impact on IPs are maximized and adverse impact is minimized or avoided; (v) project information to be adequately and timely disclosed so that IPs know clearly what the project is going to do in relation to their property and life; (vi) impact during and after the Project implementation is monitored both internally and externally, and (vii) proper grievance redress system is established so that the general goal of the project, the positive impacts on IP are realized and adverse impacts are mitigated or avoided.

19. Assuming the social indicators, economic status and quality of life of ethnic minority peoples are below those of the mainstream population, and poverty is an unacceptable human condition, ADB's SPS believes that equity, poverty reduction can be achieved through public policy, action, effective poverty reduction by promoting economic opportunities, social development and good governance. Thus social impact assessment (SIA) is critical to identify positive, negative, direct or potential impacts and to propose proper measures to maximize the benefits and to mitigate or avoid the adverse impact on ethnic minority peoples.

### **III. SOCIAL IMPACT ASSESSMENT AND PREPARATION OF AN ETHNIC MINORITY DEVELOPMENT PLAN**

#### **3.1. Screening**

20. The Screening will be conducted by subproject PMO??. Screening will be based on (i) review the relevant documents on ethnic minorities in the project areas; (ii) site visits to the subproject areas, (iii) meetings with local authorities and concerned agencies to confirm on the presence of the ethnic groups in the areas; and (iv) meaningful consultations with ethnic minority groups and communities, consultation with organizations and concerned agencies, local authorities on the potential impacts by the project on the ethnic groups. The objectives of the screening are to (i) determine if there are negative impacts on ethnic groups which are significant and to eliminate such subprojects; (ii) identify the level of assessment and institutional resources required for the preparation of Ethnic Minority Development Plans; and (iii) determine information and consultation requirements.

21. Based on the screening result, PMOs will summarize the impacts to submit to the GPMO. The following information will be analyzed by PMOs and the GPMO:

- (i) Name(s) and numbers of ethnic groups in the subproject area; Attachment to habitats and territories;
- (ii) The autonomy and distinctness of each ethnic group;
- (iii) Potential positive and negative impacts including on culture, livelihood and land.
- (iv) Information disclosure and consultations needed to effectively involve the affected ethnic groups

22. Tranche 1 has been categorized as Category C for the IP safeguards. Ethnic Minority Development framework (EMDF) is prepared to guide the preparation of any Ethnic Minority Development Plan (EMDP) for further tranches. Each subsequent tranche of the MFF will be screened, classified and assessed in accordance with the EMDF.

### 3.2. Social Impact Assessment

#### 3.2.1. Information Requirement

23. Social impact assessment will be carried-out by the PMO and the data/information will be used to prepare an ethnic minority development plan.

24. Where screening indicates potential project impacts on ethnic minorities, PMO will conduct investigation on the nature of the project impacts. Methodologies to be used for the assessment will be quantitative methods (collect statistical data and conduct questionnaire survey) and qualitative methods (key-informant interviews, in-depth interviews and focused-group discussions). While the Tranche 1 project benefits everyone equally, the subsequent subprojects are yet to be finalized. The PMOs will watch out for the positive and negative impacts of program components on ethnic minorities and document them for tranche 2 and 3 in the Table 1 (sample) below:

**Table 1: Program Component Impact Assessment Matrix**

Program Component	Positive Impact on Ethnic Minorities	Negative Impact on Ethnic Minorities

25. The following information will be collected:

- (i) Baseline socioeconomic profile of the ethnic groups in the project areas. Baseline information will include ethnicity and sex disaggregated data on demographic, social, cultural, and wealth status (poverty levels) characteristics of the affected ethnic groups;
- (ii) Identify the land and territories that ethnic groups have traditionally owned or customarily used or occupied; and the natural resources on which they depend;
- (iii) Assess their access to and opportunities to avail themselves of basic social and economic services;
- (iv) Include a gender-sensitive assessment of the affected minorities' perceptions about the project and its impact on their social, economic, and cultural status. A gender-sensitive analysis is critical to the determination of potential adverse impacts, relative vulnerability and risks to the affected ethnic groups given their particular circumstances and lack of access to opportunities relative to those available to other social groups;

- (v) Assess the potential adverse and positive effects of the project. These should be assessed for the short- and long-term, direct and indirect, and positive and negative impacts of the project on each group's social, cultural, and economic status; and
- (vi) Identify and recommend measures necessary to avoid adverse effects or, if such measures are not possible, identifies measures to minimize, mitigate, and/or compensate for such effects. Such measures must ensure that the ethnic groups receive culturally appropriate benefits under the project.

### **3.3. Reporting**

26. PMOs will analyze the data/information to prepare the Social Impact Assessment report to submit to the GPMO. The data/information on social impact will form an integral part of the ethnic groups development plan.

27. The identified social impacts as well as the measures to enhance the potential positive impacts and to avoid/minimize the potential negative impacts will be consulted with ethnic groups, communities, organizations, concerned agencies and local authorities. The procedures of information disclosure and consultations are presented in the Section IV and V below. The ethnic groups development plan will discuss the opinions, suggestions and concerns of the stakeholders and how these have been incorporated into the plan.

### **3.4. Preparation of Ethnic Minorities Development Plan (EMDP)**

28. An EMDP shall be prepared for each subproject (See Outline of EMDP enclosed as **Annexure I**). The ethnic groups development plans will be prepared by the PMOs with the assistance of their consultants as needed based on the results of the screening, social impact assessment and meaningful consultations, disclosed to affected persons, and reviewed and approved by the PMO prior to the PMO's submission to ADB for review and approval.

29. EMDPs will be prepared in Chinese and English languages and will be endorsed by local Government/PMOs and submitted to ADB for concurrence. The documents will be disclosed in accordance with ADB's Public Communications Policy to the affected communities and on ADB's website.

## **IV. CONSULTATION AND PARTICIPATION**

30. Meaningful consultation with affected ethnic groups persons, their neighbouring communities, and civil society will be conducted by PMO for each subproject. The aim of the meaningful consultation process is that all ethnic groups affected by the projects are properly and timely informed and consulted about the project, the scope, implementation schedule and activities, as well as expected impacts, both positive and negative, on them. Ethnic minorities aspirations, needs, and preferred options for the projects will be sought and measures to enhance benefits or mitigate negative impacts will be considered and recorded. A meaningful consultation process with ethnic groups will ensure their informed participation in (i) designing, implementing, and monitoring measures to avoid adverse impacts on them or, when avoidance is not possible, to minimize, mitigate, and compensate for such effects; and (ii) tailoring project benefits that accrue to them in a culturally appropriate manner. Meaningful consultation is a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken

in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

31. In carrying out meaningful consultation, all communication concerning the subproject will take place in a timely and appropriate manner - in the ethnic language of the ethnic groups and in a culturally appropriate way. Public meetings will be arranged in villages, using participatory approaches and in the ethnic minority language(s). Information will be posted in a central public location such as the village meetings venue or village head's house. Information will be mostly pictorial in order to ensure accessibility of the information for ethnic people with poor literacy skills. The public meetings will include participation of ethnic women and special attention will be given to the concerns of women and youth. To be understandable and readily accessible, the information will be communicated in a culturally appropriate way for each segment of the community. This may require different methods for women and the poor, for example. The preferred language or modes of information dissemination will be ascertained by PMO during project preparation. A range of methods will be used depending on project contents. Communication will not just be through reports, information brochures, and meetings—which, if used, should be in the local language if the community prefers this. In addition, graphs, pictures, story-telling, plays, and maps are all inclusive and powerful tools. Modern technology, such as internet chat rooms, Google earth, and local IP websites can also be used with some segments of the community, such as youth and young adults.

32. PMOs, district and village authorities will ensure that ethnic minorities are notified in advance about the public meetings. Local people's opinions, suggestions and concerns will be recorded in an appropriate way through minutes of meetings. Any claims or grievances brought up in meetings or other consultations will be recorded in the same way.

33. The draft EMDP will be disclosed at village level in a public meeting including all relevant stakeholders, with the final EMDP will also be disclosed at a public meeting. Women representing affected households must be present at the disclosure meetings. Copies of the EMDP will be placed in the village's leader houses and will also be circulated to the ethnic minorities.

## **V. DISCLOSURE OF INFORMATION**

34. PMOs, with support from district and village authorities will provide information to and conduct consultations with the affected ethnic groups and other stakeholders in a manner appropriate for the anticipated project impacts.

35. Timely disclosure of relevant information on the project to ethnic minorities will be carried out in a form and language(s) understandable to them, as is also mandatory. It is an integral part of consultation and participation. PMOs will disclose full and summary versions of the EMDP. The summary EMDP will describe the project briefly; list the anticipated impacts, major proposed mitigation measures, and project benefits; outline the grievance redress mechanism; and include contact details of the project information office for more information.

36. Under the Project, for IP safeguards, the following documents will be disclosed to ethnic minorities, posted in public places and uploaded to the ADB website (i) Draft and final Ethnic



Minorities Development Framework; and (ii) Draft and final Ethnic Minorities Development Plans and/or Corrective Action Plans prepared during implementation.

## **VI. GRIEVANCE REDRESS MECHANISM**

37. Members of ethnic groups will be made fully aware of their rights to grievance and the procedures by doing so verbally and in writing during consultation, survey and time of compensation. The complainants may present their complaints to the concerned local administrative officials and resettlement committees.

38. A project level grievance redress mechanism (GRM) will be established to receive, manage and address any social issues which may arise due to the project. The project agencies will ensure that potentially affected communities are informed on GRM at an early stage. The purpose of this procedure is to provide a mutually satisfactory means for rapid response to any AP's complaint, to avoid any likelihood of a complicated legal procedure.

39. The complaint can be filed first at the village level and can be elevated to the highest level if the complainants are not satisfied with the decisions made by the village and district levels/committees. Complainants from Ethnic Minority groups will be exempted from all taxes, administrative and legal fees associated with their claims and grievance redress.

40. All complaints and resolutions will be properly documented by the concerned resettlement committee and be available for (i) the public and (ii) review for monitoring purposes.

41. The detailed grievance redress procedure would be as follows:

- (i) The complainant can voice his/her complaint to the village or residential committee. The village or residential committee should keep records, consult with the local resettlement office and provide a reply to the AP within 1- 2 week.
- (ii) If the complainant is not satisfied with the reply, he/she can appeal to the township or sub- district resettlement working office, which will take records, consult with the local resettlement office and provide a resolution to the AP within 1 - 2 week.
- (iii) If the complainant still does not accept the proposed resolution, then he/she can appeal directly to the PMO, which is the main organization responsible for the whole subproject. The city or county subproject resettlement office should make a record of any appeal and provide a resolution within 1- 2 week.
- (iv) If the complaint still remains unresolved, then the AP can appeal to the GPMO. The Resettlement Office is responsible for keeping records of all appeals, and the resultant resolutions.

42. Complainant also have the right to use alternative channels at any time: (i) go through an administrative appeal according to the *Administrative Procedure Law of PRC*, or (ii) go directly to the People's Court.

43. All complaints and resolutions will be properly documented by the concerned resettlement committee and be available for (i) the public and (ii) review for monitoring purposes.

## VII. INSTITUTIONAL ARRANGEMENTS

### 7.1. Key Institutions

44. The GPMO will be responsible for management of the overall investment program implementation. The PMOs for the subprojects are the IAs who have the subproject specific responsibility to implement the EMDPs in conjunction with local government agencies according to this EMDF. The GPMO will authorize the PMO of each subproject city to conduct regular (quarterly or semi-annual) monitoring, supervision and reporting of the EMDP implementation as per the requirements of this EMDF and subproject EMDPs. The institutions to be responsible for the planning, management, implementation and monitoring of the EMDP include:

- (i) GPMO for Guangxi Regional Cooperation and Integration Promotion Investment Program,
- (ii) PMO for each subproject,
- (iii) Village (Residential) Committee, and Villagers' Group,
- (iv) Selected Independent Monitoring and Evaluation Institution.

45. In the EMDP for each subproject, details would be presented on the staff, responsibility, and relationship of these institutions that are required. In addition, assessment of institutional capacity and resources capacity would also be carried out, based on which, detailed training programs will be developed and included in the EMDP. Although the GPMO has extensive experience, most staff of the subproject PMOs have had less exposure to implementing foreign loan funded projects, and with ADB IP Policy requirements. Additional training for staff from each subproject will be included in the individual EMDPs.

### 7.2. Responsibilities of the Institutions

46. **EA (GPMO).** For ethnic groups development planning and implementation, GPMO has the following responsibilities:

- Guide, support and supervise the work of the PMO to screen the ethnic groups in the project areas and the impacts by the project.
- Prepare and submit the EMDP for the concerned Provincial Government and ADB for review and approval.
- Establish and disseminate standard procedures to the PPOs for: (a) carrying out screening and social impact assessment; (b) establishment and management of databases on ethnic groups in the project areas; (c) consultations and information dissemination to ethnic groups, local authorities and other stakeholders; (d) prompt implementation of corrective actions and resolutions of grievances; and (e) ongoing internal monitoring on the implementation of the EMDP.
- Coordinate with other ministries, government agencies, mass organizations, NGOs or other organizations to ensure efficient, effective delivery of support and mitigation measures.
- Prepare and submit the semi-annual progress report on EMDP implementation to ADB.

47. **IAs (PMO for each subproject):** For ethnic minority development planning and implementation, the PMO will have the following responsibilities:

- Screen the ethnic minorities and the impacts on the ethnic groups in the province;
- Coordinate with provincial, district and village authorities to carry out fieldwork required to prepare the EMDP, including the social impact assessment, information disclosure and consultations;
- Collaborate with the provincial and district resettlement committees and village arbitration units to address the grievances. Document the grievance redress and resolutions reached at different levels;
- Implement the support measures and the mitigation measures as specified in the approved EMDP; and
- Conduct internal monitoring of the implementation of the EMDP as per agreed indicators; and, prepare and submit monthly reports to GPMO on the progress and outstanding issues.

## **VIII. BUDGET AND FINANCING**

48. The PMO for each subproject will bear all costs related to EMDP implementation, if impacts on ethnic minorities are identified. Actual costs of compensation and rehabilitation will be specified in each EMDP.

49. The costs for monitoring, supervision, grievance redress, reporting and engaging the external monitor will be borne by the PMO as part of their project administration budgets. These costs will be included in the individual EMPs.

## **IX. MONITORING AND REPORTING**

50. An external safeguards monitor will be recruited by the project to ensure that all recommendations and mitigation measures under the safeguards plans including the EMDPs for each subproject are being implemented in accordance with the plans.

51. In addition, PMOs will conduct the internal monitoring of EMDP implementation to identify as early as possible the activities achieved and the cause(s) of problems encountered so that arrangements in EMDP implementation can be adjusted. Related information will be collected monthly from the field to assess the progress of EMDP implementation and will be consolidated semi-annually safeguards implementation progress report.

52. An initial key indicator will be, as per assurances to the ADB, the opinions and concerns of ethnic minorities have been addressed, the benefits of the project have been enhanced to local ethnic communities and the adverse impacts have been avoided/mitigated. The other main indicators that will be monitored regularly are:

- Fund to implement the EGDP are allocated timely and adequately;
- Payment of compensation and special assistances to ethnic people in various categories, according to the compensation and assistance policy described in approved resettlement plan;
- Public information dissemination and meaningful consultation procedures;
- Priority of APs regarding the options offered;
- All the measures/activities as envisaged in the EGDP have been implemented. Delivery of technical assistance and support for local ethnic peoples;

- Ethnic groups, particularly ethnic women, benefited from the project interventions; and adherence to grievance procedures and outstanding issues requiring management's attention.

53. The GPMP will incorporate the internal monitoring report submitted by the PMOs on the status of EMDP implementation of each subproject in the overall project progress report to ADB in the form of a report on status of EMDP implementation, semi-annually.

**ANNEXURE I:  
OUTLINE OF AN ETHNIC MINORITIES DEVELOPMENT PLAN (EMDP)**

**A. Executive Summary of the EMDP**

1. This section concisely describes the critical facts, significant findings, and recommended actions.

**B. Description of the Project**

2. This section provides a general description of the project; discusses project components and activities that may bring impacts on local ethnic groups; and identify project area.

**C. Social Impact Assessment**

3. This section:

- (i) reviews the legal and institutional framework applicable to ethnic groups in project context;
- (ii) provides baseline information on the demographic, social, cultural, and political characteristics of the affected ethnic communities; the land and territories that they have traditionally owned or customarily used or occupied; and the natural resources on which they depend;
- (iii) identifies key project stakeholders and elaborate a culturally appropriate and gender-sensitive process for meaningful consultation with ethnic groups at each stage of project preparation and implementation, taking the review and baseline information into account;
- (iv) assesses, based on meaningful consultation with the affected ethnic communities, the potential adverse and positive effects of the project. Critical to the determination of potential adverse impacts is a gender-sensitive analysis of the relative vulnerability of, and risks to, the affected ethnic communities given their particular circumstances and close ties to land and natural resources, as well as their lack of access to opportunities relative to those available to other social groups in the communities, regions, or national societies in which they live;
- (v) includes a gender-sensitive assessment of the affected ethnic groups perceptions about the project and its impact on their social, economic, and cultural status; and
- (vi) identifies and recommends, based on meaningful consultation with the affected ethnic communities, the measures necessary to avoid adverse effects or, if such measures are not possible, identifies measures to minimize, mitigate, and/or compensate for such effects and to ensure that the ethnic groups receive culturally appropriate benefits under the project.

**D. Information Disclosure, Consultation and Participation**

4. This section:

- (i) describes the information disclosure, consultation and participation process with the affected ethnic communities that was carried out during project preparation;
- (ii) summarizes their comments on the results of the social impact assessment and identifies concerns raised during consultation and how these have been addressed in project design;

- (iii) in the case of project activities requiring broad community support, documents the process and outcome of consultations with affected ethnic communities and any agreement resulting from such consultations for the project activities and safeguard measures addressing the impacts of such activities;
- (iv) describes consultation and participation mechanisms to be used during implementation to ensure ethnic people participation during implementation; and confirms disclosure of the draft and final EMDP to the affected ethnic communities.

#### **E. Beneficial Measures**

5. This section specifies the measures to ensure that the ethnic groups receive social and Economic benefits that are culturally appropriate, and gender responsive.

#### **F. Mitigation Measures**

6. This section specifies the measures to avoid adverse impacts on ethnic groups; and where the avoidance is impossible, specifies the measures to minimize, mitigate and compensate for identified unavoidable adverse impacts for each affected ethnic groups.

#### **G. Capacity Building**

7. This section provides measures to strengthen the social, legal, and technical capabilities of (i) government institutions to address ethnic groups issues in the project area; and (ii) ethnic people organizations in the project area to enable them to represent the affected ethnic people more effectively.

#### **H. Grievance Redress Mechanism**

8. This section describes the procedures to redress grievances by affected ethnic communities. It also explains how the procedures are accessible to ethnic peoples and culturally appropriate and gender sensitive.

#### **I. Monitoring, Reporting and Evaluation**

9. This section describes the mechanisms and benchmarks appropriate to the project for monitoring, and evaluating the implementation of the EGDP. It also specifies arrangements for participation of affected ethnic people in the preparation and validation of monitoring, and evaluation reports.

#### **J. Institutional Arrangement**

10. This section describes institutional arrangement responsibilities and mechanisms for carrying out the various measures of the EMDP. It also describes the process of including relevant local organizations in carrying out the measures of the EMDP.

#### **K. Budget and Financing**

11. This section provides an itemized budget for all activities described in the EMDP.

# Initial Environmental Examination (Draft)

October 2016

## PRC: Guangxi Regional Cooperation and Integration Promotion Investment Program

Prepared by the Government of Guangxi Zhuang Autonomous Region for the Asian Development Bank (ADB).

## CURRENCY EQUIVALENTS

(as of 19 October 2016)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.148
\$1.00	=	CNY6.73

## ABBREVIATIONS

ADB	-	Asian Development Bank
AP	-	affected person
AQG	-	air quality guideline
As	-	arsenic
AVG	-	average
BEZ	-	border economic zone
BOD <sub>5</sub>	-	5-day biochemical oxygen demand
C&D	-	construction and demolition
Cd	-	cadmium
CN	-	cyanide
CNY	-	Chinese yuan
CO	-	carbon monoxide
CO <sub>2</sub>	-	carbon dioxide
COD	-	chemical oxygen demand
Cr	-	chromium
Cu	-	copper
DDT	-	dichloro-diphenyl-trichloroethane
DO	-	dissolved oxygen
EA	-	executing agency
EARF	-	environmental assessment and review framework
EEM	-	external environmental monitor
EHS	-	environment, health and safety
EIA	-	environmental impact assessment
EIR	-	environmental impact report
EIRF	-	environmental impact registration form
EIT	-	environmental impact table
EMP	-	environmental management plan
EMR	-	environmental monitoring report
EMS	-	Environmental Monitoring Station
EPB	-	Environmental Protection Bureau
EPD	-	Environmental Protection Department
EPL	-	Environmental Protection Law
ESE	-	environmental supervision engineer
ESMS	-	environmental and social management system
F <sup>-</sup>	-	fluoride
FAM	-	facility administration manual
FI	-	financial intermediary
FSR	-	feasibility study report
FYP	-	five-year plan



GDP	-	gross domestic product
GPMP	-	Guangxi Foreign Loans Project Management Office
GHG	-	greenhouse gas
GMS	-	Greater Mekong Subregion
GRM	-	grievance redress mechanism
GZAR	-	Guangxi Zhuang Autonomous Region
Hg	-	mercury
I <sub>Mn</sub>	-	permanganate index
IA	-	implementation agency
IEE	-	initial environmental examination
IUCN	-	International Union for Conservation of Nature
L <sub>Aeq</sub>	-	equivalent continuous A-weighted sound pressure level
LAS	-	linear alkylbenzene sulfonate
LDI	-	local design institute
LEED	-	leadership in energy and environmental design
MEP	-	Ministry of Environmental Protection
MSW	-	municipal solid waste
N	-	nitrogen
NH <sub>3</sub> -N	-	ammonia nitrogen
Ni	-	nickel
NO <sub>2</sub>	-	nitrogen dioxide
NO <sub>x</sub>	-	nitrogen oxides
P	-	phosphorus
PAM	-	polyacryl amide
Pb	-	lead
PCR	-	project completion report
pH	-	a measure of acidity and alkalinity
PIU	-	project implementation unit
PM	-	particulate matter
PM <sub>2.5</sub>	-	particulate matter with diameter ≤ 2.5 μm
PM <sub>10</sub>	-	particulate matter with diameter ≤ 10 μm
PMC	-	project management consultant
PME	-	powered mechanical equipment
PMO	-	project management office
PO <sub>4</sub> <sup>2-</sup>	-	phosphate
PPE	-	personal protective equipment
PPP	-	public-private partnership
PPTA	-	project preparation technical assistance
PRC	-	People's Republic of China
Se	-	selenium
SEA	-	strategic environmental assessment
SME	-	small and medium enterprise
SO <sub>2</sub>	-	sulphur dioxide
SPS	-	safeguard policy statement
SS	-	suspended solid
TN	-	total nitrogen
TP	-	total phosphorus
TPH	-	total petroleum hydrocarbon
TSP	-	total suspended particulate
VOC	-	volatile organic carbon

WBG - World Bank Group  
WHO - World Health Organization  
WWTP - wastewater treatment plant  
Zn - zinc

## WEIGHTS AND MEASURES

°C	-	degree centigrade
dB(A)	-	A-weighted sound pressure level (decibel)
ha	-	hectare
kg/s	-	kilogram per second
km	-	kilometer
km <sup>2</sup>	-	square kilometer
L	-	liter
m	-	meter
m <sup>2</sup>	-	square meter
m <sup>3</sup>	-	cubic meter
m <sup>3</sup> /d	-	cubic meter per day
m <sup>3</sup> /s	-	cubic meter per second
mg	-	milligram
mg/L	-	Milligram per liter
mg/m <sup>3</sup>	-	milligram per cubic meter
min	-	minute
mm	-	millimeter
no./L	-	number of individuals per liter
t	-	metric ton
t/d	-	metric ton per day
μ or μm	-	micron or micrometer
μg	-	microgram
μg/m <sup>3</sup>	-	microgram per cubic meter

## NOTES

In the report, "\$" refers to US dollars.

This initial environmental examination is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## TABLE OF CONTENTS

I.	EXECUTIVE SUMMARY.....	1
A.	Background .....	1
B.	Project Design .....	1
C.	Project Benefits.....	4
D.	Project Impacts and Mitigation Measures.....	4
E.	Information Disclosure, Consultation and Participation .....	6
F.	Grievance Redress Mechanism .....	6
G.	Key EMP Implementation Responsibilities .....	6
H.	Risks and Key Assurances.....	7
I.	Overall Conclusion.....	7
II.	POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK .....	7
A.	Policy Framework .....	7
B.	Legal and Administrative Framework .....	9
C.	Laws, Regulations, Guidelines and Standards .....	9
D.	Evaluation Standards.....	14
E.	Assessment Area (Project Area of Influence), Assessment Period, and Evaluation Standards for the Project .....	19
F.	Justification for the Use of PRC Standards .....	20
III.	DESCRIPTION OF THE PROJECT .....	22
A.	General.....	22
B.	Project Rationale .....	23
C.	Subproject 1: Construction of Fangchenggang training center for Chinese and Vietnamese workers and SMEs .....	24
D.	Subproject 2: Development of cross-border labor cooperation demonstration park in Pingxiang BEZ.....	25
E.	Subproject 6: Expansion of Pingxiang border trade service center.....	27
F.	Capacity Development and Institutional Strengthening .....	28
G.	Climate Change Adaptation Considerations .....	29
H.	Associated Facilities .....	30
IV.	DESCRIPTION OF THE ENVIRONMENT .....	30
A.	Existing Setting of the Project Sites .....	32
B.	Existing Sensitive Receptors.....	37
C.	Physical Setting .....	44
1.	Overview of Guangxi.....	44
2.	Fangchenggang.....	44
3.	Pingxiang.....	47
D.	Biological Resources, Ecology and Biodiversity .....	51
E.	Socio-economic Conditions.....	52
1.	Fangchenggang.....	52
2.	Pingxiang.....	54
F.	Physical Cultural Resources .....	55
G.	Greenhouse Gas Emissions .....	55

V.	ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES .....	55
A.	Positive Impacts and Environmental Benefits.....	55
B.	Impacts Associated with Project Location, Planning and Design.....	57
C.	Measures during Detailed Design and Pre-Construction.....	57
D.	Impacts and Mitigation Measures during the Construction Stage.....	58
1.	Impacts and Mitigation Measures on Physical Resources.....	59
2.	Impacts and Mitigation Measures on Biological Resources, Ecology and Biodiversity .....	63
3.	Impacts and Mitigation Measures on Socio-economic Resources.....	63
E.	Impacts and Mitigation Measures during the Operational Stage .....	65
1.	Impacts and Mitigation on Air Quality .....	66
2.	Impacts and Mitigation on Water Quality .....	66
3.	Impacts and Mitigation on Solid Waste .....	67
4.	Environmental Risk from Liquid Ammonia.....	67
F.	Cumulative Impacts .....	69
G.	Indirect and Induced Impacts .....	70
VI.	ANALYSIS OF ALTERNATIVES .....	70
A.	No Project Alternative .....	70
B.	Alternatives Considered.....	70
VII.	INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION .....	70
A.	Legislative Framework for Consultation, Participation and Information Disclosure.....	70
B.	Information Disclosure .....	71
C.	Consultation and Participation during Project Preparation.....	71
D.	Future Plans for Public Participation .....	74
VIII.	GRIEVANCE REDRESS MECHANISM.....	74
IX.	ENVIRONMENTAL MANAGEMENT PLAN .....	75
A.	Objectives.....	75
B.	Organizational Structure for Environmental Management .....	75
C.	Inspection, Monitoring and Reporting.....	77
X.	CONCLUSION AND RECOMMENDATION .....	78
A.	Expected Project Benefits.....	78
B.	Adverse Impacts and Mitigation Measures.....	78
C.	Risks and Assurances.....	79
D.	Overall Conclusion.....	81

## I. EXECUTIVE SUMMARY

### A. Background

1. This initial environmental examination (IEE), which includes an environmental management plan (EMP), is prepared for the proposed Guangxi Regional Cooperation and Integration Promotion Investment Program (hereafter referred to as the project) in the People's Republic of China (PRC). The project in its present form consists of three tranches, each containing a number of subprojects. This IEE is prepared for tranche 1 with 10 subprojects. An environmental assessment and review framework (EARF) has also been prepared as a guidance document for the Guangxi Zhuang Autonomous Region (GZAR) government to prepare relevant environmental safeguard documents to meet Asian Development Bank's (ADB) environmental safeguard requirements for subprojects in subsequent tranches.
2. Regional cooperation and integration is an important means for the PRC to achieve greater integration with the global economic system. This has been highlighted as a priority in the 13<sup>th</sup> Five Year Plan (FYP) for 2016-2020<sup>1</sup>, which committed the PRC to further opening up and strengthening international and regional economic cooperation, with a special focus on its neighboring countries. The proposed project aims to support participation of Guangxi in regional cooperation and integration, especially the Greater Mekong Subregion (GMS) program, with a focus on economic corridor development. The proposed project will enhance cooperation between the PRC and Viet Nam under the GMS framework, and is expected to have high regional cooperation and integration spill-overs, benefitting also Viet Nam's northern border provinces including Quang Ninh, Lang Son and Cao Bang. Regional cooperation and integration is also an integral part of ADB operations in the PRC. It is one of the five strategic priorities of the Country Partnership Strategy 2016-2020 for the PRC<sup>2</sup>.

### B. Project Design

3. The **impacts** of the project are that economic growth potential will be realized for border areas in the PRC and Viet Nam, efficient transport and trade operations along the GMS North–South Economic Corridors achieved, and economic integration between GZAR and rest of the GMS further strengthened. The **outcome** of the project will be benefits of regional cooperation and integration in border areas of Guangxi and northern Viet Nam captured. The project will deliver five **outputs**:
  - (i) support for small and medium-sized enterprises in border areas expanded;
  - (ii) cross-border financial transactions and investments increased;
  - (iii) integrated and interoperable cross-border e-commerce platforms for the People's Republic of China and Viet Nam developed;
  - (iv) key infrastructure and trade-related services in border economic zones provided; and
  - (v) physical and informational connectivity and policy coordination improved.

---

<sup>1</sup> Government of the People's Republic of China. 2016. The 13<sup>th</sup> Five Year Plan for National Economic and Social Development.

<sup>2</sup> Asian Development Bank. 2016. Transforming partnership: People's Republic of China and Asian Development Bank, 2016-2020. Manila.

4. Tranche 1 consists of 10 subprojects located in the prefecture-level cities of Fangchenggang, Chongzuo and Baise in GZAR (Figure 1), providing training and border trade facilities, e-commerce and other border trade services platforms, and consulting studies and services to improve cross-border financial and business development service as well as project management (Table 1). Cross border issues are not a major concern for tranche 1 but will be considered and fully addressed during tranche 2 where relevant.

**Table 1: Tranche 1 Subprojects**

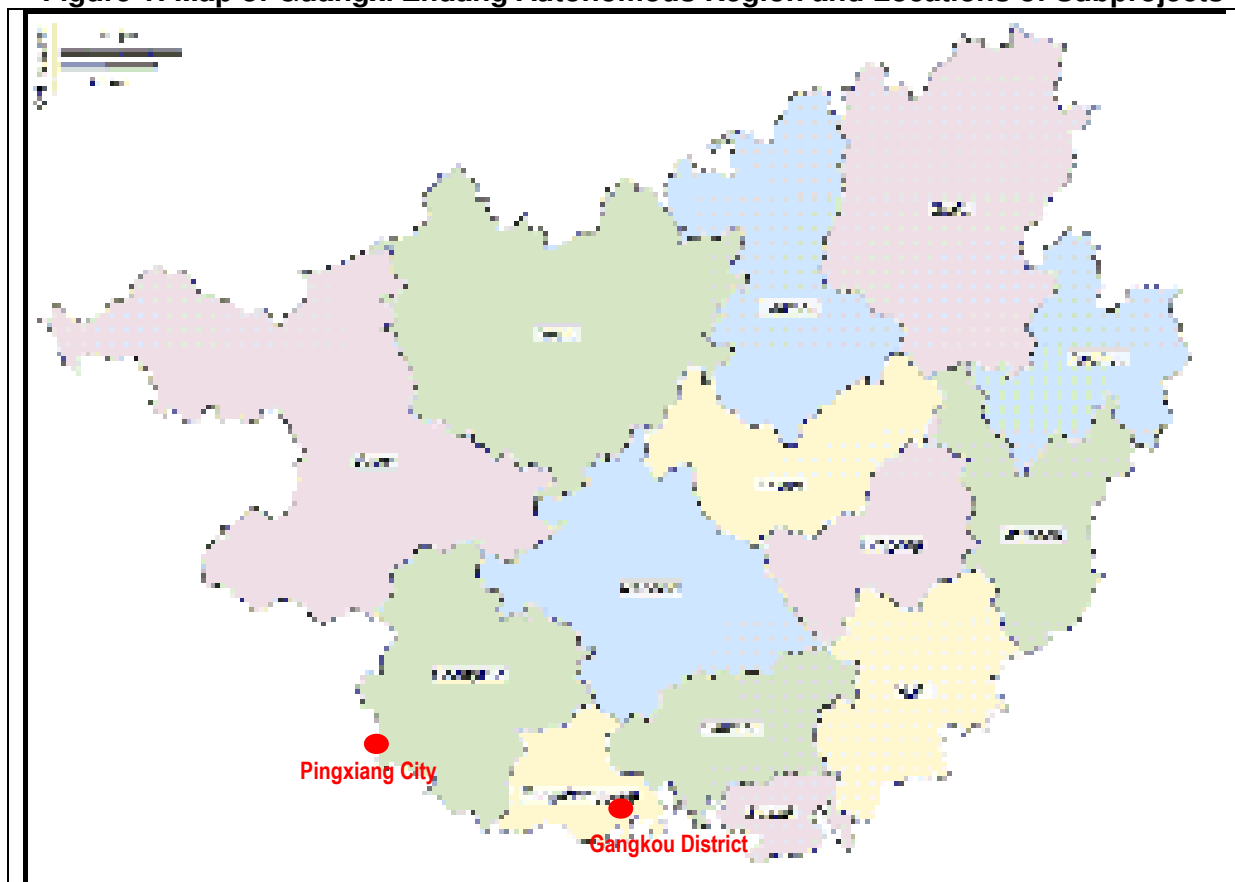
No.	Subproject Title	Summary of Subproject Content	Implementing Agency
1	Construction of Fangchenggang training center for Chinese and Vietnamese workers and SMEs 建设防城港中越劳务人员和中小企业培训基地	Construction and operation of training facilities on the school campus.	Fangchenggang City Poly Tech Vocational School 防城港市理工职业学校
2	Development of cross-border labor cooperation demonstration park in Pingxiang BEZ 建设凭祥跨境劳务合作示范园区	Construction and operation of facilities for skills development and exchange, training and offices in the PRC-Viet Nam cross-border labor cooperation demonstration park.	Pingxiang Urban Construction and Investment Company 凭祥市城市建设投资有限公司
3	Improvement of training for Vietnamese and Chinese workers and local SMEs 提供并改善越南劳工及中小企业培训服务	Provision of training for Vietnamese and Chinese workers and local SMEs in Fangchenggang, Chongzuo and Baise. Improvement of the design of training curriculum for Guangxi.	Guangxi Foreign Loans Project Management Office 广西国外贷款项目管理办公室
4	Expansion of SME financing in Guangxi 扩大广西中小企业融资	Partnership establishment with financial intermediaries to provide finance to SMEs in Guangxi, with focus in Fangchenggang, Chongzuo and Baise; and promotion of cross-border trade and investment.	Bank of Communications Nanning Branch 交通银行南宁支行
5	Development of smart port for Longbang BEZ 建设中国龙邦跨境经济合作区智慧口岸	Development of cross-border platforms for trade, transaction settlement, custom clearance and other items.	Baise Baidong Investment Company 百色百东投资有限公司
6	Expansion of Pingxiang border trade service center 扩建凭祥边民互市综合服务中心	Construction and operation of facilities for border trade market, warehouses, administration and services, and other ancillary facilities.	Pingxiang Urban Construction and Investment Company 凭祥市城市建设投资有限公司
7	Exploring PPP opportunities for improving border services 关于使用 PPP 模式改善口岸建设和服务的研究	Study on PPP options for tranche 2 subprojects and preparation of PPP subprojects.	Guangxi Foreign Loans Project Management Office 广西国外贷款项目管理办公室
8	Study on improving cross-border financial services and guarantees for noncommercial risks 关于改善跨境金融服务及非商业性投资风险担保的研究	Exploration of options for improving cross-border financial services and mitigating noncommercial risks for cross-border investment and financing.	Guangxi Foreign Loans Project Management Office 广西国外贷款项目管理办公室
9	Strengthening business development services in Guangxi 关于加强广西中小企业服务体系的研究	Demand analysis of SMEs in border areas for business development services. Capacity assessment of SME service centers. Formulation of strategy and action plan for improved business development services.	Guangxi Foreign Loans Project Management Office 广西国外贷款项目管理办公室
10	Institutional support for EA and IAs for project management and implementation 项目执行和实施机构能力建设与支持	Institutional support, capacity building and advisory assistance for tranche 1 subproject implementation and preparation of future tranches.	Guangxi Foreign Loans Project Management Office 广西国外贷款项目管理办公室

**Notes:** BEZ = border economic zone; PPP = public-private partnership; SME = small and medium enterprise

5. Subproject 4: Expansion of SME Financing in Guangxi will involve the Bank of Communications Nanning Branch as a financial intermediary (FI), and an environmental and social management system (ESMS) will be prepared for the FI under separate cover.
6. Three subprojects will involve civil works for the construction of training and cross-border trade services facilities in Fangchenggang and Chongzuo. They are:

- (i) **Subproject 1: Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs.** The subproject is located in the Gangkou District in Fangchenggang. It involves the construction of five buildings of 4-6 storeys on the existing Fangchenggang Poly Tech Vocational School campus for training in trade and commerce services, student dormitories, sports management and offices.
- (ii) **Subproject 2: Development of Pingxiang Cross-border Labor Cooperation Demonstration Park.** The subproject is located in the Youyiguan Industrial Park in Pingxiang City in Chongzuo. It involves the construction of four 4-storey buildings for use as a training center, demonstration center (for product exhibition), skill development and exchange center and offices; and one 6-storey building for staff dormitory
- (iii) **Subproject 6: Expansion of Pingxiang Border Trade Service Center.** The subproject is located in Pingxiang City in Chongzuo. It involves the construction of 13 buildings and facilities of 1 – 3 storeys for use as warehouse, border trade, custom declaration and inspection, banking, payment and account settlement, etc.

**Figure 1: Map of Guangxi Zhuang Autonomous Region and Locations of Subprojects**



7. This IEE is prepared for the above three subprojects that involve civil works, based on information provided in the corresponding feasibility study reports (FSR), environmental impact tables (EIT) and reconnaissance undertaken by the project preparation technical



assistance (PPTA) consultants.

### **C. Project Benefits**

8. This project will have the following benefits:
  - (i) Improve connectivity in the border areas of Fangchenggang, Chongzuo and Baise in GZAR thus achieving better regional cooperation and investment between the PRC and Viet Nam.
  - (ii) Strengthen the support for SME development in border areas.
  - (iii) Attract private business into border areas through provision of efficient and cost effective cross-border financial services such as access to credit and services in cross-border payments and settlements
  - (iv) Improve e-commerce platforms for cross-border trade, transaction settlement, customs clearance and other items
  - (v) Improve the transport network and road conditions in the border area, and through-put capacities at selected border control points

### **D. Project Impacts and Mitigation Measures**

9. **Air Quality and Noise.** Air and noise sensitive receptors in the vicinities of the three subprojects include ten villages with residential households and one school. Construction of subproject 1 on the Fangchenggang Poly Tech Vocational School campus would also affect the staff and students in the existing classrooms and dormitories. Dust and noise during the construction stage will need to be mitigated to reduce potential impacts to these sensitive receptors. Night time (from 22:00 to 06:00 hour) construction will be prohibited. Dust suppression and noise reduction measures during construction have been specified in the environmental management plan (EMP).
10. Operation of subproject 2, the training facilities and demonstration centre, will involve training on reprocessing and finishing of small home appliances, red wood furniture and nut product drying. Sanding, polishing and paint spraying activities in the classrooms would generate air pollutants such as volatile organic carbon (VOC), fine dust particulates and smoke that would have potential health and safety impacts to the students and teachers. Personal protection equipment (PPE) such as safety glasses, goggles, respirators and ear plugs will be provided to the teachers and students. The classrooms will also be designed with activated carbon absorbent and fabric bags to prevent VOC and fine dust from escaping into the ambient atmosphere.
11. Subproject 6, expansion of Pingxiang Border Trade Service Center, will include development of cold storage warehouse which will use liquid ammonia as a coolant. Liquid ammonia upon accidental leakage would evaporate and form ammonia gas that is an irritant and is toxic at high concentrations. The maximum storage of liquid ammonia at the cold storage will be limited to five tons at any given time, below the threshold of 10 tons for the facility to be deemed as a "major source of danger". Environmental risk assessment undertaken by the EIT using numerical modeling to predict the dispersion of ammonia gas upon accidental leakage indicated that the impact would be confined to the first 20 minutes after leakage and within a distance of 26 m from the point of leakage. Workers within 26 m of the liquid ammonia storage room would be affected and the EMP has specified the provision of respirator and goggles in the liquid ammonia storage room for workers entering and working

inside the room. None of the nearby villages would be affected. The location of the cold storage warehouse on site was also revised as a result of the EIT assessment, providing buffer distances of at least 300 m from sensitive receptors that are downwind of the highest frequency summer wind and 150 m from sensitive receptors in other wind directions. The design for liquid ammonia storage will be in accordance with requirements for the storage and containment of hazardous waste.

12. **Water Quality.** Process wastewater and muddy runoff on construction sites would be collected and treated using sedimentation tanks. The supernatant would be used for site cleaning and dust suppression and would not be discharged. Domestic wastewater from construction workers would be treated with septic tanks on site. Domestic wastewater generated during operation of these facilities would be treated by wastewater treatment system on site. Subproject 1 has an underground wastewater treatment system on campus, whilst for subprojects 2 and 6 wastewater will be discharged to public sewers for treatment at nearby wastewater treatment plants. Wastewater from canteens would first go through oil-water separation before being discharged to sewers.
13. **Solid Waste.** Construction and demolition waste would be reused and recycled on site where practicable. Those that cannot be reused would be transported to storage or disposal centers designated by the local construction authorities. The quantities of refuse generated by construction workers on construction sites are small and would be collected regularly by local sanitation bureaus for proper disposal. Small quantities of municipal solid waste generated during operation of the facilities would also be collected regularly by local sanitation bureaus for proper disposal. Training of students on reprocessing and finishing of small home appliance in subproject 2 could produce small quantities of chemical waste, metal scraps and oily clothes. These would be collected by companies that are licensed for the collection, transportation and treatment of chemical waste.
14. **Biological Resources.** The subproject sites have been assessed in the EITs to have low ecological value. The facilities for subproject 1 will be constructed on the existing Fangchenggang Poly Tech Vocational School campus where the site has already been cleared of vegetation. Vegetation on the other two sites mainly consists of common and planted trees, shrubs and grassland. Ecological surveys and literature review by the design institutes who prepared the EITs did not reveal the presence of flora and fauna species on these sites or within the project area of influence that are under provincial, national, or international protection. These sites are not located in protected areas or critical habitats. The total land take for the three subprojects is small, approximately 16.3 ha. Upon completion of civil works, the sites will be landscaped to improve amenity and aesthetic value for users and the environment. Potential impact on biological resources and ecology is anticipated to be minimal.
15. **Physical Cultural Resources.** Assessment undertaken revealed the absence of physical cultural resources as defined in ADB's Safeguard Policy Statement (SPS, 2009) within the project area of influence of the subproject sites. Should buried artifacts of archaeological significance be uncovered during construction within the project areas, construction will be stopped and immediately reported to the local cultural bureaus in accordance with the PRC's *Cultural Relics Protection Law* (2002) and the *Cultural Relics Protection Law Implementation Ordinance* (2003).
16. **Occupational Health and Safety.** As described above, teachers and students in the

training facility in subproject 2 could be exposed to VOC and fine dust particulates, and workers in and near the liquid ammonia storage room in subproject 6 could be exposed to ammonia gas if an accidental leakage occurs. The EMP has specified the provision of training and PPE to these individuals for occupational health and safety protection.

17. **Climate Change and Adaptation Measures.** Climate risk and vulnerability assessment conducted for the three subprojects indicates that potential climate change impacts would include heavy rainfall causing flooding and landslide, sea level rise and heatwaves. Hard (engineering) and soft adaptation measures are recommended for consideration during detailed design.

#### **E. Information Disclosure, Consultation and Participation**

18. Public consultation in the form of discussion forums were conducted by the PPTA consultants on the three subprojects involving civil works in August 2016. One meeting was held in Fangchenggang for subproject 1, and two meetings were held in Pingxiang for subprojects 2 and 6, respectively. Approximately 60 people participated in the three meetings representing local village communities, enterprises and government departments. Information on subproject scopes, ADB's environmental safeguard requirements, potential environmental impacts and mitigation measures, environmental management plan (EMP) and grievance redress mechanism (GRM) was disclosed and discussed during the meetings. All participants supported the subprojects. Most of the concerns expressed by the participants were related to potential dust, noise and water quality impacts during construction; and wastewater discharge during operation. The local project management offices (PMO) and PPTA consultants advised affected persons how the concerns raised would be addressed, as documented in Chapter VII Information Disclosure, Consultation and Participation.

#### **F. Grievance Redress Mechanism**

19. This report and the EMP describe a project grievance redress mechanism to document and resolve complaints from affected persons. The GRM will be coordinated by the project management office (PMO), who will set up a complaint center with a hotline for receiving environmental and resettlement grievances which will be accessible to diverse members of the community, including vulnerable groups such as women and youth. Multiple points of entry and modes of access, including face-to-face meetings, written complaints, telephone conversations, or e-mail will be available.

#### **G. Key EMP Implementation Responsibilities**

20. The GZAR government is the executing agency (EA) and has established the PMO, who on behalf of the EA will be responsible for the day-to-day management of the project. The PMO will have overall responsibility for supervision of the implementation of environmental mitigation measures, coordinate the project level GRM, and report to ADB. PMO will appoint a staff member as an environment focal point to supervise the effective implementation of the EMP and to coordinate the project level GRM. PMO will engage the technical engineering design institutes, hire the project management consultant (PMC), and manage the procurement process. To ensure that the contractors comply with the EMP provisions, the PMO will ensure that the environmental contract clauses listed in the EMP will be

incorporated into all civil works tender documents and contracts. PMO will prepare annual environment monitoring reports (EMR) with assistance from the external environmental monitor (EEM) under the PMC service and submit the EMRs to ADB.

21. The implementing agencies (IA) for the three subprojects will consist of two project implementation units (PIU). The Fangchenggang Poly Tech Vocational School will be the PIU for subproject 1. The Pingxiang Urban Construction and Investment Company will be the PIU for subprojects 2 and 6. The PIUs will each appoint a staff member as the environmental focal point to coordinate and ensure the implementation of the EMP. Each PIU will engage an external environmental supervision engineer (ESE) for independent compliance monitoring of EMP implementation. The PIUs will contract the local environmental monitoring stations (EMS) to implement environmental quality monitoring in accordance with the environmental monitoring program in the EMP.

#### **H. Risks and Key Assurances**

22. The main project risks include the low institutional capacity of the PMO, PIUs, and contractors and their failure to implement the EMP effectively during construction and operational stages. These risks will be mitigated by (i) providing training in environmental management and monitoring, (ii) appointing qualified PMC and qualified environmental focal points, (iii) following appropriate project implementation monitoring and mitigation arrangements, and (iv) ADB conducting project implementation review missions.
23. Key assurances cover ADB environmental safeguard requirements during project implementation. The EMP also includes a list of environmental contract clauses for incorporation into all civil works tender documents and contracts, thus making the implementation of environmental mitigation measures during construction legally binding for the contractors.

#### **I. Overall Conclusion**

24. This IEE shows that potential environmental impacts can be reduced to acceptable levels with appropriate mitigation. The EMP has specified mitigation measures to be implemented and responsible parties, and how the impacts are to be monitored during construction and operation. The project will have positive benefits in achieving better regional cooperation and investment between the PRC and Viet Nam by improving the skills of Chinese and Vietnamese workers and SMEs, improving the hardware and software for cross-border trade and commerce, and strengthening the support for SME development in the border areas of GZAR.

## **II. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK**

### **A. Policy Framework**

25. **Regional Perspective.** The Greater Mekong Subregion (GMS) Cooperation Program envisions a subregion that is more integrated, prosperous and equitable. This vision is pursued through a “3C” strategy of enhancing connectivity, improving competitiveness, and promoting a greater sense of community. To implement this strategy, the GMS countries have adopted an economic corridor approach whereby transport corridors will be expanded,

trade and investment promoted, and economic growth stimulated. The PRC and Viet Nam are active participants in developing the GMS North-South Economic Corridor.

26. As one of the two PRC provinces directly involved in the GMS cooperation, Guangxi has formulated a strategy and action plan for participation in the GMS program<sup>3</sup>. The medium term plan aims to (i) further enhance connectivity with the rest of the GMS; (ii) accelerate development of economic corridors with a special focus on developing border economic zones in partnership with Viet Nam; and (iii) further improve trade and investment facilitation to promote cross-border economic activities.
27. The proposed project aims to support participation of Guangxi in regional cooperation and integration, especially the GMS program, with a focus on economic corridor development. The proposed project will enhance cooperation between the PRC and Viet Nam under the GMS framework, and is expected to have high regional cooperation and integration spill-overs, benefitting also Viet Nam's northern border provinces including Quang Ninh, Lang Son and Cao Bang.
28. **PRC Perspective.** Regional cooperation and integration is an important means for the PRC to achieve greater integration with the global economic system. This has been highlighted as a priority in the 13<sup>th</sup> Five Year Plan (FYP) for 2016-2020<sup>4</sup>, which committed the PRC to further opening up and strengthening international and regional economic cooperation, with a special focus on its neighboring countries.
29. In 2015, the PRC announced plans to develop the so-called Silk Road Economic Belt and 21<sup>st</sup> Century Maritime Silk Road (the Belt and Road Initiative)<sup>5</sup>. This strategic initiative aims to promote connectivity and strengthen economic partnerships between and among Asian, European and African continents in the spirit of open regionalism. It cites five priorities for cooperation: (i) fostering economic and development policy coordination; (ii) strengthening connectivity by developing energy, transport and telecommunication infrastructure and harmonizing standards; (iii) promoting trade and investment through customs, sanitary and phyto-sanitary cooperation, implementation of World Trade Organization's *Trade Facilitation Agreement*, and development of economic zones and industry clusters; (iv) deepening financial cooperation and integration; and (v) promoting people-to-people exchanges. To implement the Belt and Road Initiative, Guangxi has developed its own action plan with special emphasis on strengthening cooperation with the members of the ASEAN, particularly the GMS countries<sup>6</sup>.
30. **ADB Perspective.** Regional cooperation and integration is an integral part of ADB operations in the PRC. It is one of the five strategic priorities of the Country Partnership Strategy 2016-2020 for the PRC<sup>7</sup>.

---

<sup>3</sup> Government of the Guangxi Zhuang Autonomous Region. 2014. Strategy and action plan for participation in the Greater Mekong Subregion Economic Cooperation Program, 2014-2022. Nanning.

<sup>4</sup> Government of the People's Republic of China. 2016. The 13<sup>th</sup> Five Year Plan for National Economic and Social Development.

<sup>5</sup> National Development Reform Commission, Ministry of Foreign Affairs, and Ministry of Commerce. 2015. Vision and actions on jointly building the Silk Road Economic Belt and the 21<sup>st</sup> Century Maritime Silk Road. Issued on 28 March 2015 with authorization from the State Council of the PRC.

<sup>6</sup> Government of the Guangxi Zhuang Autonomous Region. 2016. Recommendations on implementing the initiative of building Silk Road Economic Belt and 21<sup>st</sup> Century Maritime Silk Road. Nanning.

<sup>7</sup> Asian Development Bank. 2016. Transforming partnership: People's Republic of China and Asian Development

## B. Legal and Administrative Framework

31. The administrative framework for environmental impact assessment (EIA) in the PRC consists of national, provincial, and local (city and county) environmental protection authorities. The national authority is the Ministry of Environmental Protection (MEP), which promulgates laws, regulations, administrative decrees, technical guidelines, and environmental quality and emission standards on EIA and pollution prevention and control. At the provincial level are the Environmental Protection Departments (EPD), acting as the gatekeeper for EIA and pollution prevention and control in the province. They are often delegated the authority by MEP to approve EIA reports for development planning and construction projects in the provinces, except those with national interest and those that cross provincial boundaries that would need MEP approval. The local (city or county level) Environmental Protection Bureaus (EPB) enforce environmental laws and conduct environmental monitoring within city or county limits. Local EPBs could be delegated the authority to approve EIA reports by the provincial EPDs.
32. EPDs and EPBs are supported by Environmental Monitoring Stations (EMS), which are subsidiaries of EPDs or EPBs and are qualified entities to carry out environmental monitoring<sup>8</sup>. The PRC has a qualification and registration system for EIA and only qualified and registered institutes and individuals are allowed to undertake EIA. Under the recently issued *Management Measures for the Qualification of Environmental Impact Assessment for Construction Projects* (MEP decree [2015] No. 36), qualified institutes for conducting EIAs for construction projects in the PRC can no longer be a subsidiary of an environmental authority responsible for approving domestic environmental impact reports or tables as of 1 November 2015.

## C. Laws, Regulations, Guidelines and Standards

33. **PRC Requirements.** Table lists the PRC's environmental laws, regulations, decrees, guidelines, and standards relevant to this project. These comprehensive requirements cover environmental protection and impact assessment; pollution prevention and control of air, noise, water, ecology and solid waste; and are supported by technical guidelines and standards for assessing atmospheric, noise, water, and ecological impacts.

**Table 2: Relevant PRC Laws, Regulations, Decrees, Guidelines, and Standards**

Laws	
1	<i>Water Pollution Prevention and Control Law</i> , 1984 (amended in 2008) 《中华人民共和国水污染防治法》2008 修订
2	<i>Wild Animal Protection Law</i> , 1988 (amended in 2004) 《中華人民共和國野生動物保護法》2004 修订
3	<i>Environmental Protection Law</i> , 1989 (amended in 2014) 《中华人民共和国环境保护法》2014 修订
4	<i>Soil and Water Conservation Law</i> , 1991 (amended in 2010) 《中华人民共和国水土保持法》2010 修订
5	<i>Labor Law</i> , 1994 《中华人民共和国劳动法》1994
6	<i>Solid Waste Pollution Prevention and Control Law</i> , 1995 (amended in 2004) 《中华人民共和国固体废物污染防治法》2004 修订
7	<i>Environmental Noise Pollution Prevention and Control Law</i> , 1996 《中华人民共和国环境噪声污染防治法》1996
8	<i>Atmospheric Pollution Prevention and Control Law</i> , 2000 (amended in 2015) 《中华人民共和国大气污染防治法》2015 修订
9	<i>Occupational Disease Prevention and Control Law</i> , 2001 《中华人民共和国职业病防治法》2001

Bank, 2016-2020. Manila.

<sup>8</sup> In this report, "environmental monitoring" refers to the activity of collecting environmental data either through *in-situ* measurements or through sampling followed by laboratory testing of samples.

10	<i>Water Law, 2002</i> 《中华人民共和国水法》2002
11	<i>Environmental Impact Assessment Law, 2002</i> 《中华人民共和国环境影响评价法》2002
12	<i>Cultural Relics Protection Law, 2002</i> 《中华人民共和国文物保护法》2002
<b>Regulations</b>	
13	<i>Natural Reserve Ordinance, 1994</i> 《中华人民共和国自然保护区条例》1994
14	<i>Wild Plant Protection Ordinance 1996</i> 《中华人民共和国野生植物保护条例》1996
15	<i>Construction Project Environmental Protection Management Ordinance, 1998</i> 《中华人民共和国建设项目环境保护管理条例》1998
16	<i>Cultural Relics Protection Law Implementation Ordinance, 2003</i> 《中华人民共和国文物保护法实施条例》2003
17	<i>Plan Environmental Impact Assessment Ordinance, 2009</i> 《中华人民共和国规划环境影响评价条例》2009
<b>Decrees and Announcements</b>	
18	<i>Circular on Strengthening the Management of Environmental Impact Assessment for Construction Projects Financed by International Financial Organizations, (MEP Announcement [1993] No.324)</i> 《关于加强由国际金融机构提供资金的建设项目的环境影响评估管理的通知》环发[1993]324号
19	<i>Management Measures for Inspection and Acceptance of Environmental Protection at Construction Project Completion (MEP Decree [2001] No. 13 and 2010 Amendment)</i> 《建设项目竣工环境保护验收管理办法》环令[2001]13号; 2010修改
20	<i>Specifications on the Management of Urban Construction and Demolition Waste (Ministry of Construction Decree [2005] No. 139)</i> 《城市建筑垃圾管理规定》建设部令[2005]139号
21	<i>Management Procedures for the Supervision, Inspection and Environmental Acceptance of Construction Projects under the "Three Simultaneities" (on trial) (MEP Announcement [2009] No. 150)</i> 《环境保护部建设项目“三同时”监督检查和竣工环保验收管理规程(试行)的通知》环发[2009]150号
22	<i>Management Measures for Operation of the Environmental Complaint Hotline (MEP Decree [2010] No. 15)</i> 《环保举报热线工作管理办法》环令[2010]15号
23	<i>Opinion from the State Council on Important Tasks for Strengthening Environmental Protection (State Council Announcement [2011] No. 35)</i> 《国务院关于加强环境保护重点工作的意见》国发[2011]35号
24	<i>Measures for Environmental Supervision (MEP Decree [2012] No. 21)</i> 《环境监察办法》环境保护部令[2012]21号
25	<i>Requirement for Preparation of Environmental Impact Report Summary (MEP Announcement [2012] No. 51)</i> 《建设项目环境影响报告书简本编制要求》环告[2012]51号
26	<i>Announcement on Stepping Up the Strengthening of Environmental Impact Assessment Management for Prevention of Environmental Risk (MEP Announcement [2012] No. 77)</i> 《关于进一步加强环境影响评价管理防范环境风险的通知》环发[2012]77号
27	<i>Atmospheric Pollution Prevention and Control Action Plan (State Council Announcement [2013] No. 37)</i> 《大气污染防治行动计划》国发(2013)37号
28	<i>Policy on Integrated Techniques for Air Pollution Prevention and Control of Small Particulates (MEP Announcement [2013] No. 59)</i> 《环境空气细颗粒物污染综合防治技术政策》环发[2013]59号
29	<i>Guideline on Government Information Disclosure of Construction Project Environmental Impact Assessment (on trial) (MEP Announcement [2013] No. 103)</i> 《建设项目环境影响评价政府信息公开指南》环办[2013]103号
30	<i>Directory for the Management of Construction Project Environmental Impact Assessment Categorization (MEP Decree [2015] No. 33)</i> 《建设项目环境影响评价分类管理名录》环令[2015]33号
31	<i>Measures for Public Participation in Environmental Protection (MEP Decree [2015] No. 35)</i> 《环境保护公众参与办法》环令[2015]35号
32	<i>Management Measures for Environmental Impact Post Assessment of Construction Projects (on trial) (MEP Decree [2015] No. 37)</i> 《建设项目环境影响后评价管理办法(试行)》环令[2015]37号
<b>Guidelines</b>	
33	<i>HJ 2.1-2011 Technical Guidelines for Environmental Impact Assessment – General Program</i> 《环境影响评价技术导则 总纲》
34	<i>HJ 2.2-2008 Guidelines for Environmental Impact Assessment – Atmospheric Environment</i> 《环境影响评价技术导则 大气环境》
35	<i>HJ/T 2.3-93 Technical Guidelines for Environmental Impact Assessment – Surface Water Environment</i> 《环境影响评价技术导则 地面水环境》
36	<i>HJ 2.4-2009 Technical Guidelines for Noise Impact Assessment</i> 《环境影响评价技术导则 声环境》
37	<i>HJ 19-2011 Technical Guidelines for Environmental Impact Assessment – Ecological Impact</i> 《环境影响评价技术导则 生态影响》
38	<i>HJ 130-2014 Technical Guidelines for Plan Environmental Impact Assessment - General Principles</i> 《规划环境影响评价技术导则 总纲》
39	<i>HJ 192-2015 Technical Criterion for Ecosystem Status Evaluation</i> 《生态环境状况评价技术规范》

40	HJ/T 393-2007 <i>Technical Specifications for Urban Fugitive Dust Pollution Prevention and Control</i> 《防治城市扬尘污染技术规范》
41	HJ 610-2011 <i>Technical Guidelines for Environmental Impact Assessment – Groundwater Environment</i> 《环境影响评价技术导则 地下水环境》
42	HJ 616-2011 <i>Guidelines for Technical Review of Environmental Impact Assessment on Construction Projects</i> 《建设项目环境影响技术评估导则》
43	HJ 623-2011 <i>Standard for the Assessment of Regional Biodiversity</i> 《区域生物多样性评价标准》
44	HJ 630-2011 <i>Technical Guideline on Environmental Monitoring Quality Management</i> 《环境监测质量管理技术导则》
45	HJ 663-2013 <i>Technical Regulation for Ambient Air Quality Assessment (on trial)</i> 《环境空气质量评价技术规范（试行）》
46	HJ 710.1-2014 <i>Technical Guidelines on Biodiversity Monitoring - Terrestrial Vascular Plants</i> 《生物多样性观测技术导则-陆生维管植物》
47	HJ 710.2-2014 <i>Technical Guidelines on Biodiversity Monitoring - Lichens and Bryophytes</i> 《生物多样性观测技术导则-地衣和苔藓》
48	HJ 710.3-2014 <i>Technical Guidelines on Biodiversity Monitoring - Terrestrial Mammals</i> 《生物多样性观测技术导则-陆生哺乳动物》
49	HJ 710.4-2014 <i>Technical Guidelines on Biodiversity Monitoring - Birds</i> 《生物多样性观测技术导则-鸟类》
50	HJ 710.5-2014 <i>Technical Guidelines on Biodiversity Monitoring - Reptiles</i> 《生物多样性观测技术导则-爬行动物》
51	HJ 710.6-2014 <i>Technical Guidelines on Biodiversity Monitoring - Amphibians</i> 《生物多样性观测技术导则-两栖动物》
52	HJ 710.7-2014 <i>Technical Guidelines on Biodiversity Monitoring - Inland Water Fish</i> 《生物多样性观测技术导则-内陆水域鱼类》
53	HJ 710.8-2014 <i>Technical Guidelines on Biodiversity Monitoring - Freshwater Benthic Macroinvertebrates</i> 《生物多样性观测技术导则-淡水底栖大型无脊椎动物》
54	HJ 710.9-2014 <i>Technical Guidelines on Biodiversity Monitoring - Butterflies</i> 《生物多样性观测技术导则-蝴蝶》
55	JG/J 146-2004 <i>Environmental and Hygiene Standards for Construction Sites</i> 《建筑施工现场环境与卫生标准》
56	<i>Technical Guidelines for Environmental Impact Assessment - Public Participation (public comment version)</i> , (January 2011) 《环境影响评价技术导则 公众参与》(征求意见稿)2011
<b>Standards</b>	
57	GB 3095-2012 <i>Ambient Air Quality Standards</i> 《环境空气质量标准》
58	GB 3096-2008 <i>Environmental Quality Standard for Noise</i> 《声环境质量标准》
59	GB 3838-2002 <i>Environmental Quality Standards for Surface Water</i> 《地表水环境质量标准》
60	GB 8978-1996 <i>Integrated Wastewater Discharge Standard</i> 《污水综合排放标准》
61	GB 10070-88 <i>Standard of Environmental Vibration in Urban Area</i> 《城市区域环境振动标准》
62	GB 12523-2011 <i>Emission Standard of Environmental Noise for Boundary of Construction Site</i> 《建筑施工场界环境噪声排放标准》
63	GB/T 14529-93 <i>Principle for Categories and Grades of Nature Reserves</i> 《自然保护区类型与级别划分原则》
64	GB 14554-93 <i>Emission Standards for Odor Pollutants</i> 《恶臭污染物排放标准》
65	GB/T 14848-93 <i>Quality Standard for Ground Water</i> 《地下水质量标准》
66	GB/T 15190-2014 <i>Technical Specifications for Regionalizing Environmental Noise Function</i> 《声环境功能区划分技术规范》
67	GB 15618-1995 <i>Environmental Quality Standard for Soils</i> 《土壤环境质量标准》
68	GB 16297-1996 <i>Air Pollutant Integrated Emission Standards</i> 《大气污染物综合排放标准》
69	GB 22337-2008 <i>Emission Standard for Community Noise</i> 《社会生活环境噪声排放标准》
70	GB 50118-2010 <i>Design Specifications for Noise Insulation of Buildings for Civil Use</i> 《民用建筑隔声设计规范》

34. **Environmental Protection.** The most far-reaching law on pollution prevention and control is the *Environmental Protection Law* (EPL) (1989, amended in 2014) (item #3 in Table 2). When promulgated in 1989, it set out key principles for the nation’s pollution control system, including the policy known as the “Three Simultaneities,”<sup>9</sup> the application of pollution levy, and requirements for EIA. The EPL was amended in 2014 and the amended EPL took effect on 1 January 2015. The implementation of “Three Simultaneities” was further strengthened by the decree on its management procedures (items #19 and #21) and the *Construction*

<sup>9</sup> The “Three Simultaneities Policy” requires the design, construction, and operation of pollution control and treatment facilities to occur simultaneously with the project design, construction, and operation.



*Project Environmental Protection Management Ordinance* (item #15).

35. Public Participation and Environmental Information Disclosure provisions are among the most significant changes introduced in the amended EPL, further supported by the decrees on the preparation of EIA summaries for the purpose of public disclosure (item #25), information disclosure on construction project EIAs by government (item #29), method for public participation in environmental protection (item #31), and technical guidelines (for comment) for public participation in EIAs (item #56).
36. The amended EPL further defines enforcement and supervision responsibilities of all levels of environmental protection authorities, imposes stricter obligations and more severe penalties on enterprises and construction units regarding pollution prevention and control, and allows for environmental public interest litigation including through nongovernment organizations. The procedures and requirements for the technical review of EIA reports by authorities have been specified (item #43). Environmental inspection and enforcement on design, installation, and operation of project-specific environmental protection and control measures are regulated under the “Three Simultaneities” (items #3, #15, #19, #21, and #24).
37. For grievance redress, a hotline number 12369 has been established at each level of environmental protection authority throughout the nation since March 2011 for receiving and resolving environmental complaints in accordance with the *Management Measures for Operation of the Environmental Complaint Hotline* (MEP Decree [2010] No. 15) (item #22).
38. The EPL also provides protection for community health, with protection of occupational health and safety provided by the *Labor Law* (1994) (item #5), the *Occupational Disease Prevention and Control Law* (2001) (item #9), and environmental and hygiene standards for construction sites (item #55).
39. **Environmental Impact Assessment.** EIA is governed by the *Environmental Impact Assessment Law* (2002) (item #11), covering EIAs for (i) plans (such as new development areas and new industrial parks) and strategic studies which could also be deemed as strategic environmental assessments (SEA), and (ii) construction projects. This was followed by the promulgation of two regulations: the *Construction Project Environmental Protection Management Ordinance* (1998) (item #15) and the *Plan Environmental Impact Assessment Ordinance* (2009) (item #17). Both require early screening and environmental categorization.
40. A recent MEP decree, the *Directory for the Management of Construction Project Environmental Impact Assessment Categorization* (MEP Decree [2015] No. 33) (item #30), classifies EIAs for construction projects into three categories with different reporting requirements, based on the “significance” of potential environmental impact due to the project and the environmental sensitivity of the project site as described in this directory. An EIR is required for construction projects with potential significant environmental impacts. An EIT is required for construction projects with less significant environmental impacts. An EIRF is required for construction projects with the least significant environmental impacts. Environmentally sensitive areas, as defined in the Decree, include three categories: (i) nature reserves and protected areas, scenic areas, world cultural and natural heritage sites, drinking water source protection zones; (ii) basic farmland and grassland, forest parks, geological parks, important wetland, natural woodland, critical habitats for endangered plant and animal species, important aquatic spawning/nursery/ wintering/migration grounds, regions suffering from water resource shortage, serious soil erosion areas, desertification

protection areas, eutrophic water bodies; and (iii) inhabited areas with major residential, health care, scientific research, and administration functions, cultural heritage protection sites, and protection areas with historical, cultural, scientific, and ethnic values.

41. **Follow-Up Actions on Environmental Impact Assessment.** In 2015, MEP issued a decree, *Management Measures for Environmental Impact Post Assessment of Construction Projects* (MEP decree [2015] No. 37) (item #32) to have, on a trial basis and effective 1 January 2016, follow-up actions between 3 to 5 years after commencement of project operation for large infrastructure and industrial projects or projects located in environmentally sensitive areas. Such actions would include environmental monitoring and impact assessment to verify the effectiveness of environmental protection measures and to undertake any corrective actions that might be needed. The decree also specifies that the institute that does the original impact assessment for the project cannot undertake environmental impact post assessment for the same project.
42. **Guidelines and Standards.** MEP has issued a series of technical guidelines for preparing EIAs. These include impact assessment guidelines on general EIA program and principles (items #33 and #38), atmospheric environment (item #34) and ambient air quality (item #46), noise (item #36), surface water (item #35), ground water (item #41), ecology (items #37 and #39) and regional biodiversity (item #43), biodiversity monitoring of various biota (items #46 to #54), quality management on environmental monitoring (item #44), and public participation (item #56). Standards issued by MEP generally consist of environmental quality (ambient) standards (applicable to the receiving end) and emission standards (applicable to the pollution source). The former includes standards for ambient air quality (item #57), noise (item #58) and vibration (item #61), surface water (item #59), groundwater (item #65), soil (item #67), etc. The latter includes standards for integrated wastewater discharge (item #60), construction noise (item #62) and community noise (item #69), odor (#64) and air pollutants (#68), etc.
43. **ADB Environmental Safeguard Requirements.** The proposed project is classified as category B for environment for tranche 1 subprojects as it is considered that the tranche 1 subprojects are unlikely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. This project therefore requires the preparation of an IEE report for tranche 1 which includes an EMP. ADB's SPS 2009 requires a number of considerations that are over and above the domestic EIR or EIT requirements. These include, among others, (i) project risks and respective mitigation measures and project assurances; (ii) project-level GRM; (iii) definition of the project area of influence; (iv) consideration of physical cultural resources; (v) climate change mitigation and adaptation; (vi) occupational and community health and safety requirements; (vii) economic displacement that is not part of land acquisition; (viii) consideration of biodiversity conservation and natural resources management requirements; (ix) provision of justification if local environmental quality standards are used; (x) meaningful consultation and participation; and (xi) implementation schedule and (measurable) performance indicators in the EMP. An environmental assessment and review framework (EARF) has been prepared to guide the EA in conducting rapid environmental assessment for categorization and in preparation of EIA or IEE for tranches 2 and 3.
44. **Relevant International Agreements.** The PRC is a signatory to a number of international agreements relevant to environment protection. Those relevant to the project, along with the dates of signing by the PRC, are listed in Table 3.

**Table 3: International Agreements with the PRC as a Signatory**

No.	Name of Agreement	PRC Signing Date	Agreement Objective
1	<i>Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat</i>	1975.12.21	To stem the progressive encroachment on and loss of wetlands now and in the future, recognizing the wetlands' ecological functions and their economic, cultural, scientific, and recreational values
2	<i>Montreal Protocol on Substances That Deplete the Ozone Layer</i>	1989.01.01	To protect the ozone layer by controlling emissions of substances that deplete it
3	<i>Convention on Biological Diversity</i>	1993.12.29	To develop national strategies for the conservation and sustainable use of biological diversity
4	<i>United Nations Framework Convention on Climate Change</i>	1994.03.21	To achieve stabilization of greenhouse gas concentrations in the atmosphere at a low enough level to prevent dangerous anthropogenic interference with the climate system
5	<i>United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification</i>	1996.12.26	To combat desertification and mitigate the effects of drought through national action programs that incorporate long-term strategies supported by international cooperation and partnership arrangements
6	<i>Kyoto Protocol to the United Nations Framework Convention on Climate Change</i>	2005.02.23	To further reduce greenhouse gas emissions by enhancing the national programs of developed countries aimed at this goal and by establishing percentage reduction targets for the developed countries

#### D. Evaluation Standards

45. In the PRC, ambient conditions of air, noise, and water quality in the project area determine the appropriate category of emissions and effluent standards for the construction and operational phases of built infrastructure. The World Bank Group (WBG) Environmental Health and Safety (EHS) guidelines<sup>10</sup> (see below) are based on international best practice construction and operational procedures. Both the PRC standards and EHS guidelines are used in the assessments.
46. **Air Quality.** The PRC ranks air quality into two classes according to its *Ambient Air Quality Standard* (GB 3095-2012). Class I standard applies to nature reserves, scenic areas, and regions requiring special protection. Class II standard applies to residential areas, mixed residential/commercial areas, cultural areas, industrial zones, and rural areas. The ambient air quality in the assessment area of this project has been assigned to meet GB 3095-2012 Class II standards. The WBG adopted the World Health Organization (WHO) standards for its EHS standards for air quality.
47. On 10 September 2013, the State Council announced the *Atmospheric Pollution Prevention and Control Action Plan* for the PRC (State Council Announcement [2013] No. 37) (see Table 1, item #34). The action plan sets 2017 targets on reducing PM<sub>10</sub> emissions in prefecture level cities by more than 10%; PM<sub>2.5</sub> emissions by approximately 25%, 20% and 15% in Beijing-Tianjin-Hebei region, Yangtze River Delta, and Pearl River Delta respectively; and controlling annual average PM<sub>2.5</sub> levels in Beijing at around 60 µg/m<sup>3</sup>. Among the 35 actions identified and described in the plan, the followings are relevant to this project:

<sup>10</sup> World Bank Group. 2007. Environmental, health and safety guidelines-General EHS guidelines. Washington, DC

- (i) Strengthen control of aerial sources of pollution including controlling dust pollution during construction;
- (ii) Strictly implement total emission pollution control on SO<sub>2</sub>, NO<sub>x</sub>, dust, and volatile organics as a pre-requisite in approving construction project EIRs;
- (iii) Optimize spatial pattern in urban and new district planning to facilitate better air pollutant dispersion;
- (iv) Strengthen laws, regulations and standards on controlling air pollution;
- (v) Strengthen capacities in environmental management and supervision system;
- (vi) Increase environmental regulatory enforcement;
- (vii) Implement environmental information disclosure;
- (viii) Strictly enforce accountability;
- (ix) Establish monitoring warning system;
- (x) Develop contingency plan; and
- (xi) Adopt timely contingency measures for public health protection during serious air pollution events.

48. The WHO established air quality guideline (AQG) standards for various air quality parameters for the protection of public health. Yet recognizing that progressive actions are needed to achieve these standards and the financial and technological limitations of some countries, cities or localities especially in developing countries, the WHO also established interim targets as intermediate milestones towards achieving the AQG.

49. Table 4 compares PRC's GB 3095–2012 *Ambient Air Quality Standards* and the World Bank Group's EHS standard which has adopted the WHO AQG. The longer averaging period such as 1 year is more applicable to assessing impacts from multiple as well as regional sources; while shorter averaging periods such as 24 hours and 1 hour are more applicable to assessing short-term impacts from project-related activities, such as from peak hour traffic or daily or peak construction activities.

**Table 4: Comparison of PRC and WBG Ambient Air Quality Standards**

Air Quality Parameter	Averaging Period	PRC GB 3095-2012 (µg/m <sup>3</sup> )		WHO/World Bank Group EHS <sup>11</sup> (µg/m <sup>3</sup> )	
		Class I	Class II	Interim Targets	AQG
SO <sub>2</sub>	1-year	20	60	n/a	n/a
	24-hour	50	150	50 - 125	20
	1-hour	150	500	n/a	n/a
TSP	1-year	80	200	n/a	n/a
	24-hour	120	300	n/a	n/a
PM <sub>10</sub>	1-year	40	70	30 - 70	20
	24-hour	50	150	75 - 150	50
PM <sub>2.5</sub>	1-year	15	35	15 - 35	10
	24-hr	35	75	37.5 - 75	25
NO <sub>2</sub>	1-year	40	40	n/a	40
	24-hour	80	80	n/a	n/a
	1-hour	200	200	n/a	200
CO	24-hour	4,000	4,000	n/a	n/a
	1-hour	10,000	10,000	n/a	n/a

Note: n/a = not available

<sup>11</sup> World Bank Group 2007, *ibid.*

50. The following observations are made comparing PRC and WBG ambient air quality standards as shown in Table 4, showing that WBG interim targets are comparable to PRC's GB 3095–2012 Class II standards:
- (i) 24-hr SO<sub>2</sub>: upper limit of EHS interim target (125 µg/m<sup>3</sup>) is more stringent than GB Class II standard (150 µg/m<sup>3</sup>);
  - (ii) 24-hour PM<sub>10</sub>: the upper limit of the EHS interim target (125 µg/m<sup>3</sup>) is the same as GB Class II standard;
  - (iii) 24-hr PM<sub>2.5</sub>: the upper limit of the EHS interim target (75 µg/m<sup>3</sup>) is the same as GB Class II standard; and
  - (iv) 24-hour NO<sub>2</sub>: the EHS AQG (200 µg/m<sup>3</sup>) is the same as GB Class II standard.
51. Emission standards of fugitive particulate matter (such as dust) from construction sites are regulated under the PRC's *Air Pollutant Integrated Emission Standard* (GB 16297–1996). For particulate matter, the maximum allowable emission concentration is 120 mg/m<sup>3</sup> and the concentration limit at the boundary of construction sites is ≤ 1.0 mg/m<sup>3</sup>, with no specification on the particulate matter's particle diameter.
52. **Noise.** GB 3096–2008 categorizes five functional areas based on their tolerance to noise pollution: from Category 0 to Category 4. Category 0 is for areas with convalescent facilities that are the least tolerant to noisy environment and therefore has the most stringent day and night time noise standards. Category 1 is for areas predominated by residential areas, hospitals and clinics, educational institutions, and research centers. Category 2 is for areas with mixed residential and commercial functions. Category 3 is for areas with industrial production and storage and logistics functions. Category 4 is for regions adjacent to traffic noise sources such as major roads and railways, and is subdivided into 4a and 4b with the former applicable to major road (road class II and above) and marine traffic noise, and the latter applicable to rail noise.
53. Standards for various functional area categories are compared with the WBG's EHS guidelines in Table 5, showing that the EHS guidelines have lower noise limits for residential, commercial, and industrial mixed areas but higher noise limits for industrial areas. The EHS guidelines do not have separate noise limits for major roads but apply the same noise limits based on whether the areas are for residential or industrial use.

**Table 5: Environmental Quality Standards for Noise [ $L_{Aeq}$ : dB(A)]**

Noise Functional Area Category	Applicable Area	GB 3096-2008 Standards		WBG EHS <sup>12</sup> Standards	
		Day 06:00-22:00	Night 22:00-06:00	Day 07:00-22:00	Night 22:00-07:00
0	Areas needing extreme quiet, such as convalescence areas	50	40	55	45
1	Areas mainly for residence, hospitals, cultural and educational institutions, administration offices	55	45		
2	Residential, commercial and industrial mixed areas	60	50		
3	Industrial areas, warehouses and logistic parks	65	55	70	70
4a	Area within 35 m on both sides of trunk road (class II and above)	70	55	55	45

54. The PRC's *Emission Standard of Environmental Noise for Boundary of Construction Site* (GB 12523–2011) regulates construction noise, limiting construction noise levels at the construction site boundary to 70 dB(A) in the day time (0600–2200 hours) and 55 dB(A) at night (2200–0600 hours). The WBG does not have standards for construction noise *per se*, but applies the same noise standards listed in Table 5 above to the receptors during construction activities.

55. **Surface Water Quality.** For water quality assessment, the determining standard is the PRC's *Environmental Quality Standards for Surface Water* (GB 3838–2002) (Table 6). It defines five water quality categories for different environmental functions. Category I is the best, suitable for head waters and national nature reserves. Category II is suitable for drinking water sources in Class I protection areas, habitats for rare aquatic organisms, breeding grounds for fish and crustaceans, and feeding grounds for fish fry. Category III is suitable for drinking water sources in Class II protection areas, wintering grounds for fish and crustaceans, migration routes, water bodies for aquaculture and capture fishery, and swimming activities. Category IV is suitable for general industrial use and non-contact recreational activities. Category V is the worst which is only suitable for agricultural and scenic water uses.

**Table 6: Environmental Quality Standards for Surface Water GB 3838–2002**

Parameter	Water Quality Category				
	I	II	III	IV	V
pH	6 ~ 9	6 ~ 9	6 ~ 9	6 ~ 9	6 ~ 9
Dissolved oxygen (DO) [mg/L]	90% saturation or $\geq 7.5$	$\geq 6$	$\geq 5$	$\geq 3$	$\geq 2$
Permanganate index ( $I_{Mn}$ ) [mg/L]	$\leq 2$	$\leq 4$	$\leq 6$	$\leq 10$	$\leq 15$
Chemical oxygen demand (COD) [mg/L]	$\leq 15$	$\leq 15$	$\leq 20$	$\leq 30$	$\leq 40$
5-day Biochemical oxygen demand ( $BOD_5$ ) [mg/L]	$\leq 3$	$\leq 3$	$\leq 4$	$\leq 6$	$\leq 10$
Ammonia nitrogen ( $NH_3-N$ ) [mg/L]	$\leq 0.15$	$\leq 0.5$	$\leq 1.0$	$\leq 1.5$	$\leq 2.0$
Total phosphorus (as P) [mg/L]	$\leq 0.02$	$\leq 0.1$	$\leq 0.2$	$\leq 0.3$	$\leq 0.4$
Lakes & reservoirs	$\leq 0.01$	$\leq 0.025$	$\leq 0.05$	$\leq 0.1$	$\leq 0.2$
Total nitrogen (lakes, reservoirs, as N) [mg/L]	$\leq 0.2$	$\leq 0.5$	$\leq 1.0$	$\leq 1.5$	$\leq 2.0$
Copper (Cu) [mg/L]	$\leq 0.01$	$\leq 1.0$	$\leq 1.0$	$\leq 1.0$	$\leq 1.0$
Zinc (Zn) [mg/L]	$\leq 0.05$	$\leq 1.0$	$\leq 1.0$	$\leq 2.0$	$\leq 2.0$
Fluoride (as F) [mg/L]	$\leq 1.0$	$\leq 1.0$	$\leq 1.0$	$\leq 1.5$	$\leq 1.5$
Selenium (Se) [mg/L]	$\leq 0.01$	$\leq 0.01$	$\leq 0.01$	$\leq 0.02$	$\leq 0.02$

<sup>12</sup> World Bank Group 2007, *ibid*.

Parameter	Water Quality Category				
	I	II	III	IV	V
Arsenic (As) [mg/L]	≤0.05	≤0.05	≤0.05	≤0.1	≤0.1
Mercury (Hg) [mg/L]	≤0.0005	≤0.0005	≤0.0001	≤0.001	≤0.001
Cadmium (Cd) [mg/L]	≤0.001	≤0.005	≤0.005	≤0.005	≤0.01
Chromium (Cr, hexavalent) [mg/L]	≤0.01	≤0.05	≤0.05	≤0.05	≤0.1
Lead (Pb) [mg/L]	≤0.01	≤0.01	≤0.05	≤0.05	≤0.1
Cyanide (CN) [mg/L]	≤0.005	≤0.05	≤0.2	≤0.2	≤0.2
Volatile phenol [mg/L]	≤0.002	≤0.002	≤0.005	≤0.01	≤0.1
Total petroleum hydrocarbon (TPH) [mg/L]	≤0.05	≤0.05	≤0.05	≤0.5	≤1.0
Anionic surfactant (=LAS) [mg/L]	≤0.2	≤0.2	≤0.2	≤0.3	≤0.3
Sulfide [mg/L]	≤0.05	≤0.1	≤0.2	≤0.5	≤1.0
Fecal coliform bacteria [number/L]	≤200	≤2000	≤10000	≤20000	≤40000

56. Discharge of wastewater from construction sites is regulated under the PRC's *Integrated Wastewater Discharge Standard* (GB 8978–1996) (Table 7). Class 1 standard applies to discharge into Category III water bodies under GB 3838–2002. Class 2 standard applies to discharge into categories IV and V water bodies. Class 3 standard applies to discharge into municipal sewers going to municipal wastewater treatment plants (WWTPs) with secondary treatment. No new discharge of wastewater into Categories I and II water bodies is allowed. The WBG does not have ambient water quality standard, and recognizes the use of national and local ambient water quality criteria for EHS purpose.

**Table 7: Standards for Discharging Wastewater from Construction Sites GB 8978–1996**

Parameter		Class 1	Class 2	Class 3
		(for discharging into Category III water body)	(for discharging into Categories IV and V water body)	(for discharging into municipal sewer)
pH	no unit	6 ~ 9	6 ~ 9	6 ~ 9
SS	mg/L	70	150	400
BOD <sub>5</sub>	mg/L	20	30	300
COD	mg/L	100	150	500
TPH	mg/L	5	10	20
Volatile phenol	mg/L	0.5	0.5	2.0
NH <sub>3</sub> -N	mg/L	15	25	---
PO <sub>4</sub> <sup>2-</sup> (as P)	mg/L	0.5	1.0	---
LAS (= anionic surfactant)	mg/L	5.0	10	20

57. **Soil Quality.** Soil quality in the PRC is divided into three classes according to the *Environmental Quality Standard for Soils* (GB 15618-1995). Class 1 represents the best and Class 3 the worst (Table 8). The WBG does not have EHS standards for soil quality.

**Table 8: Soil Quality Standard GB 15618-1995**

Parameter	Soil pH	Maximum Allowable Concentration (mg/kg dry weight)				
		Class 1	Class 2		Class 3	
		Back ground	<6.5	6.5~7.5	>7.5	>6.5
Cadmium (Cd)		0.20	0.30	0.30	0.60	1.0
Mercury (Hg)		0.15	0.30	0.50	1.0	1.5
Arsenic (As)	Paddy	15	30	25	20	30
	Dry land	15	40	30	25	40
Copper (Cu)	Farm land	35	50	100	100	400
	Orchard	---	150	200	200	400
Lead (Pb)		35	250	300	350	500
Chromium (Cr)	Paddy	90	250	300	350	400
	Dry land	90	150	200	250	300
Zinc (Zn)		100	200	250	300	500

Parameter	Maximum Allowable Concentration (mg/kg dry weight)					
	Soil pH	Class 1	Class 2		Class 3	
		Back ground	<6.5	6.5~7.5	>7.5	>6.5
Nickel (Ni)		40	40	50	60	200
DDT		0.05	0.50			1.0
666 (Lindane)		0.05	0.50			1.0

### E. Assessment Area (Project Area of Influence), Assessment Period, and Evaluation Standards for the Project

58. The assessment area, or the project area of influence, was determined based on potential impact distances of various environmental parameters, the assessment levels assigned by the local environmental authorities for various environmental media, and guidance provided in the PRC's series of Technical Guidelines for EIA (see Table 2, items #33-37). Table 9 shows the assessment areas and the PRC evaluation standards adopted for this project. A comparison of the PRC standards with internationally accepted standards (as defined in the World Bank's Environment Health and Safety Guidelines) was conducted for the IEE. The comparison confirmed that the PRC standards are either internationally accepted or have comparable standard limits with most of the international standards.

**Table 9: Assessment Area and PRC Evaluation Standards Adopted for this Project**

Type of Standard	Environmental Media	Applicable PRC Standard	Project Area of Influence
Environmental quality standard	Ambient air quality	Class II standard in <i>Ambient Air Quality Standard</i> (GB 3095-2012)	Up to 200 m beyond the "footprint" of the permanent and temporary land take areas
	Noise	Functional Area Category 2 standard in <i>Environmental Quality Standard for Noise</i> (GB 3096-2008)	Up to 200 m beyond the "footprint" of the permanent and temporary land take areas
	Surface water quality	Categories III, IV and V standards in <i>Environmental Quality Standards for Surface Water</i> (GB 3838-2002) depending on the water quality category of the water body.	Up to 300 m beyond the "footprint" of the permanent and temporary land take areas
	Ecology	No numerical standard. Assessment based on <i>Technical Guidelines for Environmental Impact Assessment – Ecological Impact</i> (HJ 19-2011)	"Footprint" of the permanent and temporary land take areas
	Physical cultural resources	No numerical standard but controlled under PRC's <i>Cultural Relics Protection Law</i> and <i>Cultural Relics Protection Law Implementation Ordinance</i> .	"Footprint" of the permanent and temporary land take areas
	Occupational health and safety	No numerical standard but controlled under PRC's <i>Labor Law</i> and <i>Environmental and Hygiene Standards for Construction Sites</i> (JG/J 146-2004)	Construction sites within the "footprint" of the permanent and temporary land take areas
	Community health and safety	No numerical standard	Up to 200 m beyond the "footprint" of the permanent and temporary land take areas
Pollutant emission standard	Air pollutant	<i>Air Pollutant Integrated Emission Standard</i> (GB 16297-1996), Class II and fugitive emission standards	Construction sites within the "footprint" of the permanent and temporary land take areas
	Noise	<i>Emission Standard of Environmental Noise for Boundary of Construction Site</i> (GB 12523-2011)	Construction sites within the "footprint" of the permanent and temporary land take areas
	Wastewater	<i>Integrated Wastewater Discharge Standard</i> (GB 8978-1996): (i) Class 1 standard for	Construction sites within the "footprint" of the permanent and temporary land



Type of Standard	Environmental Media	Applicable PRC Standard	Project Area of Influence
		discharging into Category III water bodies; (ii) Class 2 standard for discharging into Categories IV and V water bodies; (iii) Class 3 standard for discharging into municipal sewers; (iv) No discharge into Categories I and II water bodies.	take areas during construction. Effluent discharge standards for the facilities during operation

59. The assessment period covers both construction (ranging from seven to twenty-two months) and operation (first three years after commissioning) stages of the subprojects with civil works proposed for Tranche 1. For subproject 1: Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs, the construction duration for the whole campus would take approximately 24 months, and the construction of the subproject facilities would take approximately 12 months within this period. For subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone, the construction duration would take approximately 22 months. For subproject 6: Expansion of Pingxiang Border Trade Service Center, the construction duration would take approximately seven months.

#### F. Justification for the Use of PRC Standards

60. ADB's *Safeguard Policy Statement (2009)* requires projects to apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's *Environmental, Health and Safety Guidelines*. Table 9 compares PRC standards with the World Bank Group's EHS guidelines, and concludes that the application of PRC legislated standards was justified. The justification is based on several observations:

61. The World Bank Group's EHS guidelines endorses the use of internationally recognized standards in case of absence of national legislated standards. In this project, this clause applies to ambient air quality and ambient water quality standards: (i) The General EHS Guidelines on Air Emissions and Ambient Air Quality state that "Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should [apply] national legislated standards, or in their absence, the current WHO Air Quality Guidelines or other internationally recognized sources". The availability of national legislated standards overrides the adoption of other internationally recognized standards; (ii) The General EHS Guidelines on Air Emissions and Ambient Air Quality state that "Projects with significant sources of air emissions, and potential for significant impacts to ambient air quality, should prevent or minimize impacts by ensuring that emissions do not result in pollutant concentrations that reach or exceed relevant ambient quality guidelines and standards by applying national legislated standards, or in their absence, the current WHO Air Quality Guidelines or other internationally recognized sources". The availability of national legislated standards overrides the adoption of other internationally recognized standards.

62. **Some PRC standards are more stringent than internationally accepted standards.** PRC standards of relevance to the project include ambient CO and NO<sub>2</sub> concentrations (Table 10).

63. **PRC standards are not always comparable to standards suggested in the World Bank**

**Group's EHS Guidelines.** Some ambient air quality standards, including NO<sub>2</sub> and H<sub>2</sub>S, are defined for different time periods (exposures), and are thus not directly comparable (see Table 9). PRC ambient acoustic quality standards are defined for categories as well as by taking into consideration influencing factors such as road and rail traffic, and are different to the classification of the World Health Organization that does not take influencing factors into consideration. As standard limits are not significantly different (e.g. noise levels), a shift to alternate classifications or time periods, which would require an adaptation of the monitoring procedures by nationally accredited monitoring stations, does not seem to be justified.

64. **Some PRC standards are not defined in the World Bank Group's EHS Guidelines.** Internationally accepted standards for NH<sub>3</sub> and TSP, which are defined in PRC ambient air quality standards, could not be identified. Other parameters which could not be compared to international standards include surface and marine water quality standards.

**Table 10: Comparison of PRC Standards with World Bank Group's EHS Guideline**

Parameter	PRC standards	International standards	Remarks
<b>Ambient Air Quality</b>	<b>GB-3095-2012</b>	<b>WHO Air Quality Guidelines Global Update (2005); USEPA</b>	
TSP	0.12 mg/m <sup>3</sup> (Class I, 24h) 0.30 mg/m <sup>3</sup> (Class II, 24h)	WHO: No standard USEPA: No standard	<i>No comparison possible</i>
CO	4.0 mg/m <sup>3</sup> (Class I, 24h) 4.0 mg/m <sup>3</sup> (Class II, 24h)	WHO: No standard USEPA: 10 mg/m <sup>3</sup>	<i>PRC standard is more stringent than USEPA</i>
NO <sub>2</sub>	0.08 mg/m <sup>3</sup> (Class I, 24h) 0.08 mg/m <sup>3</sup> (Class II, 24h) 0.20 mg/m <sup>3</sup> (Class I, 1h) 0.20 mg/m <sup>3</sup> (Class II, 1h)	WHO: 0.04 mg/m <sup>3</sup> (365d); 0.20 mg/m <sup>3</sup> (1h) USEPA: 0.14 mg/m <sup>3</sup> (24h)	<i>PRC and WHO standards are either not compatible given the different time periods, or the same for same time period. PRC standard is more stringent than USEPA standard</i>
PM <sub>10</sub>	0.05 mg/m <sup>3</sup> (Class I, 24h) 0.15 mg/m <sup>3</sup> (Class II, 24h)	WHO: 0.05 mg/m <sup>3</sup> (24h) USEPA: 0.15 mg/m <sup>3</sup> (24h)	<i>PRC standards are comparable to EPA standard.</i>
<b>Ambient Acoustic Quality Standard</b>	<b>GB-3096-2008</b>	<b>World Health Organization (1999)</b>	
L <sub>Aeq</sub> (dBA)	45/55 (night/day, Category 1) 50/60 (night/day, Category 2) 55/65 (night/day, Category 3) 55/70 (night/day, Category 4a) 60/70 (night/day, Category 4b)	Class I: 45/55 (night/day) Class II: 70/70 (night/day)	<i>WHO Class I: Residential, institutional, educational WHO Class II: Industrial, commercial</i>
<b>Surface Water Quality Standard</b>	<b>GB-3838-2002</b>		<i>No comparable standard identified/suggested in the EHS guideline</i>
COD	15 mg/L (Category II) 20 mg/L (Category III) 30 mg/L (Category IV)		
NH <sub>3</sub> -N	0.5 mg/L (Category II) 1.0 mg/L (Category III) 1.5 mg/L (Category IV)		
TP	0.1 mg/L (Category II) 0.2 mg/L (Category III) 0.3 mg/L (Category IV)		

Parameter	PRC standards	International standards	Remarks
<b>Sea Water Quality Standard</b>	<b>GB-3097-1997</b>		<i>No comparable standard identified/suggested in the EHS guideline</i>
COD	2 mg/L (Category I) 3 mg/L (Category II) 4 mg/L (Category III) 5 mg/L (Category IV)		
Inorganic. N	0.2 mg/L (Category I) 0.3 mg/L (Category II) 0.4 mg/L (Category III) 0.5 mg/L (Category IV)		
Active P	0.015 mg/L (Category I) 0.030 mg/L (Category II) 0.030 mg/L (Category III) 0.045 mg/L (Category IV)		
<b>Noise Standards for Industrial Enterprise Boundary</b>	<b>GB 12348-2008</b>	<b>World Health Organization (1999)</b>	<i>WHO Class I: Residential, institutional, educational WHO Class II: Industrial, commercial</i>
L <sub>Aeq</sub> (dBA)	55/45 (day/night, Class I) 60/50 (day/night, Class II) 65/55 (day/night, Class III) 70/55 (day/night, Class IV)	Class I: 45/55 (night/day) Class II: 70/70 (night/day)	
<b>Noise Limits for Construction Sites</b>	<b>GB 12523-1990</b>	<b>USEPA</b>	
L <sub>Aeq</sub> (dBA)	75/55 (Earth works, day/night) 85 (Pile driving, day; banned for night) 70/55 (Structural works, day/night) 65/55 (Exterior and interior finishing works, day/night)	85 (day, 8h exposure)	

### III. DESCRIPTION OF THE PROJECT

#### A. General

65. The proposed project consists of 10 subprojects in Tranche 1 (see Table 1). Of these, subprojects 1, 2 and 6 will involve the construction and operation of facilities/buildings during which potential environmental impacts could be generated. The other seven subprojects will involve the provision of equipment and services in existing facilities, consulting studies and consulting services which would not have potential environmental impacts. This IEE and attached EMP therefore focus on assessing and mitigating potential environmental impacts during construction and operation of the facilities in subprojects 1, 2 and 6. For subproject 4 which involves the Bank of Communications Nanning Branch as a financial intermediary (FI), an environmental and social management system (ESMS) will be developed for the FI under separate cover.
66. Table 11 shows domestic environmental assessment reporting and approval for the three subprojects with construction activities. Three environmental impact tables (EITs) have been prepared in accordance with the requirements in the *Directory for the Management of Construction Project Environmental Impact Assessment Categorization* (MEP Decree [2015] No. 33) (item #30 in Table 2). The approval authorities for these EITs are the respective city EPBs. This IEE is prepared based on information provided in these EITs, feasibility study

reports (FSRs) for these three subprojects, as well as site reconnaissance by the PPTA consultants.

**Table 11: Domestic Environmental Assessment Reporting for Tranche 1 Subprojects**

Tranche 1 Subproject		Reporting Category	Preparation		Approval	
No.	Title		By	Date	By	Date
1	Construction of Fangchenggang training center for Chinese and Vietnamese workers and SMEs 建设防城港中越劳务人员和中小企业培训基地	EIT (for whole campus)	Fangchenggang Environmental Science Research Institute 防城港市环境科学研究所	April 2013	Fangchenggang EPB	2013.05.28
2	Development of cross-border labor cooperation demonstration park in Pingxiang BEZ 建设凭祥跨境劳务合作示范园区	EIT	Hunan Lvhong Environmental Technology Co. Ltd. 湖南绿鸿环境科技有限责任公司	August 2016	Pingxiang EPB	2016.10.12
6	Expansion of Pingxiang border trade service center 扩建凭祥边民互市综合服务中心	EIT	Hunan Lvhong Environmental Technology Co. Ltd. 湖南绿鸿环境科技有限责任公司	May 2016	Pingxiang EPB	2016.07.27

**Notes:** BEZ = border economic zone; EIT = environmental impact table; EPB = Environmental Protection Bureau; SME = small and medium enterprise

Source: EITs

## B. Project Rationale

67. **Unrealized Potential in Regional Cooperation and Investment.** The border areas of both the PRC and Viet Nam have been identified as key areas of accelerated development, taking advantage of opportunities offered by regional cooperation and investment, particularly in terms of improving cross-border connectivity and promoting cross-border economic activities. However, opportunities for regional cooperation and investment in the border areas of Guangxi and its neighboring provinces in Viet Nam have not been fully tapped. This has resulted in inefficient transport and trade operations along the GMS North-South Economic Corridor and unrealized economic growth potential in the border areas and beyond in both Guangxi and northern Viet Nam. This project will improve connectivity in these border areas thus achieving better regional cooperation and investment.
68. **Difficulties in Attracting Investment for Small and Medium Enterprises (SMEs) in Border Areas.** SMEs are generally less developed in border areas with weaker capacities and competitiveness, especially in their start-up phases. They have limited access to bank credit and often have difficulties in hiring and retaining managerial staff and skilled labor. This project will provide support to help these SMEs operate in border areas, develop growth strategies, train Chinese and Vietnamese workers, and improve their organizational and management capacities. Business development services are a critical element in supporting SME development in border areas, which will be strengthened via this project.
69. **Limitations in Cross-border Financial Transactions and Investments.** Cash remains the dominant means of concluding cross-border transactions, relying on families as the major source of borrowing capital. This limits financial transactions and investments. This project aims to attract private businesses into border areas through provisions of efficient and cost effective cross-border financial services such as access to credit and services in cross-border payments and settlements.

70. **Difficulties in Adopting New Technologies.** New technologies such as e-commerce are important for accessing markets at and beyond borders. Guangxi still faces constraints in cross-border e-commerce development. These constraints include (i) high start-up costs and technological complexities discouraging investments in e-commerce; (ii) fragmented market without market leaders to provide demonstration effect; (iii) lack of dedicated e-commerce parks to provide one-stop services covering information and communications technology, payment and settlement, logistics and customs clearance; and (iv) weak capacity in terms of lack of trained professionals and actual practitioners with sufficient knowledge of international best practices. This project will improve the e-commerce platforms for cross-border trade, transaction settlement, customs clearance and other items.
71. **Poor Connectivity in Linking Key Economic Points of Interest across the Border.** While physical connectivity between Guangxi and Viet Nam has been generally improved in recent years, there are still gaps in cross-border transport links. These include (i) the lack of expressways or high-grade trunk roads linking the economic enters in Guangxi and Viet Nam; (ii) low density and poor conditions of feeder roads in the border area, particularly those linking the border economic zones on both sides of the border; and (iii) insufficient number of border bridges with low through-put capacity. This project will improve the transport network and road conditions in the border area, and through-put capacities at selected border control points.

**C. Subproject 1: Construction of Fangchenggang Training Center for Chinese and Vietnamese workers and SMEs**

72. This subproject is located in the existing Jiangshan Peninsula Science and Technology Park in Gangkou District in Fangchenggang. Five buildings will be constructed using ADB loan on the existing campus of the Fangchenggang Poly Tech Vocational School. These consist of a training building with classrooms for training Chinese and Vietnamese workers on trade, logistics, e-commerce and hotel and tourism services; two student dormitories; a comprehensive information building with library and offices for teachers and administration; and a sports management office (Table 12). Total floor area is 35,077.80 m<sup>2</sup>, taking up 6,844.77 m<sup>2</sup> land area. Figure 2 shows the layout of the campus and the locations of the subproject buildings on the campus.
73. Building design will include features to accommodate those with disabilities in accordance with GB50763-2012 *Codes for Accessibility Design* 《无障碍设计规范》 as well as energy saving features. Water will be supplied by the municipal water supply network. Water heating for the student dormitories will use solar energy and air source heat pump. The drainage system will separate rain water and wastewater. Rainwater will be collected by the rain water collection pipelines and discharged into nearby drainage ditches. Septic tanks will be installed at each building to treat domestic wastewater generated by the teachers and students in each building, then conveyed to an underground package wastewater treatment plant on campus with a treatment capacity of 2,500 m<sup>3</sup>/d for treatment to Class 1 effluent standard in *Integrated Wastewater Discharge Standard* (GB 8978-1996) before discharging via the municipal sewer network to the sea at Xiwan. Raw materials would consist of common building materials that will be sourced locally.

**Table 12: Description of Buildings for Subproject 1**

Building Name	No. Storey	Floor Area (m <sup>2</sup> )	Land Take (m <sup>2</sup> )
Training building #3	5	6,973.60	1,399.50
Student dormitory #3	6	7,327.80	1,239.50
Student dormitory #4	6	7,327.80	1,239.50
Comprehensive information building	6 + 1 underground	11,658.60	2,576.27
Sports management and auxiliary office	4	1,790.00	390.00
	<b>Total:</b>	<b>35,077.80</b>	<b>6,844.77</b>

Source: FSR

**Figure 2: Locations of Subproject Buildings on the Fangchenggang Poly Tech Vocational School Campus**



Source: FSR

**D. Subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone**

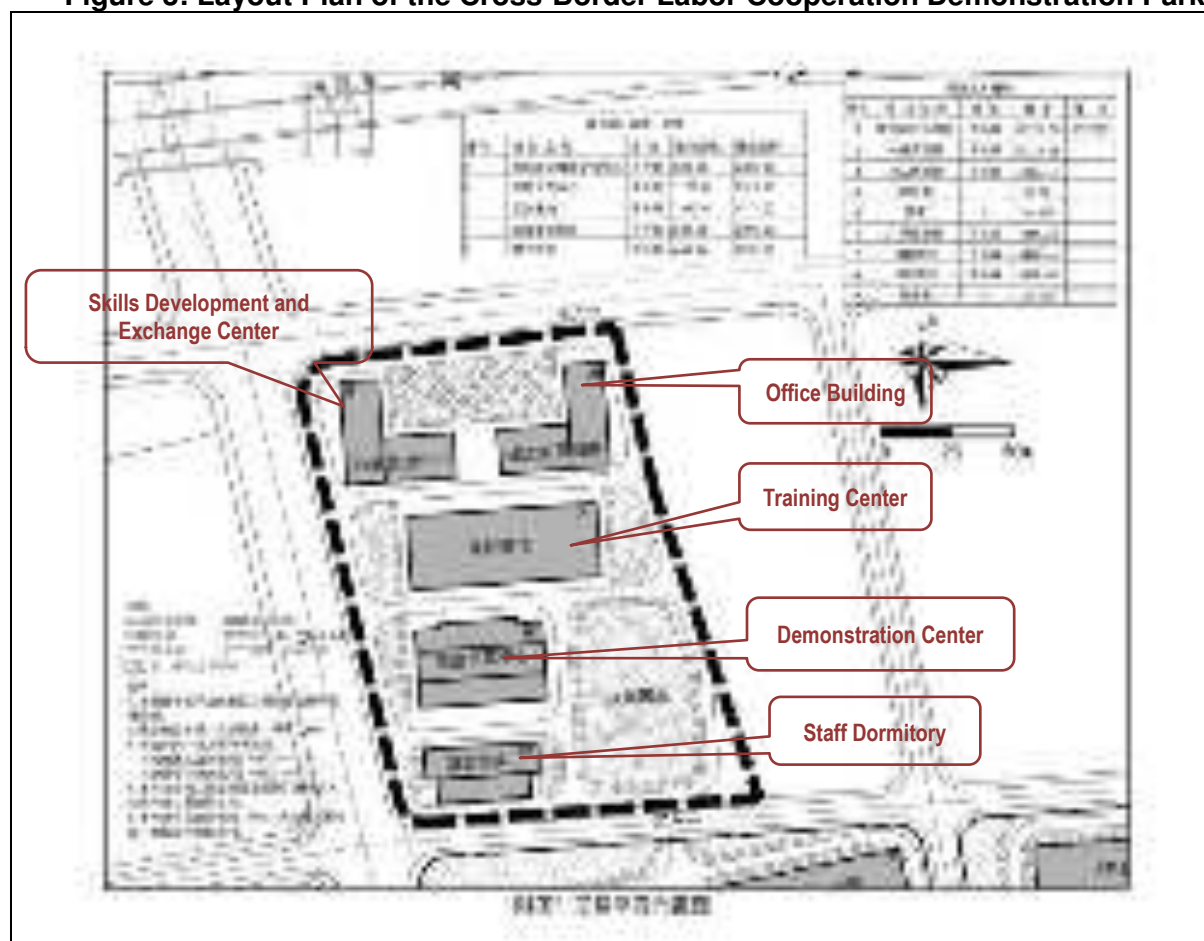
74. This subproject is located in the existing Youyiguan Industrial Park within the Pingxiang

Border Economic Zone, in Pingxiang City which is under the administration of Chongzuo. Total land take for the park is 17,999 m<sup>2</sup> (1.8 ha), within which five buildings with total floor area of 16,226.56 m<sup>2</sup> will be constructed on land areas of 5,058.46 m<sup>2</sup> as shown in Table 13. Construction of these buildings including fitting out is estimated to take approximately 22 months. The demonstration park will have approximately 50 staff and 2,000 students. Training and skills development and exchange will involve finishing processes on small household electrical appliances, redwood (imported legally) furniture and different kinds of nuts. Figure 3 shows the layout of the demonstration park.

**Table 13: Description of Buildings for Subproject 2**

Building Name	Land Take (m <sup>2</sup> )	Floor Area (m <sup>2</sup> )	No. of Storey	Building Structure
Demonstration center (for product exhibition)	1,175.00	3,525.00	3	Steel
Training center	1,590.40	4,771.20	3	Steel
Business offices	830.00	2,000.00	3	Brick & concrete
Skills development and exchange center	830.00	2,000.00	3	Brick & concrete
Staff dormitory	655.06	3,930.36	6	Brick & concrete
<b>Total:</b>	<b>5,080.46</b>	<b>16,226.56</b>		

**Figure 3: Layout Plan of the Cross-Border Labor Cooperation Demonstration Park**



Source: EIT

75. Building design will include features to accommodate those with disabilities in accordance with GB50763-2012 *Codes for Accessibility Design* 《无障碍设计规范》 as well as energy saving features. Water usage has been estimated to be 175.4 m<sup>3</sup>/d (maximum), to be supplied through the Xiashi Town municipal water supply network. The drainage system for the demonstration park will separate rain water and wastewater. Rainwater will be collected by the rain water collection pipelines in the Youyiguan Industrial Park and discharged into nearby drainage ditches. Domestic wastewater from the staff, students and the canteen has been estimated to total approximately 272 m<sup>3</sup>/d, and will go through oil-water separation and septic tanks prior to discharge into the municipal sewer for treatment at the Xiashi Town Wastewater Treatment Plant commissioned in August 2016 with a design capacity of 500 m<sup>3</sup>/d. Raw materials would consist of common building materials that will be sourced locally.

#### E. Subproject 6: Expansion of Pingxiang Border Trade Service Center

76. This subproject is located to the immediate west of the existing Pingxiang Border Trade Logistics Center in Youyi Town in Pingxiang City, which is under the administration of Chongzuo. Total land take for the center is 110,443 m<sup>2</sup> (11 ha). It consists of buildings and border trade areas as shown in Table 14 with a total floor area 25,580 m<sup>2</sup> taking up 17,090 m<sup>2</sup> of land. Construction is estimated to take approximately seven months. Figure 4 shows the layout of the border trade service center.

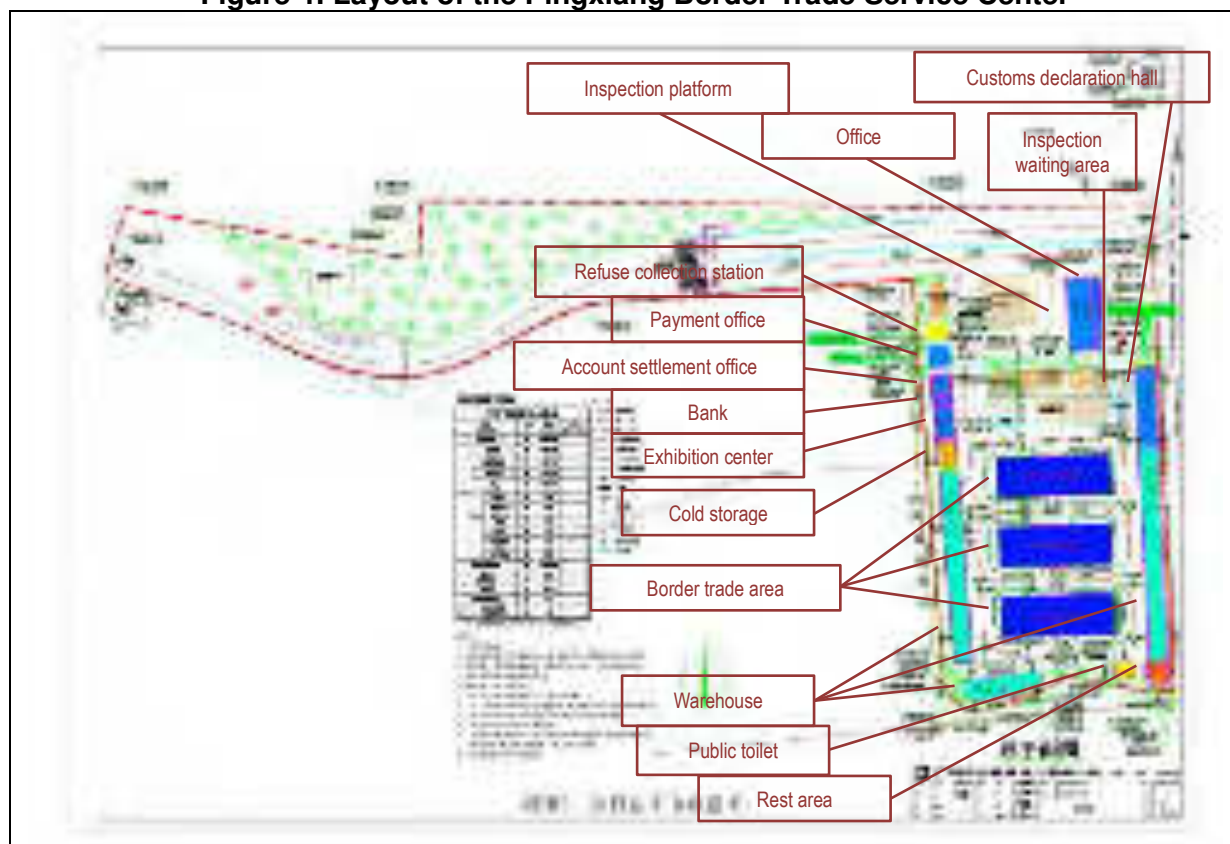
**Table 14: Description of Buildings and Facilities for Subproject 6**

Name of Building / Facility	Floor Area (m <sup>2</sup> )	No. Building	No. of Storey
Inspection platform	1,045.00	1	1
Border trade area	7,560.00	3	1
Custom declaration hall	2,700.00	1	3
Warehouse (including cold storage)	11,400.00	3	2
Office	330.00	1	1
Payment office	165.00	1	1
Account settlement center	480.00	1	2
Exhibition center	720.00	1	2
Bank	240.00	1	2
Security office	50.00	1	1
Refuse collection station	150.00	1	1
Resting area	540.00	1	2
Public toilet	200.00	1	1
<b>Total:</b>	<b>25,880.00</b>		
Inspection waiting area	3,895.00	none	not applicable

Source: EIT



**Figure 4: Layout of the Pingxiang Border Trade Service Center**



Source: EIT

77. Building design will include energy saving features. Water usage has been estimated to be 41.45 m<sup>3</sup>/d (maximum), to be supplied by the existing Jinjishan Water Supply Station. The drainage system for the demonstration park will separate rain water and wastewater. Rainwater will be collected by the rain water collection pipelines and discharged into nearby drainage ditches. Domestic wastewater has been estimated to total approximately 114.21 m<sup>3</sup>/d and will be discharged to the wastewater treatment station at the neighboring Pingxiang Border Trade Logistics Center for treatment. Upon completion of the Kafeng Wastewater Treatment Plant, domestic wastewater from the border trade service center will be conveyed to this WWTP for treatment instead. The Kafeng WWTP has a design capacity of 1,000 m<sup>3</sup>/d, with 500 m<sup>3</sup>/d to be built in phase 1. It is in the domestic environmental impact assessment stage and construction for phase 1 has been estimated to take approximately one year. No date has been set for its commissioning. Raw materials would consist of common building materials that will be sourced locally.
78. The 11,400 m<sup>2</sup> warehouse for storage of mainly dry fruit products includes 660 m<sup>3</sup> for cold storage, using liquid ammonia as the coolant. The maximum quantity of liquid ammonia to be stored on site would not exceed 5 tons at any given time.

#### **F. Capacity Development and Institutional Strengthening**

79. Two subprojects will contribute to capacity development and institutional strengthening. Subproject 9 will consist of a demand analysis of SMEs in border areas for business

development services, capacity assessment of SME service centers and formulation of strategy and action plan for improved capacity and institutional arrangement in business development services. Subproject 10 will provide consulting services on institutional support, capacity building and advisory assistance for project implementation and preparation of future tranches. These subprojects have no adverse environmental impacts.

## **G. Climate Change Adaptation Considerations**

80. Climate risk and vulnerability assessment for the three subprojects has been conducted<sup>13</sup> (Appendix 2). The subproject areas are characterized by hot summers, warm winter and plenty of rainfall, as well as complex geology. Heavy rainfall induced flood is a major natural hazard. Complex geology has resulted in geological hazards such as landslide.
81. Climate projections for the project area (using Qinzhou data to represent the Fangchenggang area and Longzhou data to represent the Pingxiang area) in 2050 and 2100 were developed using greenhouse gas (GHG) Representative Concentration Pathways from the Intergovernmental Panel on Climate Change Fifth Assessment Report (AR5), with low, mid and high scenarios for each time horizon representing low, mid and high climate sensitivity. Results show that potential climate change impacts include heavy rainfall, sea level rise and heatwaves.
82. **Extreme Rainfall.** Annual maximum daily rainfall in the Fangchenggang area was projected to increase on average by approximately 6% in 2050 and 12% in 2100 under the mid-scenario, and 12% in 2050 and 28% in 2100 under the high scenario. Annual maximum daily rainfall in the Pingxiang area was projected to increase on average by approximately 7% in 2050 and 14% in 2100 under the mid-scenario, and 14% in 2050 and 32% in 2100 under the high scenario.
83. **Sea Level Rise.** The sea level rise rate of Beibu Gulf off Fangchenggang is 1.16 cm per 1 cm global rise, which is lower than the coastal area of the neighboring Guangdong Province, perhaps due to protection from the surrounding land mass particularly the Hainan Island and Leizhou Peninsula to the south. Predictions show substantial rise of sea level in Beibu Gulf by approximately 25 cm by 2050 and 64 cm by 2100. The Fangchenggang Poly Tech Vocational School is located on high ground and would not be affected by sea level rise. Pingxiang is inland and would not be affected by sea level rise.
84. **Heatwave.** Heatwave hazard was projected to increase significantly due to climate change. Heatwave is generally defined as a consecutive days of temperature above a given threshold. Heatwave is still rare in the Fangchenggang area (on average less than 2 times per 100 years) and the Pingxiang area (on average 5 times per 100 years). Based on mid-scenario projections, heatwave frequency by 2050 is likely to increase by almost 9 times over the baseline for the Fangchenggang area and by 8 times for the inland Pingxiang area. It would likely become an annual event by 2100 for both cities. Heatwave duration was also predicted to increase, from 7 days to 8 days by 2050 and to 15 days by 2100 for the Fangchenggang area, and from 8 to 15 days by 2050 and to 17 days by 2100 for the Pingxiang area.

---

<sup>13</sup> Ye, W. 2016. Climate change impact assessment on Guangxi Regional Cooperation and Integration Promotion Investment Program, the People's Republic of China. Technical assistance consultant's report for ADB.

85. **Adaptation Options.** Hard and soft options have been recommended for climate change adaptation. Hard options are engineering measures for adapting to extreme rainfall and heatwaves. To prevent urban flooding during extreme rainfall events, sufficient drainage capacity is critical. For subproject 1, an 8% increase from the current drainage standard is recommended for adoption in the detailed drainage system design for the Fangchenggang Poly Tech Vocational School campus. For the two subprojects in Pingxiang, a 10% increase from the national standard should be used in the detailed drainage system design. It is also recommended that a higher design standard should be adopted for the slope stabilisation design for all slopes within the subproject sites. For heatwave adaptation, necessary facilities for air conditioning such as sufficient power supply, air conditioning facility space, etc, should be in place or allowed for in design for future installation.
86. Soft measures include ecological solutions and management options. These include good vegetation cover to prevent soil erosion and landslide hazard. More green space and good vegetation cover is also an effective option to reduce heatwave risk to human health. Heatwave risk can also be managed through awareness raising and preparedness when heatwave strikes.

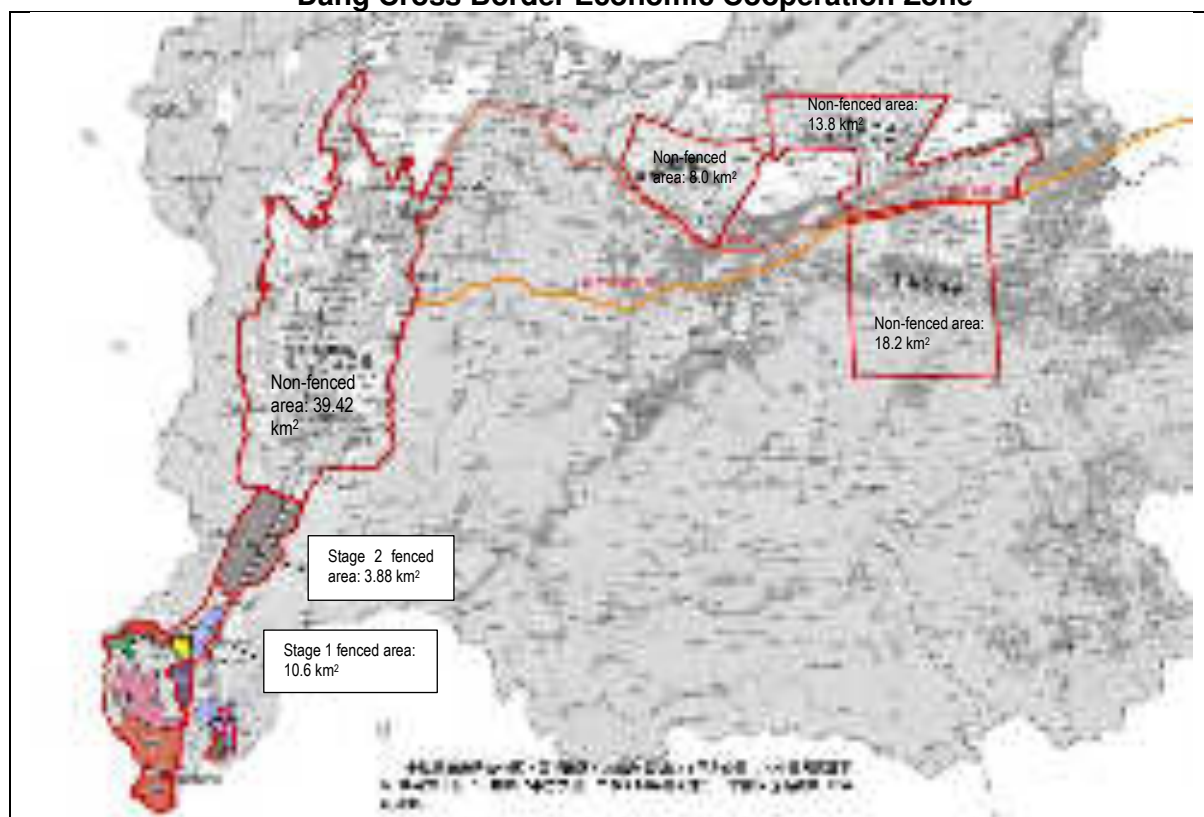
#### **H. Associated Facilities**

87. Based on SPS (2009) definition of associated facilities, the three tranche 1 subprojects do not have facilities that are not funded by the project but (i) whose viability and existence depend exclusively on the project and (ii) whose goods and services are essential for successful operation of the project.

### **IV. DESCRIPTION OF THE ENVIRONMENT**

88. The description of the pre-project environment (biophysical and socio-economic) establishes (i) the environmental setting within which the project will be implemented, and therefore needs to be designed to suit, and (ii) the environmental values which will be changed (either negatively or positively) by the project. Both these roles are encompassed by the concept of the “baseline” environment.
89. Subprojects 2 and 6 are both located on the Pingxiang side of the **PRC - Viet Nam Pingxiang – Dong Dang Cross Border Economic Cooperation Zone**. The *Master Development Plan (2015-2030)* for this zone in Pingxiang dated May 2015 indicates that it has a total area of 93.9 km<sup>2</sup> consisting of fenced areas of 14.48 km<sup>2</sup> and non-fenced areas of 79.42 km<sup>2</sup> (Figure 5).

**Figure 5: Planning Areas of the Pingxiang Side of the PRC – Viet Nam Pingxiang – Dong Dang Cross Border Economic Cooperation Zone**

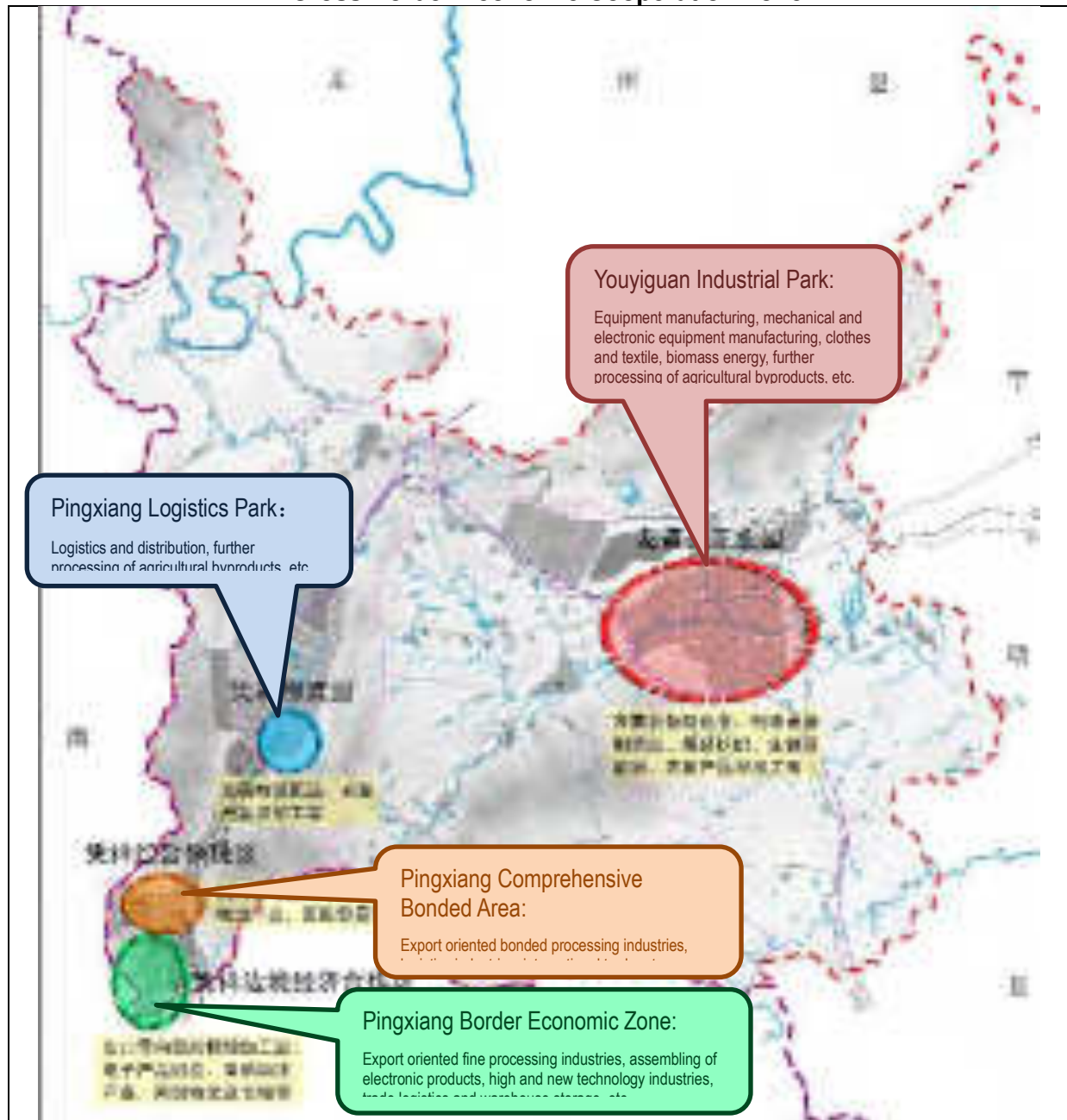


Source: Master Development Plan of the China – Viet Nam Pingxiang – Dong Dang Cross Border Economic Cooperation Zone (2015-2030)

90. Figure 6 shows the industrial subzones and their typical industries within the PRC - Viet Nam Pingxiang – Dong Dang Cross Border Economic Cooperation Zone in Pingxiang. These subzones include the Pingxiang Comprehensive Bonded Area and the Pingxiang Border Economic Zone (where subproject 6 is located) within the fenced areas, and the Pingxiang Logistics Park and the Youyiguan Industrial Park (where subproject 2 is located) within the non-fenced areas.

91. The *Master Development Plan* describes the municipal infrastructure for the industrial zones. For the border areas including the logistics park, water would be supplied to the border area by the Ping'er River Water Treatment Plant (WTP) which extracts water from the Ping'er River. The plant would go through stage 1 expansion and stage 2 construction. Wastewater would be treated by the Puzhai Wastewater Treatment Plant (WWTP), the Kafeng WWTP and the Nonghuai WWTP. For the industrial areas further away from the border such as the Youyiguan Industrial Park, water supply would be from the new Shuangshi WTP. The Shuangshi WTP would also be connected to the Ping'er River WTP so that one could function as the backup water source for the other. Small existing WTPs such as the Daxiang WTP, Nanshan WTP Shangshi WTP and Xiashi WTP would be retained as backup treatment plants. Wastewater would be treated by the Xiashi WWTP and the Shangshi WWTP.

**Figure 6: Industrial Layout in Pingxiang within the PRC - Viet Nam Pingxiang – Dong Dang Cross Border Economic Cooperation Zone**



Source: Master Development Plan of the PRC – Viet Nam Pingxiang – Dong Dang Cross Border Economic Cooperation Zone (2015-2030)

**A. Existing Setting of the Project Sites**

92. **Subproject 1: Fangchenggang Training Centre for Chinese and Vietnamese Workers and SMEs.** The proposed subproject site (E 108.32°, N 21.63°) is located on the campus of the Fangchenggang Poly Tech Vocational School in Jiangshan Peninsula Scientific and Technology Park in Shamuwan Village, Jiangshan Township, Fangcheng Town of Gangkou

District in the prefecture-level city of Fangchenggang. The site is surrounded by low hills to the east and south, and is adjacent to the Shamuwan Village Shiping Group to its east, with a population of about 150 persons. There is a shrimp pond about 500 m from the eastern boundary across the hills with ongoing shrimp culture. The Guangxi School of Finance and Economics Fangchenggang Campus is located about 150 m to the west, with about 2,000 teaching and administrative staff and students at present and a planned expansion to 5,000 persons in the future. The site is bordered to the north by the Port - Dongxing Class 1 Highway, with hilly terrain on the other side of the highway. Part of the Fangchenggang Poly Tech Vocational School campus is under construction already, this is not funded by ADB. Figure 7 shows the surrounding environmental setting of the Fangchenggang Poly Tech Vocational School.

**Figure 7: Surrounding Environmental Setting of the Fangchenggang Poly Tech Vocational School**





Source: PPTA site survey

93. **Subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone.** The subproject site (E 106.91°, N 22.12°) is located in Youyiguan Industrial Park in Pingxiang City and covers an area of 1.8 ha (or 17,999 m<sup>2</sup>). G7211 Nanning-Youyiguan Highway is about 60 m from its northern boundary. The site is presently covered with shrubby vegetation and irrigation storage ponds. It is bordered by farmland to the north, east and south; and by X462 county road to the west. On the other side of the county road is the planned warehousing and logistics base of the industrial park. Figure 8 shows the surrounding environmental setting of the subproject site.

**Figure 8: Surrounding Environmental Setting of the Cross-border Labor Cooperation Demonstration Park in the Pingxiang Border Economic Zone**





Source: EIT and PPTA site survey

94. **Subproject 6: Pingxiang Border Trade Service Center.** The subproject (E 106.71°, N 22.00°) is located to the north of Kafeng Village, Youyi Town, Pingxiang City. The subproject site's current land use status is vacant grassland. The Pingxiang Border Trade Logistics Center (under construction) is located to its east, and Kafeng Village and Busha Village are about 130 m and 210 m respectively from the proposed site boundary. The subproject site is relatively flat. There is no ecological or natural landscape surrounding the proposed subproject site. **Figures 9** and **10** show the surrounding setting of the Pingxiang Border Trade Service Center.



**Figure 9: Map showing Location of the Pingxiang Border Trade Service Center and Vicinity**



**Figure 10: Surrounding Environmental Setting of the Pingxiang Border Trade Service Center**





Kafeng Village 130 m to its south-south-east

Source: EIT and PPTA site survey

## B. Existing Sensitive Receptors

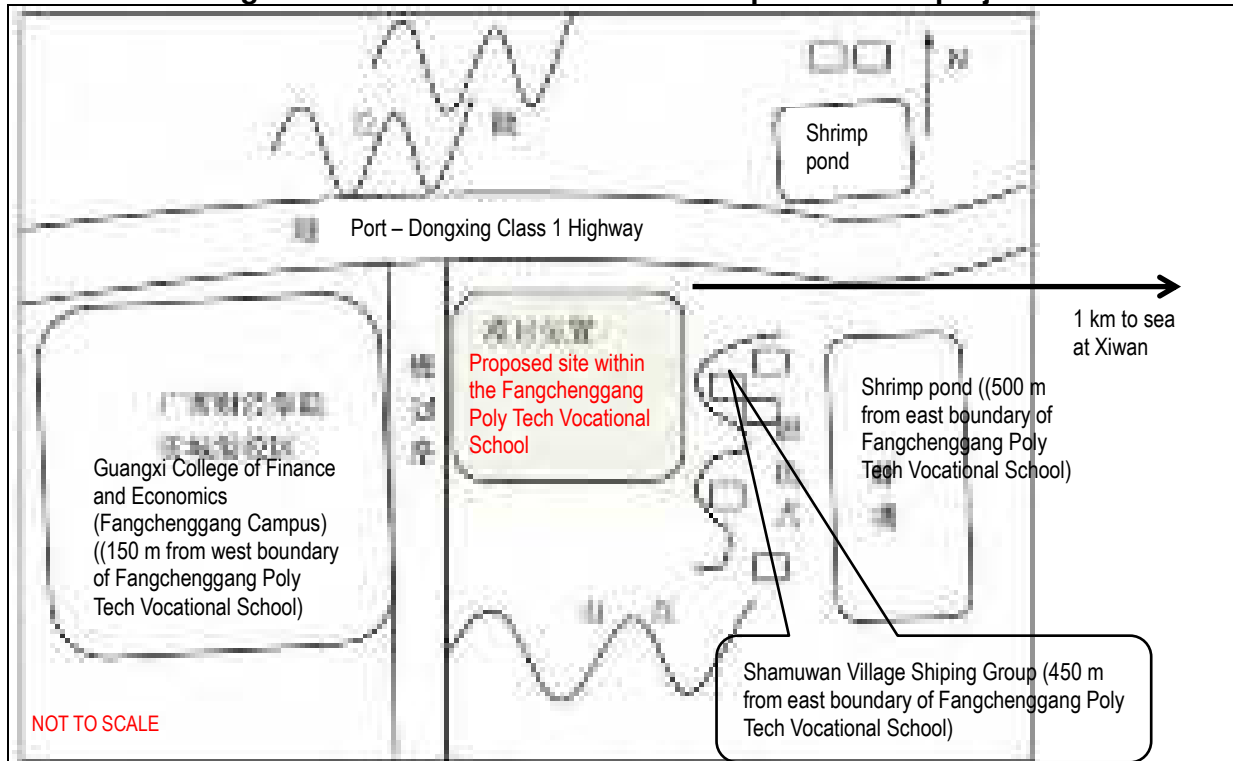
95. Based on field surveys, the subproject EITs identified various types of sensitive receptors/ protection targets that currently exist within the subproject areas of influence. Tables 15, 16 and 17 list these sensitive receptors for subprojects 1, 2 and 6 respectively. Locations of these sensitive receptors for the three subprojects are illustrated in Figures 11, 12 and 13.

**Table 15: Existing Sensitive Receptors for Subproject 1: Fangchenggang Training Centre for Chinese and Vietnamese Workers and SMEs**

No.	Name of Sensitive Receptor	Feature	Direction	Distance	No. of Persons	Applicable Environmental Standard
1	Shiping Group, Shamuwan Village,	Residential	East	Across hills (450 m)	About 150	i. <b>Air quality</b> shall meet <b>Class 1</b> standard in <i>Ambient Air Quality Standards</i> (GB 3095-2012). ii. <b>Acoustic</b> environment shall meet <b>Category 1</b> standard in <i>Environmental Quality Standard for Noise</i> (GB 3096-2008); and the sensitive receptors within 50±5m away from trunk roads shall meet <b>Category 4a</b> standard in <i>Environmental Quality Standard for Noise</i> (GB 3096-2008) iii. WBG EHS standard/WHO ambient <b>air</b> quality guidelines and <b>noise</b> standards
2	Guangxi School Of Finance and Economics (Fangchenggang Campus)	School	West	150 m	About 2,000	
3	A shrimp pond connected with the sea	Fishery	East	Across hills (500 m)	--	iv. <b>Marine water</b> quality shall meet <b>Category 2</b> standard in <i>Sea Water Quality Standard</i> (GB 3097-1997).
4	Sea area at Xiwan	Marine	East	1 km	--	v. <b>Marine water</b> quality shall meet <b>Category 4</b> standard in <i>Sea Water Quality Standard</i> (GB 3097-1997).

Source: EIT and PPTA site survey

**Figure 11: Locations of Sensitive Receptors for Subproject 1**



Source: EIT

**Table 16: Existing Sensitive Receptors for Subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone**

No.	Name of Sensitive Receptor	Feature	Direction	Distance	No. of Persons	Applicable Environmental Standards
1	Bannan Village	Residential	East	180 m	About 35 persons (8 households)	i. Air quality shall meet <b>Class 2</b> standard in <i>Ambient Air Quality Standards</i> (GB 3095-2012). ii. Acoustic environment shall meet <b>Category 2</b> standard in <i>Environmental Quality Standard for Noise</i> (GB 3096-2008); and the sensitive receptors within 35±5m away from trunk roads shall meet <b>Category 4a</b> standard in <i>Environmental Quality Standard for Noise</i> (GB 3096-2008) iii. WBG EHS standard/ WHO ambient <b>air</b> quality guidelines and <b>noise</b> standards
2	Banling River	2.0 m <sup>3</sup> /s average flow rate	South	1.7 km	--	iv. <b>Category 3</b> standard in <i>Environmental Quality Standards for Surface Water</i> (GB 3838-2002)

**Note:** Domestic wastewater generated during operation will be discharged into the Xiashi Town Wastewater Treatment Plant (commissioning in August 2016) via municipal sewer. There will be no direct discharge from the subproject into the Banling River.

Source: EIT and PPTA site survey (on Banling River)

**Figure 12: Locations of Sensitive Receptors for Subproject 2**



Source: EIT and PPTA consultant (on Banling River)

**Table 17: Existing Sensitive Receptors for Subproject 6: Expansion of Pingxiang Border Trade Service Center**

No.	Name of sensitive receptor	Direction and Closest Distance	Conditions of drinking water	Basic information of sensitive receptors	Applicable environmental standards
1	Puzhai Village	890 m to northwest	Tap water	about 600 persons	i. <b>Class 2</b> standard in <i>Ambient Air Quality Standards</i> (GB 3095-2012);
2	Guanjing Village	650 m to northeast		about 300 persons	ii. <b>Category 2</b> standard in <i>Environmental Quality Standard for Noise</i> (GB 3096-2008)
3	Guan'ai Village	430 m to northeast		about 350 persons	iii. WBG EHS standard/ WHO ambient air

No.	Name of sensitive receptor	Direction and Closest Distance	Conditions of drinking water	Basic information of sensitive receptors	Applicable environmental standards
4	Banbu Village	500 m to northeast		about 300 persons	quality guidelines and noise standards.
5	Kafang Village	300 m to south		about 80 persons	
6	Guqie Village	380 m to west		about 188 persons	
7	<b>Kafeng Village</b>	130 m to southeast		about 500 persons	
8	<b>Busha Village</b>	210 m to southwest		about 120 persons	
9	A nameless gully	100 m to south	/	Flowing from east to southwest	iv. <b>Category 3</b> standard in <i>Environmental Quality Standards for Surface Water</i> (GB 3838-2002)

Source: EIT

**Figure 13: Locations of Sensitive Receptors for Subproject 6**



Source: EIT

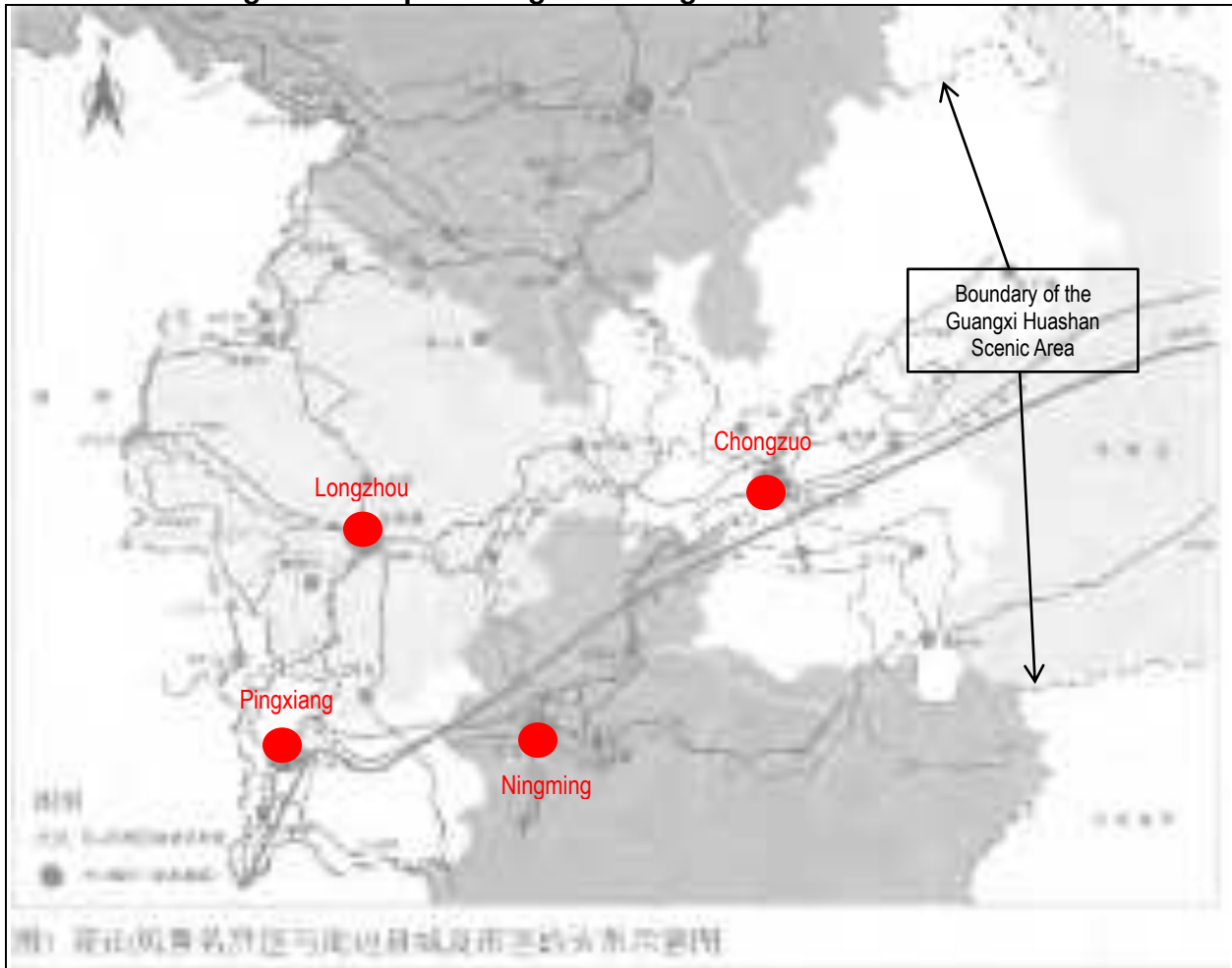
96. **Air Quality and Noise.** Existing air quality and noise sensitive receptors within the EIT assessment areas of 1 km<sup>14</sup> from the boundaries of the proposed three subproject sites are presented above in Tables 13, 14 and 15, respectively. In summary, there are 11 existing air quality and noise sensitive receptors for the proposed three subproject sites, including one school. Most of the sensitive receptors are two- to three-storey brick buildings for residential use. There are a few mid-rise buildings with six storeys or more on the Guangxi School of

<sup>14</sup> Usually only 200m, so the subproject EITs are more conservative.

Finance and Economics (Fangchenggang Campus). The 11 sensitive receptors are estimated to consist of an estimated population of approximately 4,600. The Guangxi School of Finance and Economics (Fangchenggang Campus) has dormitories for teachers and students. The noise sensitive receptors are grouped under noise functional area categories 1, 2 and 4a.

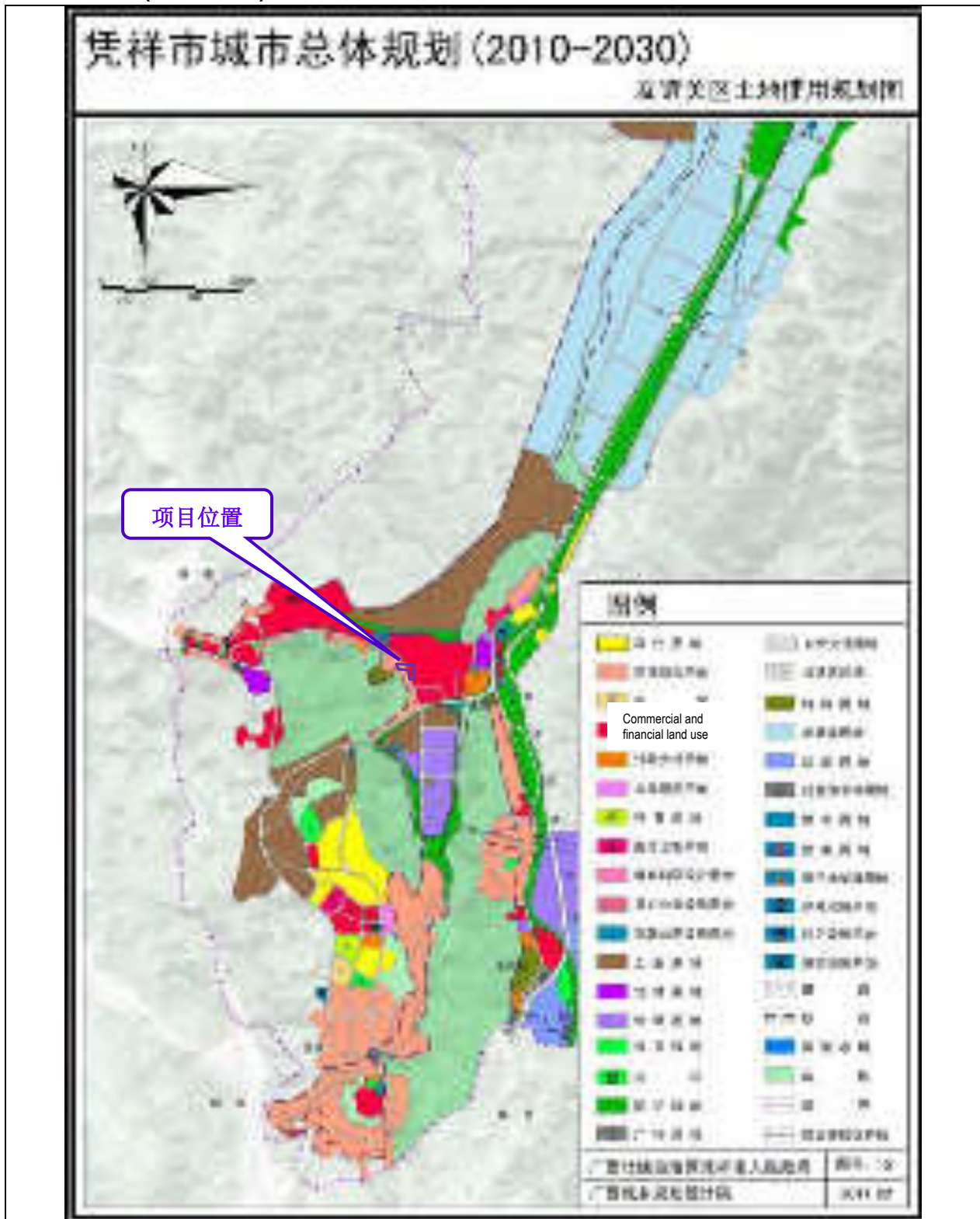
97. **Water Quality.** Water quality sensitive receptors in the vicinity of the three proposed subproject sites include one river (Banling River, about 1.7 km away), a nameless ditch (about 100m away), a shrimp culture pond and marine water in Beibu Gulf (over hills and at distances of 500 m and 1 km away respectively).
98. **Relationship between Subproject 6: Pingxiang Border Trade Service Center Subproject and Guangxi Huashan Scenic Area.** Guangxi Huashan Scenic Area is one of the key national scenic areas approved and published by the State Council in 1988. It includes partial areas of Jiangzhou District, Ningming County, Longzhou County, Daxin County and Pingxiang City in the prefecture-level city of Chongzuo (Figure 14). It covers 23 townships and 153 administrative villages, with a total area of 3,001 km<sup>2</sup>. According to an earlier master plan of Guangxi Huashan Scenic Area, the proposed Pingxiang Border Trade Service Center subproject site is located inside the scenic area. However, according to the latest *Master Plan of Huashan Scenic Area* (October 1993), land use within some scenic areas in Jiangzhou District, Ningming County, Longzhou County and Pingxiang City were designated as economic and social activity centers. In consideration of the absence of unique landscape and scenic resources in these areas versus local economic development, it is not suitable to include the whole district and three counties into the scenic area. Thus the population and urban land of this one district and three counties are excluded from the scenic area protection although they are geographically inside the scenic area boundary. This subproject site is located within the zone categorized for commercial and financial land use (Figure 15) in the *Land Use Plan for Youyiguan District, Urban Master Plan of Pingxiang City (2010~2030)*. The land for the Pingxiang Border Trade Service Center subproject therefore does not belong in the scenic area.

Figure 14: Map showing the Guangxi Huashan Scenic Area



Source: Urban Boundary Research Of The Towns Surrounded By Scenic Area: Huashan Case / Wei Pengtao., Planners, 2012, 28(z2)

Figure 15: Land Use Plan for Youyiguan District according to the Pingxiang City Urban Master Plan (2010-2030)



Source: EIT



99. **Protected Area.** According to site surveys and the domestic EITs, no historical and cultural protection areas, nature reserves, scenic spot, drinking water source and other protection areas or species with international, national or provincial protection status have been identified within the subproject assessment areas of influence. No ecological sensitive receptors have been identified within the subproject areas of influence. The subproject sites are not located in critical or natural habitats.

## C. Physical Setting

### 1. Overview of Guangxi

100. Guangxi is a mountainous region. The Nanling Mountain range is located near the northeast border, with the Yuecheng Mountain and Haiyang Mountain being its shorter branching ridges. Nearer to the center of the region are the Dayao Mountain and the Daming Mountain. In the north are the Duyao Mountain and the Fenghuang Mountain. Near the southeast border is the Yunkai Mountain. The highest point is Mount Mao'er located at the Yuecheng Mountain, at 2,141 m. Many river cut valleys run through the mountains. Most of these rivers form the tributary watershed of the West River. Guangxi has a short coastline on the Gulf of Tonkin. Important seaports include Beihai, Qinzhou and Fangchenggang. Guangxi has a subtropical climate. Summers are generally long and hot. Average annual temperature is 17 °C to 23 °C, while average annual precipitation is 1,250 to 1,750 mm. Guangxi has a rich and diverse ecosystem partly due to the subtropical climatic conditions and topography. Over 6,000 plant species and a variety of wild animals have been recorded.

### 2. Fangchenggang

101. **Geography and Terrain.** Fangchenggang is a prefecture-level city located in the southern region of the Guangxi Zhuang Autonomous Region (GZAR) between N 21°36'~22°22' and E 107°28'~108°36'. Its administrative area totals 6,181 km<sup>2</sup>, including 42 km<sup>2</sup> of built-up urban areas. It neighbors the prefecture cities of Qinzhou to the east, Chongzuo to the west and Nanning to the northeast. It borders with Viet Nam to southwest and the Beibu Gulf to the south.
102. Fangchenggang is a coastal city in southeastern PRC, with a coastline of 584 km, which is longer than the inland border line is 212 km. It has four national Category-1 Ports, namely, Fangchenggang, Dongxing, Jiangshan and Qicha.
103. The **landscape** is interwoven with mountains, plateaus and hills (78%), water surface (8%) and alluvial plains (14%). The north and south are primarily low-mountains and hills. The central part is dominated by mountains. The southeast is lined with coastal hills and mudflats. The Shiwanda Mountain runs east to west through the territory.
104. The Fangchenggang Gulf is surrounded by hills on three sides with Fangcheng River, Shatan River and Nalan River converging inside the gulf and then into Beibu gulf. The **terrain** of the city contain hills, residual hill, terrace and plain, which were formed by the erosion of rivers and typhoon. The main geomorphic unit is coastal hills.
105. **Seismicity.** According to the *China Seismic Ground Motion Parameters Zoning Map* (GB 18306-2001) Amendment 1, the seismic intensity in Fangchenggang is Grade 6. The PRC

classifies seismic intensity into 12 grades under the *China Seismic Intensity Table* (GB/T 17742-2008), from Class 1 to Class 12 based on the severity of “shaking” of the earth surface and the extent of potential impact. Class 6 is intermediate in severity with most people unable to stand still and furniture falling.

106. **Climate.** The subproject area is in subtropical zone at lower latitude, belonging to subtropical monsoon climate. As it is on the coast of Beibu Gulf, it is influenced by warm air mass from the sea all year round, which provides the place with sufficient sunlight and rainfall and pleasant climate.
107. **Temperature.** The multi-year annual average temperature is 22.3 °C with the highest temperature being 37.8 °C and the extreme lowest temperature being 0.9 °C. The temperature reaches the highest in July averaging 31.2 °C. January has the lowest temperature averaging 12.0 °C.
108. **Rainfall.** The multi-year annual average rainfall is 2,314.5 mm with the highest annual average rainfall being 3,111.9 mm and the highest daily rainfall being 244.1mm (Fangchenggang meteorological station on May 16, 1972). The lowest annual average rainfall is 1745.6 mm. The city is regarded as being located in high rainfall region in GZAR. Rainy season runs from May to September, accounting for 83% of the annual rainfall. Rainfall from October to March makes up only 6.4% of the annual rainfall. August usually has the highest monthly rainfall, reaching 528.7 mm. December usually has the lowest monthly rainfall averaging only 23.9 mm.
109. **Evaporation.** The multi-year annual average evaporation is 1,512.1 mm. The highest evaporation usually occurs in September averaging 159.9 mm. February has the lowest evaporation averaging 65.8 mm. Annual variation basically corresponds to temperature changes.
110. **Wind.** Located at the northwestern part of the Beibu gulf, Fangchenggang has vast sea area, which gives the place obvious monsoon climate. Southerly wind is dominant in the summer and northeasterly wind in the winter. The dominant wind direction is NNE with a frequency of 30.5%, and the sub-normal wind direction is SSW with a frequency of 8.4%. Strong wind usually comes from the east with maximum speed reaching 36 m/s; the sub-strong wind direction is NNE with a maximum speed of 27 m/s. The annual average wind speed is 3.1 m/s. Typhoon occurs one to three times a year, mostly in June to September with average wind force of 8 to 9 degrees. The force of gust wind could reach 11 to 12 degrees.
111. **Frost and Fog.** Fog mostly occurs in winter and spring with an average of 10.9 foggy days. The maximum foggy period is 23 days and the minimum is 8 days. Normally fog appears from the night to early morning which lasts for 2 to 3 hours and disperses when the sun rises. The annual frost-free period is more than 350 days.
112. **Relative Humidity.** The annual average relative humidity is 82%. Monthly variation of relative humidity is between 74-87%, with the highest at 87% in July to Augusts, and the lowest at 74% in November. The annual average number of sunlight hours is 1,561.
113. **Hydrology and Surface Water Quality.** There are more than ten rivers flowing through Fangchenggang, with a total length of more than 400 km and an average annual runoff of

more than 8 billion m<sup>3</sup>. Five major rivers drain into the Xiwan bay: Lizitan, Liyujiang, Dawangjiang, Chongsha (small stream) and Shitan (small stream) which are used primarily for irrigation purposes. The largest river is Lizitan, with a length of 13 km, average width of 40 m and average depth of 2 m. The Liyujiang River has a length of 3 km, average width of 2.5 m and average depth of 1.5 m. The Dawangjiang River has a length of 5.2 km, average width of 3 m and average depth of 2 m. The water quality for most of the marine areas meets Category I of the PRC *Sea Water Quality Standard* (GB 3097-1997).

114. Fangchenggang has a mixed **tidal** regime with 6/8-day small tides every month, which is irregular semi-diurnal tide and the rest is regular semi-diurnal tide including spring tide and neap tide. When the diurnal tide is dominant, the average tide level is 3.82 m with the highest tidal level reaching 5.54 m. The maximum tidal range is 5.39 m with the average tidal range larger than 4.5 m. Flood tide lasts for 15 hours, and ebb tide lasts 9 hours, which is favorable for the erosion and deposition of channels. When the semi-diurnal tide is dominant, the tidal range is less than 1 m with the smallest range at 0.79 m.
115. **Overall Environmental Quality.** According to the ambient environmental monitoring data in 2015<sup>15</sup>, the overall environmental quality in Fangchenggang Municipality was rated as excellent<sup>16</sup>. All the ambient air, water and acoustic environmental parameters and noise level met the national ambient environmental standards. Specifically, the air quality meets the requirements of Class 2 of the national ambient air quality standards, with the annual average concentration of total suspended particulate matter smaller than 10 µm (PM<sub>10</sub>) being 0.05 mg/m<sup>3</sup> compared to the class 2 threshold of 0.07 mg/m<sup>3</sup>, particulate matter smaller than 2.5 µm (PM<sub>2.5</sub>) 0.031 mg/m<sup>3</sup> (vs.0.035 mg/m<sup>3</sup>), nitrogen dioxide (NO<sub>2</sub>) 0.01 mg/m<sup>3</sup> (vs. 0.04 mg/m<sup>3</sup>), and sulphur dioxide (SO<sub>2</sub>) at 0.01 mg/m<sup>3</sup> (vs. 0.06 mg/m<sup>3</sup>). The WBG/WHO Ambient Air Quality Guidelines only have annual average EHS standards on NO<sub>2</sub> and PM10 as well as PM<sub>2.5</sub>. The yearly average NO<sub>2</sub> and PM<sub>10</sub> data complied with the AQG targets (SO<sub>2</sub> <0.020 mg/m<sup>3</sup>, PM<sub>10</sub> <0.050 mg/m<sup>3</sup>). The annual average PM<sub>2.5</sub> complied with the WBG/WHO Interim target-1 (<0.035 mg/m<sup>3</sup>). The average urban daytime noise level was 55.8 dB(A), slightly exceeded the WBG EHS noise standard (<55 dB(A)) but complied with GB 3096-2008(<60 dB(A)). In all of the monitored river/marine sections, the water quality met the applicable national surface water and sea water quality standards.
116. **Baseline Environment for Subproject 1: Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs.** The subproject site is located in Jiangshan Peninsula on the southeast coast of Fangchenggang. Jiangshan Peninsula has hilly terrain and is mainly composed of sedimentary sandy shale bank. The highest elevation is about 150 m. The topography slopes downwards from southwest to northeast. In the east are sandy beaches, intertidal mudflats and rocky shores. The geological condition on the subproject site and in the vicinity is considered stable and not known for debris flow and landslide.
117. The subproject area's **landform** is a denuded platform with low hills. The coastal region is cracked-terrain land with zigzag coastline and developed harbor, sand levee and sandy beach. Its altitude is between 20 m and 80 m. The topographic relief is not large and the

---

<sup>15</sup> Fangchenggang Annual Environmental Statement, 2015, [http://www.fcgs.gov.cn/zxzx/tzgg/ggxx/201606/t20160607\\_24408.html](http://www.fcgs.gov.cn/zxzx/tzgg/ggxx/201606/t20160607_24408.html)

<sup>16</sup> In the PRC, environmental quality is generally classified into five levels: excellent, good, mildly polluted, moderately polluted and heavily polluted.

mountain slope is gentle. The lithology is mainly composed of sandstone, mudstone and argillaceous sandstone in Jurassic system. The surface layer is eluvium of weathering and denudation, covered by well-developed vegetation. The **geological formation** is relatively stable with no passing of Holocene active vault. No unfavorable geological conditions or disasters such as landslide, mudslide, ground fracturing. Collapsed and karst cave have been found in the vicinity of the site. The site is weak in its stability with big elevation difference. It is mainly composed of medium hard soil with big topographic relief.

118. The **surface water** on Jiangshan Peninsula mainly includes the Tanpeng ancient canal and three small reservoirs: Wansong Reservoir, Tanpeng Reservoir and Wantan Reservoir. The main drinking water sources are Wantan Reservoir and more than 100 small wells distributed on the peninsula. Wantan Reservoir has a catchment area of 6 km<sup>2</sup> and a storage capacity of about 6,000,000 m<sup>3</sup>.
119. Table 18 summarizes the baseline environmental conditions surrounding the subproject site in Fangchenggang.

**Table 18: Summary of Baseline Environment in the Vicinity of Subproject 1 site**

Baseline Environment	Description
Ambient air quality and acoustic environmental quality	Its north side is in immediate vicinity of the Port-Dongxing Class 1 Highway. The air and acoustic environmental quality is modest due to dust and noise from nearby traffic.
Sea water quality	According to sea water quality monitoring results around Fangchenggang port by Fangchenggang Municipal Environment Monitoring Station in 2013, <b>Category 4</b> in <i>Sea Water Quality Standard</i> (GB3097-1997) was met.
Summary of existing environmental condition	<ol style="list-style-type: none"> <li>1) The subproject site is in immediate vicinity of the Port-Dongxing Class 1 Highway. There is certain influence on the subproject area by noise, dust and automobile exhaust emitted by vehicles;</li> <li>2) No sewage interception pipe network is in Jiangshan Peninsula, so that the residential domestic wastewater in the east of the subproject site is directly discharged into the sea, which exerts certain influence on sea water quality in near shore area;</li> <li>3) The subproject site neighbors the Fangchenggang Campus of the Guangxi College of Finance and Economics. Some buildings on the campus are under construction; which has potential dust and noise impact on the subproject area.</li> </ol>

Source: EIT using data in Fangchenggang EPB annual environmental monitoring reports.

### 3. Pingxiang

120. **Geography and Terrain.** Pingxiang, which is a county-level city under the administration of the prefecture level city of Chongzuo, is located in the southwestern region of GZAR. Its longitude is between E 106°41'~106°59' and its latitude is between N 21°57'N ~22°16'. The administrative area of the city covers 650 km<sup>2</sup>, having a width of 35 km from east to west, and length of 55 km from north to south. The straight-line distance between the city center to the border with Viet Nam is only 3 km. The length of its border with the Lạng Sơn Province of Viet Nam is 97 km. The city is the largest and most convenient land access from the PRC to Southeast Asia.
121. Pingxiang topography is dominated by mountainous terrain, sloping from the west to the east. The highest mountain is Mount Daqing with altitude of 1,256 m. The city's urban area lies to the north of the central mountain zone with elevations between 300 m to 500 m and

the relative height difference with the valley bottom is from 100 meters to 300 meters. The southeastern mountain zone extends from the east of Mount Daqing and Xiaoqing to the low mountains and hilly area between Ningming and Pingxiang. With average heights but jagged peaks, the southeastern mountain zone has great and steep slopes, thick grasses, dense forest and rough roads. The northeastern plain includes Xiashi, Liuli, Shaoping and other flat, wide or scattered piedmont plains and low earth mounds.

122. **Geology.** Pingxiang is located at the intersection of north-southeast tectonic system and north-west knob structure. Its geological structure is complicated, with fold and fracture. The earth surface has intrusive rock. From west to east, the terrain is roughly divided into western mountain zone, central mountain zone, southeastern mountain zone, northeastern mountain zone and central peak cluster & basin hill zone.
123. **Seismicity.** According to the *China Seismic Ground Motion Parameters Zoning Map* (GB 18306-2001) Amendment 1, the seismic intensity class in Pingxiang is 6. The PRC classifies seismic intensity into 12 classes under the *China Seismic Intensity Table* (GB/T 17742-2008), from Class 1 to Class 12 based on the severity of “shaking” of the earth surface and the extent of potential impact. Class 6 is intermediate in severity with most people unable to stand still and furniture falling.
124. **Climate.** Pingxiang is located in a subtropical climatic zone, with a subtropical monsoon climate characterized by mild winter, hot summer and abundant rainfall throughout the year. The summer begins in mid-April and ends in mid-October, lasting more than 180 days. January is the coldest month of the year with average temperature of 11.4 °C to 13.5 °C. July is the warmest month with average temperature of 25.7 °C to 27.7 °C. The rainfall ranges from 1,062 mm to 1,772 mm per year, with maximum daily precipitation of 206.5 mm. There are 344 frost-free days annually, and the average annual sunshine is 1,614 hours. Wind direction in a year is dominated by easterly and southerly wind in the summer and northeasterly wind in the winter. The annual average wind speed is 5-17 m/s.
125. **Hydrology and Surface Water.** There are 39 rivers in Pingxiang, all belong to the Pearl River System. The largest river is Ping'er River, which derives from the Qiqiong River in Viet Nam, and flows into the PRC along the western side of the Pinggong Mountain, through the cities of Pingxiang and Longzhou into Lijiang. The section of Ping'er River in Pingxiang is about 19 km long. In the wet season, the river is 120 m wide and 9 m deep, with maximum flow rate of 51,050 m<sup>3</sup>/s. In transitional season, the river is 100 m wide and 4.5 m deep, with average flow rate of 108 m<sup>3</sup>/s. In the dry season, the river is 50 m wide and 2.5 m deep, with minimum flow rate of 4.3 m<sup>3</sup>/s (recorded in May 1958).
126. **Baseline Environment for Subproject 2:** Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone. The proposed subproject site is located within the Youyiguan Industrial Park, where Class 2 standard in *Ambient Air Quality Standards* (GB 3095-2012) applies. The air quality in Pingxiang is excellent. According to the Environmental Statement of Pingxiang City in 2015, the city's daily average concentration of SO<sub>2</sub> was 0.011mg/m<sup>3</sup>, PM<sub>10</sub> 0.044mg/m<sup>3</sup>, and NO<sub>2</sub> 0.019mg/m<sup>3</sup>. Overall the air quality can meet Class 2 standard. The WBG WHO Ambient Air Quality Guidelines only have daily average EHS standards on SO<sub>2</sub> and PM10, and the SO<sub>2</sub> and PM<sub>10</sub> data complied with the AQG targets (SO<sub>2</sub> <0.020mg/m<sup>3</sup>, PM<sub>10</sub> <0.050mg/m<sup>3</sup>).
127. The proposed subproject site is located within the Youyiguan Industrial Park where

Category 3 **noise** standards in *Environmental Quality Standard for Noise* (GB 3096-2008) apply. Based on field survey, there is farmland to the site's north, east and south with no major noise source; and X462 county road traffic volume is low. The subproject site should meet Category 3 noise standards. Site-specific baseline monitoring has not been carried out as ambient noise levels are low.

128. The Banling River (1.7 km from the subproject site) flows from Kunquan Village in Viet Nam, and into the PRC near the No. 23 Sino-Vietnamese border marker. The PRC section of the river has a total length of 34 km, watershed area of 294 km<sup>2</sup>, water surface area of 0.6 km<sup>2</sup>, and average flow rate of 2 m<sup>3</sup>/s. The designated function of Banling River is for agricultural irrigation and its **water quality** satisfies Category III standards in *Environmental Quality Standards for Surface Water* (GB 3838-2002) based on monitoring results conducted in February and March 2014 on COD, BOD<sub>5</sub> and NH<sub>3</sub>-N for the *Environment Assessment Report on Centralized Drinking Water Sources of Pingxiang City* approved in 2014.
129. **Youyiguan Industrial Park.** The Youyiguan Industrial Park, also known as Xiashi Industrial Park, is located in Xiashi Town. It has a planned area of 16.2 km<sup>2</sup> to function as the processing base of China-ASEAN Free Trade Area focusing on auto parts, electronics, textile and garment, food, pharmaceutical, agricultural and agricultural products reprocessing industries. The park's water supply is provided by Xiashi town water supply station (present capacity 20,000 m<sup>3</sup>/d, design capacity 65,000 m<sup>3</sup>/d), with a comprehensive water supply network. Wastewater goes through pre-treatment by industries to meet Class 3 standards (for discharging into public sewer) in *Integrated Wastewater Discharge Standard* (GB 8978-1996) then conveyed to the Xiashi Town WWTP for treatment via public sewers. Eventually the plan is to build a WWTP in the southern part of the park, with treatment capacity of 35,000 m<sup>3</sup>/d. A planning EIA for the industrial park was prepared by the Guangxi Zhuang Autonomous Region Environmental Protection Science Research Institute and approved on June 13, 2008.
130. **Baseline Environment for Subproject 6: Expansion of Pingxiang Border Trade Service Center.** This proposed subproject site is located in Kafeng Village, Youyi Town next to the Pingxiang Border Trade & Logistics Center. The *Evaluation Report on Geologic Hazard Risk for Goods & Logistics Center of Pingxiang Border Trade Service*, describes the **geology** of the area to be quaternary system (Q<sup>m</sup>), with gravel cohesive soil, clay (Q<sup>el</sup>), intense weathering volcanic rock (πT<sub>1</sub>b), and upper limestone in carboniferous system (C<sub>3</sub>). The topography is higher in the west, northwest and northeast; and lower in the east and south.
131. The water supply of this subproject will be provided by nearby Jinjishan Water Supply Station in the south, which also provides potable water for residents in Puzhai Village. The subproject is not located within a protection zone for drinking water source.
132. Table 19 presents the **air quality** monitoring results from 27 February to 4 March 2016 in the EIT for the Pingxiang Border Trade and Logistics Center which is next to the subproject 6 site. These results were adopted as baseline conditions in the EIT for this subproject. The monitoring results represent only a snapshot in time and in space. The results indicate that on the days of monitoring and at the locations of monitoring, all monitored parameters complied with the GB 3095-1996 Class 2 standards. All monitored parameters also complied with WBG EHS AQG except PM<sub>10</sub> at Banbu Village which slightly exceeded AQG but

complied with the interim target and at Guqie Village which exceeded the AQG but complied with the interim target. As PRC being a developing country, compliance with interim targets is deemed to be acceptable.

**Table 19: Ambient Air Quality Monitoring Results for Subproject 6**

Monitoring Location	Parameter Monitored	Concentration Range ( $\mu\text{g}/\text{m}^3$ )	GB 3095-2012 Class 2 Standard ( $\mu\text{g}/\text{m}^3$ )	WBG EHS Standard	
				Interim Target ( $\mu\text{g}/\text{m}^3$ )	AQG ( $\mu\text{g}/\text{m}^3$ )
1# Banbu Village	SO <sub>2</sub> (1-hr AVG)	7~32	500	n/a	n/a
	SO <sub>2</sub> (24-hr AVG)	9~11	150	50 – 125	20
	NO <sub>2</sub> (1-hr AVG)	11~20	200	n/a	200
	NO <sub>2</sub> (24-hr AVG)	11~20	80	n/a	n/a
	PM <sub>10</sub> (24-hr AVG)	46~52	150	75 – 150	50
	TSP (24-hr AVG)	58~62	300	n/a	n/a
2# Guqie Village	SO <sub>2</sub> (1-hr AVG)	11~19	500	n/a	n/a
	SO <sub>2</sub> (24-hr AVG)	12~17	150	50 – 125	20
	NO <sub>2</sub> (1-hr AVG)	12~29	200	n/a	200
	NO <sub>2</sub> (24-hr AVG)	15~20	80	n/a	n/a
	PM <sub>10</sub> (24-hr AVG)	60~67	150	75 – 150	50
	TSP (24-hr AVG)	76~88	300	n/a	n/a

**Notes:** AQG = air quality guideline; AVG = average; EHS = environmental health and safety; NO<sub>2</sub> = nitrogen dioxide; PM<sub>10</sub> = particulate matter with diameter <10 $\mu\text{m}$ ; SO<sub>2</sub> = sulfur dioxide; TSP = total suspended particulate; WBG = World Bank Group

Source: EIT

133. Table 20 presents the **noise** monitoring results in the EIT for the Pingxiang Border Trade and Logistics Center which is next to the subproject 6 site. These results were adopted as baseline conditions in the EIT for this subproject. The WBG EHS noise standards are more stringent than the PRC's GB 3096-2008 standards. Exceedance of the PRC standards automatically means exceedance of the WBG EHS standards as well. The noise monitoring results indicate that the acoustic environment in these areas have been under the influence of natural and human activities. Exceedance occurred mainly at night although day time exceedance also occurred occasionally. The EIT indicated that the influencing factors causing night time exceedance were noise from insects at the Pingxiang Border Trade and Logistics Center site and from community noise due to human activities at the two villages.

**Table 20: Noise Monitoring Results for Subproject 6**

Monitoring Location	Monitoring Date	Day Time Noise Level [L <sub>Aeq</sub> = dB(A)]	Night Time Noise Level [L <sub>Aeq</sub> = dB(A)]
1# East boundary of the Pingxiang Border Trade and Logistics Center	2016.02.28	48.7	46.0
	2016.02.29	48.4	40.5
2# South boundary of the Pingxiang Border Trade and Logistics Center	2016.02.28	58.6	50.7
	2016.02.29	60.5	50.0
3# West boundary of the Pingxiang Border Trade and Logistics Center	2016.02.28	46.2	47.3
	2016.02.29	54.9	49.5
4# North boundary of the Pingxiang Border Trade and Logistics Center	2016.02.28	54.6	51.7
	2016.02.29	54.3	49.7
5# Busha Village	2016.02.28	55.3	50.6
	2016.02.29	52.8	45.2
6# Kafeng Village	2016.02.28	49.9	52.5
	2016.02.29	54.5	51.6

Monitoring Location	Monitoring Date	Day Time Noise Level [L <sub>Aeq</sub> = dB(A)]	Night Time Noise Level [L <sub>Aeq</sub> = dB(A)]
GB 3096-2008 Category 2 standard:		60	50
WBG EHS standard:		55	45
<b>Notes:</b> <span style="background-color: #f08080;">    </span> exceed both GB and WBG standards <span style="background-color: #d3d3d3;">    </span> exceed WBG standard but comply with GB standard			

Source: EIT

134. The nameless ditch that is 100 m south of the subproject site is a local drainage ditch for receiving overland runoff. It is about 3 m wide and 0.6 m deep, with a flow rate of about 0.02 m/s. Its **water quality** has been designated Category III standards in *Environmental Quality Standards for Surface Water* (GB 3838-2002) according to confirmation from local environmental protection bureau. Baseline surface water quality monitoring results conducted at the nameless ditch in January 2015 for the EIT for a nearby project, the China-ASEAN Agricultural Products Market Project (located about 900 m to the east of this subproject site) were adopted by the EIT for subproject 6. The monitoring results are presented in Table 21, showing exceedance of Category III water quality standard in chemical oxygen demand (COD) and total phosphorus (TP) indicative of potential influence from agricultural runoff and other human activities in the area.

**Table 21: Results of Surface Water Quality Monitoring at the Nameless Ditch for Subproject 6**

No.	Parameter	Monitoring Data			GB 3838-2002 Category III Standard
		2015.01.25	2015.01.26	2015.01.27	
1	Water temperature (°C)	19.7	20.3	20.1	—
2	pH value	7.62	7.58	7.66	6~9
3	SS (mg/L)	Not detected	Not detected	Not detected	—
4	COD <sub>Cr</sub> (mg/L)	25	18	15	20
5	BOD <sub>5</sub> (mg/L)	2.8	2.3	3.4	4
6	NH <sub>3</sub> -N (mg/L)	0.246	0.269	0.352	1.0
7	COD <sub>Mn</sub> (mg/L)	21.5	18.8	19.2	6
8	TP (mg/L)	0.21	0.20	0.20	0.2
<b>Note:</b> <span style="background-color: #f08080;">    </span> exceed Category III standard					

Source: EIT

#### D. Biological Resources, Ecology and Biodiversity

135. Field surveys and literature review undertaken during EIT preparation for the three subprojects revealed the absence of species that are under the national and/or international protection status within 1km of the subproject EIA sites. None of the plant/animal species are on the GZAR protection lists.



136. **Subproject 1: Construction of Fangchenggang Training Centre for Chinese and Vietnamese Workers and SMEs.** The area surrounding the subproject site is dominated by hilly terrain. Secondary woodland is prevalent, and the vegetation coverage rate is high. The trees in the secondary forest mainly consist of pine, maple and camphor. Planted species include pine, cedar and bamboo. Shrubs are mainly hill gooseberry and the shrub *Baeckea frutescens*. Herbaceous species are dominated by thatch, *Diranopteris dichotoma*, *Miscanthus floridulus*, and ferns. There are two ponds being used for shrimp culture nearby, the closest one being 500 m over the hill from the eastern boundary of the 'Fangchenggang Poly Tech Vocational School campus. The subproject site is within the Fangchenggang Poly Tech Vocational School campus, which is under construction and all vegetation has been removed from the site. The campus will be landscaped upon completion of civil works.
137. **Subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone.** The subproject site is within the Youyiguan Industrial Park with frequent human activities. No ecologically sensitive area, rare or endangered animal or plant is distributed on the site. Main plants include common shrubs and farmland. Main animals are common birds, frogs and insects. The site and its vicinity have low ecological value.
138. **Subproject 6: Pingxiang Border Trade Service Center.** According to field investigation, the subproject assessment area is mainly farming area with commercial crops and fruit trees such as small-leaved eucalyptus, sugarcane and peanut. The land is relatively flat with sporadic hilly terrain. Vegetation includes planted species such as pines and eucalyptus trees, and shrub-grassland. There is no record of animals/plants with national, provincial or international protection status in the area. The subproject site and vicinity has been partially cleared for the construction of the Pingxiang Border Trade and Logistics Center and vegetation cover is low. Ecological value is deemed to be low.
139. **Wildlife trafficking.** ADB commissioned Wildlife Conservation Society to undertake an assessment of potential illegal wildlife trafficking and trade in border areas in the program area. Wildlife enforcement data, consultations and site visits indicate shows that Guangxi is a major wildlife trafficking trade center between Viet Nam and PRC. Key animals and their products include ivory, reptiles and turtles. Pingxiang is the main trade center for hard wood, such as rosewood. Many CITES appendix II species were found in the market without CITES permits. A detailed report is being prepared and will be included as an appendix to the IEE.

## **E. Socio-economic Conditions**

### **1. Fangchenggang**

140. **Administration Setting and Demographic Profile.** The proposed subproject Fangchenggang Training Centre for Chinese and Vietnamese Workers and SMEs -is located in Gangkou District of the prefecture-level city of Fangchenggang, which is administered under two urban districts (Gangkou and Fangcheng), one city (Dongxing) and one county (Shangsi). The total land area of Fangchenggang is 6,181 km<sup>2</sup>. Fangchenggang had a total registered population of approximately 956,100 at the end of 2015, including 506,300 urban population (53.0%). Population density is approximately 155 persons per km<sup>2</sup>. The population is made up of 21 ethnic groups such as Han, Zhuang, Yao, and Jing among which ethnic minority groups make up 48%. It is the only border-port city in the PRC,

regarded as ‘the gateway of southwest China and a pearl at the Chinese border’.

141. **Economic Development.** In 2015, Fangchenggang’s gross domestic product (GDP) reached CNY 62.1 billion, with an increase of 10.2% over 2014. Table 22 compares Fangchenggang GDP in 2015 with GZAR and national averages, showing that Fangchenggang per capita GDP was considerably higher than both GZAR and national averages. The newly added employees totaled at 26,000 persons. The average annual disposal income of urban residents was CNY 28,433 per capita, which was higher than the GZAR average. Similarly, the average annual net income of farmers was CNY 10,429 per capita, which was also higher than the GZAR average. The income levels for both urban and rural residents in Fangchenggang were lower than the national averages of CNY 31,195 and CNY 11,422 respectively. In the Fangcheng District, the poverty population is 2.99% of the district population of 426,100, with 42 poor villages and 2,958 poor households.

**Table 22: Gross Domestic Product (GDP) Composition in Fangchenggang in 2015**

Region	GDP (100 Million Yuan)	Primary Industry (%)	Secondary Industry (%)	Tertiary Industry (%)	Per Capita GDP (CNY)
PRC	676,708	9.0	40.5	50.5	49,351
GZAR	16,803.12	15.3	45.8	38.9	35,190
Fangchenggang	620.72	12.2	56.9	30.9	67,972

Source: PPTA consultant.

142. **Communication and Transportation.** As a burgeoning coastal industrial port city, Fangchenggang plays a leading role in the development of Beibu Gulf economic zone. It is the most convenient passage to the sea in southwestern PRC as well as the frontier position in the connection and communication between PRC and ASEAN countries. It is the biggest port in GZAR and has been establishing trade relations with over 180 countries and regions. Railroad from Nanning to Fangchenggang and expressway from Qinzhou to Fangchenggang connect the city with the railroad and highway network across the country. The mail and communication industry has been developing quickly with program-controlled telephone and mobile phone available all over the city. The telephone coverage reaches 80%. The communication system is dominated by regional communication and telecommunication information and is mainly provided through network information service center.
143. **Natural Resources.** Important mineral deposits in Fangchenggang include manganese, titanium, iron and granite. The proven reserve of manganese totals 750,000 tons, titanium 1,000,000 tons, iron 117,200 tons and granite 150 million m<sup>3</sup>. Major agricultural crops include rice, corn, sweet potato, peanut, sugarcane, banana, pineapple and other tropical fruits. Forests account for more than 346,500 ha and forest coverage stands at approximately 57%.
144. There are four **protected areas**, three of which are national-level (the Beilunhe Estuary National Mangrove Nature Reserve, Shiwanda Mountain National Nature Reserve and Fangcheng *Jinhua* Tea National Nature Reserve). Protected areas account for 71,100 ha or 11.4% of the territory. None of them are within or close to the ecological assessment area of subproject 1.
145. **Tourism.** The long history, multiple ethnic culture, beautiful landscape and the clean sea

make Fangchenggang one of the most favoured tourist destinations in Guangxi. Tourist arrivals in 2014 amounted to 13.62 million or an increase of 15.0% and tourism revenues reached CNY 10.06 billion or an increase of 26.2% over 2014.

## 2. Pingxiang

146. **Administration Setting and Demographic Profile.** Pingxiang is a county-level city under the administration of the prefecture-level city of Chongzuo. Pingxiang administers 4 towns (Pingxiang, Youyi, Xiashi and Shangshi), 33 village committees, 8 residential committees and 260 villages. The total area of Pingxiang is 650 km<sup>2</sup> and the total population was 111,770 at the end of 2014, including 44,027 urban population (39.4%). Population density was approximately 172 persons per km<sup>2</sup>.

147. **Economic Development.** The GDP of Pingxiang in 2015 increased by 11.7% over 2014, the fiscal revenue by 6.2%, the investment on fixed assets by 27%, the total exports and imports in local enterprises by 12.1%, the total consumer goods retail sales by 10.3%, the urban residents disposable income by 6.1%, and the rural net income per capita by 8.9%. In 2015, Pingxiang City strived in social and economic development. New record was set in international trade. The total exports and imports in local enterprises exceeded USD 10 billion, accounting for 20.43% of and ranking first in the GZAR. As for international trade, the proportion of small-amount cross-border trade increased by 16.71% and ranked first nationally. The import and export of fruit cargo quantity reached 1.41 million tons, which accounted for 21% of the national total. The Pingxiang Port is the largest port for import and export of fruits cargo in China. Table 23 presents the Pingxiang GDP in 2014, in comparison with GZAR and national averages. Pingxiang per capita GDP was higher than both national and GZAR averages.

**Table 23: Gross Domestic Product (GDP) Composition in Pingxiang in 2014**

Region	GDP (100 Million Yuan)	Primary Industry (%)	Secondary Industry (%)	Tertiary Industry (%)	Per Capita GDP (CNY)
PRC	636,463	9.2	42.6	48.2	46,531
GZAR	15672.97	15.4	46.8	37.8	33,090
Pingxiang	53.91	8.9	28.9	62.2	47,043

Source: PPTA consultant.

148. The average annual disposable income of urban residents in 2014 was CNY 25,877 per capita, which was higher than the GZAR average of CNY 24,669 but lower than the national average of CNY 28,844. The poverty population is 9.17% of the city population of 111,770, with 10 poor villages and 10,256 poor households.

149. **Transportation and Infrastructure.** Pingxiang City is a gateway to PRC's southern border, and Youyiguan is the channel for land transportation between PRC and Viet Nam. Hunan-Guangxi Railway and National Road G322 run through its downtown. With Pingxiang Railway Station, national Class 1 port (such as Youyiguan) and local port (such as Ping'er Gate), the city is the largest and most convenient land access from PRC to Southeast Asia. The international transport railway of Hunan-Guangxi Railway –Hanoi– Pingxiang – Beijing – Moscow runs through from north and south. In 2007, Pingxiang Port became the largest land port in the PRC. It leads the GZAR in efficiency and coordination mechanism of simplified customs clearance procedures.

150. **Tourism.** Pingxiang is a border tourism destination between PRC and Viet Nam. There are plenty of scenic and historic spots sites in the city, including the magnificent Youyiguan as one of the Top Nine Border Gates in the PRC; and the mysterious and beautiful Baiyu Cavity. Historic sites include ancient China-France Battlefield, Underground Great Wall at Pinggang Mountain, Ancient Fort Barbette on Jinji Mountain, Daliangcheng City Wall and Mass Burial Ground from the Qing Dynasty. Historical and cultural landscapes include the Ancient Fort Barbette for Zhennanguan Revolt which is where Dr. Sun Yat-sen fired the first shot for revolt against the Qing Dynasty.

## **F. Physical Cultural Resources**

151. The three subproject EITs have reviewed the status of cultural heritage within the subprojects' area of influence and concluded that no physical cultural resource exist within the subproject areas of influence. This was also confirmed by local cultural bureaus. Should buried artifacts of archaeological significance be uncovered during the construction stage within the project areas, construction will be stopped and immediately reported to the Fangchengang and Pingxiang Cultural Bureaus in accordance with the PRC's *Cultural Relics Protection Law (2002)* and *Cultural Relics Protection Law Implementation Ordinance (2003)*.

## **G. Greenhouse Gas Emissions**

152. Mitigating climate change through energy saving and sound management to reduce GHG emissions is a priority in Guangxi. In view of climate change risks to the province, Guangxi established a Provincial Climate Change Adaptation Office within the Guangxi Development and Reform Commission in August 2011 with 15 staff. This office assigns binding CO<sub>2</sub> reduction targets (per unit GDP) to cities in the province, which becomes a binding target for the Five Year Plans (FYP).

# **V. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

## **A. Positive Impacts and Environmental Benefits**

153. **Cost Efficient Labor Pool made available with Skilled Labor from Viet Nam.** The project will support Guangxi's pilot of bringing in foreign labor, in this case workers from Viet Nam. Training facilities will be established and training programs provided to workers from Viet Nam as well as local workers from within and outside the border areas. Tranche 1 will include two training facilities in Fangchenggang (subproject 1) and Pingxiang (subproject 2) respectively. The Fangchenggang training center will provide training space on automotive repair, machinery, electronics and trade and commerce on the campus of the Fangchenggang Poly Tech Vocational School, helping Chinese and Vietnamese workers and SMEs obtain technical skills in these fields. The cross-border labor cooperation demonstration park in Pingxiang will provide skill development and exchange for employment and business ventures, training facilities and office space.
154. Tranche 1 will also support the improvement of training quality for Vietnamese and Chinese workers and local SMEs in the prefecture-level cities of Fangchenggang, Chongzuo and Baise (subproject 3). Tailor-made training programs in collaboration with local

universities will be developed to help the SME labor force in these border areas and from Viet Nam to enhance technical and language skills.

155. **Good and Reliable Access to Finance.** Tranche 1 will provide credit support to SMEs in Fangchenggang, Chongzuo and Baise through a financial institution using an entrusted loan modality (subproject 4). Under this modality, the Bank of Communication Nanning Branch will act as an intermediary between the GZAR government and SME borrowers. Loans, particularly for working capital, will be granted by the bank to eligible SMEs involved in cross-border trade in agribusiness, logistics, manufacturing and border tourism sectors in the above localities. Both the bank and the eligible SMEs must demonstrate commitment to adopt and implement ADB's safeguard standards.
156. **Strengthening of Business Development Services for SMEs.** The project will improve the provision of business development services in Fangchenggang, Chongzuo and Baise (subproject 9). The objectives of the business development services program are (i) to develop a more comprehensive mechanism under the SME category; and (ii) strengthening the SME support capabilities of local government authorities, existing SME service organizations such as service centers and business incubators, educational institutions, bank and non-bank financial institutions, emerging internet-based services, and local private sector providers of professional services. This business development services system will directly assist SMEs in areas of product research and development, marketing and branding, human resource management, and financial management. The improved business development services will contribute to the development of efficient and effective supply chains and enterprise clusters in the border areas of Guangxi.
157. **Improved Cross-border Financial Transactions and Investments.** Tranche 1 will include a study to explore the demand from SMEs for cross-border financial services, such as payments and settlements systems and guarantees against non-commercial risks, and recommend options for their provision in subsequent tranches. This will improve the cost-competitiveness, safety and expeditiousness in cross-border financial transactions and investments.
158. **Development of New Technologies such as e-commerce to Facilitate Access to Markets.** The project will help establish and/or improve logistics service platforms to remove bottlenecks at cross-border check points (subproject 5), which have impeded the cross-border e-commerce operation. It will also implement measures to improve customs and sanitary and phytosanitary services as they are related to e-commerce. An e-commerce cross-border logistics service platform will be put in place in the Longbang BEZ with real-time trade-logistics data exchange and trade process optimization. It will improve the effectiveness and efficiency in truck inspection, customs inspection and clearance, sanitary and phytosanitary services, supply chain management services, and cross-border order management.
159. **Improved Border Trade Infrastructure and Trade Related Services.** Tranche 1 will expand the border trade service center in Pingxiang to provide improved customs inspection and sanitary and phytosanitary services, warehouses and other ancillary facilities. This will facilitate trade between the residents living on both sides of the border and will provide better services and shopping experience to the Chinese and international tourists which are rapidly increasing in number in recent years.

## B. Impacts Associated with Project Location, Planning and Design

160. The proposed project will involve permanent land take for the construction of buildings and facilities in subprojects 1, 2 and 6, which is an irreversible impact from permanent change of land use and landscape. However, permanent land take for the three subprojects is relatively small, totaling approximately 16.3 ha (3.5 ha for subproject 1, 1.8 ha for subproject 2, and 11.0 ha for subproject 3). For subproject 1, all the buildings are located on the existing Fangchenggang Poly Tech Vocational School campus. For subproject 2, the site is within the existing Youyiguan Industrial Park. For Subproject 6, the site is located within an area zoned for commercial and business land use. In view of the small sizes of these sites and their locations and existing land uses, permanent land take impact though irreversible is deemed to be not significant. There will be no temporary land take since all construction staging activities will be conducted within these sites.

## C. Measures during Detailed Design and Pre-Construction

161. **Measures during Detailed Design.** The FSRs for subprojects 1 and 2 have included the requirement for designing barrier-free universal access to the buildings and facilities. The FSR for subproject 6 however has no mention of such features. Barrier-free universal access shall also be included in the design of the facilities in subproject 6. Detailed design of the buildings and facilities for all three subprojects shall also include energy saving features identified in the FSRs, which include materials for the outer wall, windows and roofs; electrical system and automation; air conditioning and ventilation; and light fixtures, etc. Technical design of training facility in subproject 2 and cold storage warehouse using liquid ammonia as coolant shall also incorporate environmental protection measures, as described below and in EMP.
162. The following environmental measures shall be included in the detailed design of the buildings and facilities for subprojects 1, 2 and 6:
- (i) Technical design of buildings and facilities shall include barrier-free universal access
  - (ii) Technical design of buildings and facilities shall include energy saving features in terms of building materials, electrical system and automation, water heating, air conditioning and ventilation, and lighting, etc. as recommended in the FSRs
  - (iii) Technical design of buildings and facilities shall consider other “green building” features besides energy saving, such as the use of recycled building materials, rainwater capture and reuse, green roofs, etc..
  - (iv) A high design standard shall be adopted in the stabilizing slope design for all slopes on the subproject 1, 2 and 6 sites.
  - (v) In subproject 1, noise monitoring shall be undertaken at the façade location of training building #3 to determine the level of traffic noise from the Port-Dongxing Class 1 Highway. If the day time noise level exceeds 60 dB(A), technical design of the training building #3 shall include noise insulated windows in accordance with GB 50118-2010 *Design Specifications for Noise Insulation of Buildings for Civil Use* 《民用建筑隔声设计规范》
  - (vi) In subproject 1, technical design of the drainage system for the Fangchenggang Poly Tech Vocational School shall adopt an 8% increase over the current standard as an adaptation measure for extreme rainfall due to climate change.
  - (vii) Technical design of the drainage system in subprojects 2 and 6 shall adopt a 10% increase over the national standard as an adaptation measure for extreme rainfall due to

- climate change.
- (viii) Technical design of the training center in subproject 2 shall include activated carbon absorbent for VOC removal and fabric filter for removal of dust composed of fine particulate matters.
  - (ix) Technical design of the liquid ammonia storage room for the cold storage warehouse in subproject 6 must comply with the requirements in PRC's GB 18597-2001 *Standard Pollution Control on Hazardous Waste Storage*.
163. During the PPTA stage site visits, the implementing agencies for the three subprojects were advised of the Leadership in Energy and Environmental Design (LEED)<sup>17</sup> certification scheme under the United States Green Building Council, and were encouraged to adopt green building design and construction features listed in the scheme and to apply for LEED certification for their facilities.
164. **Measures during Pre-Construction.** A number of environmental management measures shall be implemented in the pre-construction phase for the three subprojects to ensure environment management readiness. These include:
- (i) The PMO, as the executing agency, shall complete the following prior to construction commencement:
    - (a) Establish a project-specific grievance redress mechanism (GRM) including a complaint hotline.
    - (b) Appoint qualified staff as the environmental focal point to oversee EMP implementation.
    - (c) Appoint the project management consultant (PMC) (under subproject 10). The PMC shall have an environmental specialist on the team to undertake the role of external (third-party) environmental monitor (EEM) during loan implementation.
    - (d) Include specifications for environmental protection in all civil works tender documents and contracts.
    - (e) If necessary, update the EMP to reflect changes made (such as changes in construction methods and building layout, etc.) during the detailed design.
  - (ii) Each project implementation unit (PIU), as the implementing entity for the respective subprojects, shall complete the following prior to construction commencement:
    - (a) Appoint a qualified staff as the environmental focal point responsible for EMP implementation.
    - (b) Appoint an environmental supervision engineer (ESE, 环境监理) responsible for the environmental supervision of contractors and environmental audit of construction sites for the subproject.
    - (c) Appoint an environmental monitoring station (EMS, 环境监测站) to undertake environmental monitoring according to the EMP during construction and operation of the subproject.

#### **D. Impacts and Mitigation Measures during the Construction Stage**

165. **Impact Screening.** Construction activities will include site formation and construction of buildings and ancillary facilities such as internal roads and walkways, drainage system and

---

<sup>17</sup> Leadership in Energy and Environmental Design: <http://www.usgbc.org/leed>

landscaping etc. Potential environmental impacts arising from such activities would include air quality, noise, water quality, ecology, solid waste, and occupational health and safety.

166. Potential air quality impacts could occur due to fugitive dust generated on the construction site during earth works, from stockpiles of uncovered earth materials, and exhaust from construction equipment and vehicles. The use of powered mechanical equipment (PME) during construction activities will generate noise. Construction activities will generate process wastewater and construction workers will produce wastewater. Permanent land take might result in loss of vegetation. Construction works will produce construction and demolition (C&D) wastes and construction workers will generate refuse. Workers will face occupational health and safety issues working on construction sites, such as above ground construction works and exposure to volatile organic compound (VOC) from paints and other organic solvents during interior fit-out. These potential impacts are assessed and addressed below. Land contamination would not be an issue in this project since there has been no industrial activity within the construction footprint of the subprojects.

### 1. Impacts and Mitigation Measures on Physical Resources

167. **Air Quality.** Main air pollutants during the construction stage in this project include (i) fugitive emissions of dust during earth works and from uncovered stockpiles, (ii) fumes and exhaust from construction vehicles and machinery, and (iii) fugitive emissions of VOC from paints and organic solvents during interior fit-out of buildings and facilities. Premixed asphalt and/or concrete will be purchased commercially and the subprojects will not set up asphalt mixing or concrete batching plants on site.
168. The EITs estimated that the impact area of fugitive dust from construction sites would be confined to within 200 m from the boundary of the construction site if no mitigation measure is adopted. For subproject 1 this will mainly affect the students and staff on the campus of the Fangchenggang Poly Tech Vocational School, as well as the Shamuwan Village Shipping Group (approximately 150 residents) at approximately 450 m east of the campus and the staff and students (approximately 2,000) on the campus of Guangxi College of Finance and Economics at approximately 30 m west of the vocational school. For subproject 2, there are eight households with approximately 35 residents about 180 m to the east of the demonstration park site. For subproject 6, Kafeng Village (population 500) is located approximately 130 m south-east of the border trade service center. For exhaust from construction vehicles and machinery, the EIT estimated that the NO<sub>2</sub> emitted from these sources would comply with the *Ambient Air Quality Standards* (GB 3095-2012) Class 2 standard at a distance of 50 m from the source. Potential impact would therefore be confined to students and staff who are in close proximity to the building sites on the Fangchenggang Poly Tech Vocational School campus. Fugitive emission of VOC from paints and organic solvents during interior fit-out would mainly affect the construction workers on site and is thus an occupational health issue.
169. The Contractor shall include all necessary mitigation measures to reduce air pollution that would impact public and occupational health, by implementing the following air quality control measures. Some of these measures are generic measures that are applicable to all construction sites and construction activities. Yet these are effective measures and are also described in WBG's EHS guidelines.
- (i) Spray water at least twice each day on unpaved areas and exposed dust-prone



- stockpiles except on rainy days.
- (ii) Store dust-prone materials in areas with shelters on four sides and on top. If such materials have to be stored in open area, cover with strong tarpaulin.
  - (iii) Control vehicle speed to  $\leq 8$  km/h in unpaved areas. Post the speed limit sign in these areas.
  - (iv) Pave construction site exits with gravel or asphalt.
  - (v) Install wheel washing equipment or conduct wheel washing manually at each construction site exit to prevent trucks from carrying muddy or dusty substance onto public roads.
  - (vi) Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin.
  - (vii) Provide personal protective equipment (PPE) such as goggles, gloves and respirators to construction workers doing interior fit-out to minimize skin exposure to chemicals and inhalation of VOC.
  - (viii) Regularly maintain construction vehicles and machinery to minimize exhaust emissions from these sources.
  - (ix) Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor, and withholding of payment.
170. These measures are defined in the EMP. Contractors are required to ensure compliance with relevant PRC emission standards. Air quality monitoring will be carried out by a licensed environmental monitoring entity (external) during the construction period. Potential air quality impacts during the construction stage would be of short duration and localized. With the above mitigation measures in place, potential air quality impacts during the construction stage would be reduced to acceptable levels.
171. **Noise.** Noise is emitted by PME used during construction and construction vehicles travelling to and from the construction sites. Most noisy activities would include piling works and during the use of excavators, electric saws, breakers and external elevators (for transporting materials and workers to upper floors), with sound power levels of 105 dB(A) and higher if a combination of such equipment is deployed. Based on these sound power levels, the EITs estimated that the day time [70 dB(A)] and night time [55 dB(A)] noise limits in *Emission Standard of Environmental Noise for Boundary of Construction Site* (GB12523-2011) would be met at distances of 50 m and 200 m beyond the boundary of the construction site without any noise mitigation measure. For subproject 1, construction noise impact would affect students and staff on the campus of the vocational school and the Guangxi College of Finance and Economics during day time and night time (both schools have staff and student dormitories). The Shamuwan Village Shiping Group is separated from the vocational school campus in Fangchenggang by a slope and does not have a direct line of sight to the campus and therefore is unlikely to be affected by construction noise generated on the campus. For subprojects 2 and 6 in Pingxiang, residents in the eight households at 180 m to the east of the demonstration park and the Kafeng Village at 130 m to the south-east of the cross border trade serve center would be affected at night if night time construction occurs at these sites with no mitigation.
172. Contractors shall be required to implement the following mitigation measures for construction activities to meet PRC construction site and WBG recommended noise limits and to protect sensitive receptors. Some measures are generic and are applicable to all

construction sites and activities. Yet they are effective measures and are also in line with WBG's EHS guidelines. The use of temporary noise barriers or hoardings to shield off construction noise is particularly relevant to the construction of buildings and facilities on the Fangchenggang Poly Tech Vocational School site where students and staff will be having classes in nearby buildings on campus. Noisy construction activities shall also be avoided during examination periods.

- (i) No construction works shall be conducted between 22:00 to 06:00 hours. Piling works shall also be prohibited between 12:00 to 14:30 hours.
  - (ii) During construction, the contractor shall:
    - (a) ensure regular equipment repair and maintenance to keep them in good working condition to minimize noise
    - (b) deploy low noise machinery or the equipment with sound insulation
    - (c) erect temporary noise barriers or hoardings around noisy equipment to shield the noise from equipment
    - (d) provide the construction workers with suitable hearing protection (ear muffs) when working near noisy machinery such as during piling
    - (e) forbid the use of horns unless absolutely necessary, minimize the use of whistles
173. The World Bank Group's EHS guideline also provides the following guidance to mitigate noise and vibration impacts caused by the operation of pile drivers, earth moving and excavation equipment, concrete mixers, cranes and the transportation of equipment, materials and people during construction and decommissioning activities:
- (i) Plan activities in consultation with local communities so that activities with the greatest potential to generate noise and vibration are planned during periods of the day that will result in least disturbance.
  - (ii) Use noise control devices, such as temporary noise barriers and deflectors for impact and blasting activities, and exhaust muffling devices for combustion engines.
  - (iii) Avoid or minimize project transport through community areas.
174. Noise impacts during construction would be of short duration. Potential sensitive receptors will be exposed to short term, temporary and localized impacts. With the above mitigation measures in place, potential noise impacts during construction would be reduced to acceptable levels.
175. **Water Quality.** Uncontrolled wastewater and muddy runoff from construction sites could potentially pollute nearby water bodies and clog up drains. Discharge of domestic wastewater generated by the construction workers could also pollute nearby water bodies if not treated. The EITs estimated that process wastewater for the subprojects would contain approximately 250 mg/L suspended solids (SS) and 20 mg/L total petroleum hydrocarbon (TPH). Process wastewater would be treated by oil-water separation then sedimentation on the construction site. The process wastewater after treatment would be used for dust suppression on site resulting in no discharge of process wastewater from the construction sites.
176. Domestic wastewater generated by the construction workers has been estimated by the EITs to range from 8 m<sup>3</sup>/d to 20 m<sup>3</sup>/d for the subprojects depending on the number of construction workers on site at any given time. Major pollutants are chemical oxygen demand (COD), biochemical oxygen demand (BOD), suspended solids (SS) and ammonia

nitrogen (NH<sub>3</sub>-N). For subproject 1 the vocational school in Fangchenggang has installed an underground package wastewater treatment plant with a treatment capacity of 2,500 m<sup>3</sup>/d, treating wastewater to Class 1 standard specified in *Integrated Wastewater Discharge Standard* (GB 8978-1996) before discharging through local sewer network into the sea at Xiwan. The construction workers would use toilet facilities on the campus and the wastewater would be properly treated prior to discharge. For subproject 2 the demonstration park in Pingxiang, the domestic wastewater from construction workers would be treated by septic tanks installed on the construction site. For subproject 6 the cross-border trade services center in Pingxiang, domestic wastewater generated by the construction workers would be collected and conveyed to the wastewater treatment station at the existing neighboring cross-border trade logistic center for treatment.

177. The contractors will implement the following mitigation measures to prevent water pollution:

- (i) Collect runoff from construction sites with drainage ditches to prevent runoff containing muddy water from polluting nearby roads, land and water bodies.
- (ii) Install and operate oily-water separators and sedimentation tanks on construction sites to treat process water and muddy runoff with high concentrations of total petroleum hydrocarbon and suspended solids. If necessary, use flocculants such as polyacryl amide (PAM) to facilitate sedimentation.
- (iii) Provide portable toilets and small package wastewater treatment plants and/or septic tanks on construction sites for the workers. If there are nearby public sewers, install interim storage tanks and pipelines to convey wastewater to public sewers.
- (iv) Store fuels, oil, and other hazardous materials on construction sites within secured areas on impermeable surfaces protected by bunds and provided with cleanup kits.
- (v) Clean up any chemical spills into drains and water bodies within 24 hours of the occurrence, with contaminated soils and water treated according to HJ 25.4-2014 *Technical Guidelines for Site Soil Remediation*. Records must be handed over without delay to the PMO and local EPB.

178. With the above measures in place, potential water quality impact should be mitigated to acceptable levels.

179. **Solid Waste.** Solid waste generated during construction will include refuse generated by construction workers on construction sites and construction and demolition (C&D) waste generated during site formation and building construction. The EITs estimated that the quality of refuse generated by construction workers on the construction sites would be less than 0.1 t/d. Refuse bins will be provided on construction sites for collection of refuse, which would then be collected by local sanitation bureaus regularly for disposal. For subproject 1, the Fangchenggang Poly Tech Vocational School campus is under construction and the sites for the buildings in subproject 1 would have been formed by the time construction for these buildings commences. The sites for other two subprojects would require import of fill for site formation. All three subprojects therefore would not produce excavated spoil materials needing disposal. The EITs estimated that for each m<sup>2</sup> of floor area to be constructed approximately 50-60 kg of C&D waste would be generated. The three subprojects combined would therefore generate approximately 4,600 t C&D waste. Reuse and recycling of C&D waste on site would be considered first. Those that cannot be reused would be transported to locations designated by local construction authorities for storage or disposal of C&D waste.

180. The contractors will implement the following mitigation measures to manage C&D waste and refuse generated during construction:

- (i) Maximize the re-use of C&D wastes on the project.
- (ii) Store all refuse and C&D waste generated on construction sites in designated areas and remove them from these locations for disposal or reuse regularly.

181. With the above measures in place, solid waste generated during construction should have minimal environmental impact.

## **2. Impacts and Mitigation Measures on Biological Resources, Ecology and Biodiversity**

182. The three subproject sites and vicinity have been assessed to have low ecological value. The Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs (subproject 1) will be constructed on the existing campus of the Fangchanggang Poly Tech Vocational School. The site has been cleared with vegetation removed and part of the campus is already under construction (see Figure 5). The site in its present form has no ecological value. The site for the Cross-border Labor Cooperation Demonstration Park (subproject 2) is located in the Pingxiang Border Economic Zone. Part of the site has already been cleared and leveled and other parts are covered by mainly shrubs and grass (Figure 6). The site for the Pingxiang Border Trade Service Center is located within the area zoned for commercial and financial land use, and is found to be dominated by common and planted trees, shrubs and grassland. Field surveys and literature review undertaken during EIT preparation and by PPTA consultants for the three subprojects revealed the absence of national, provincial and international protected flora and fauna species within the ecological area of influence. The sites are not located in any protection area. Total land take by the three subprojects would be small, approximately 16.3 ha. Upon completion of civil works, all the three sites will be landscaped to improve amenity and aesthetic value for the users and the environment. Ecological impact is anticipated to be minimal. The contractors will implement the following mitigation measures during construction for protection of biological resources.

- (i) Construction workers are prohibited from capturing any wildlife during construction.
- (ii) Where a tree has to be removed or an area of grassland disturbed, replant trees and re-vegetate the area after construction. Tree planting shall use local species with local provenance. Planting of exotic or invasive species shall be prohibited.

## **3. Impacts and Mitigation Measures on Socio-economic Resources**

183. **Land Acquisition and Resettlement.** Land for all three subprojects was acquired prior to ADB funding and not in anticipation of ADB funding. The land for subprojects 1 and 2 was acquired in 2013 and the land for subproject 6 was acquired in 1993. No additional land acquisition, house demolition and resettlement would be induced as a result of this project. It was confirmed that all land acquisition undertaken by local governments was in compliance with applicable PRC laws and regulations and there would be no pending land acquisition and resettlement issue.

184. **Physical Cultural Resources.** Assessment undertaken did not reveal the presence of physical cultural resources within the footprints of the three proposed subproject sites. Should buried artifacts of archaeological significance be uncovered during the construction stage within these sites, construction will be stopped and immediately reported to the local cultural bureau in accordance with PRC's *Cultural Relics Protection Law* (2002) and the *Cultural Relics Protection Law Implementation Ordinance* (2003).
185. **Occupational Health and Safety.** Due to its nature the construction industry is considered to be one of the most hazardous industries where a number of potentially hazardous operations are carried out. The contractors will implement the following measures and precautions to protect the health and safety of construction workers.
- (i) Environment, health and safety officer: Each contractor shall appoint at least one environment, health and safety (EHS) officer to manage occupational health and safety risks on construction sites by applying the following measures.
  - (ii) Construction site sanitation: (i) Each contractor shall provide adequate and functional systems for sanitary conditions, toilet facilities, and waste management with waste separation; (ii) Effectively clean and disinfect the site. During site formation, spray with phenolated water for disinfection. Disinfect toilets and refuse bins and ensure timely removal of solid waste; (iii) Exterminate rodents on site at least once every 3 months, and exterminate mosquitoes and flies at least twice each year; (iv) Provide public toilets in accordance with the requirements of labor management and sanitation departments in the living areas, if any, on construction site, and appoint designated staff responsible for cleaning and disinfection; (v) Construction site domestic wastewater shall be discharged into the municipal sewer system or treated on-site using a portable system.
  - (iii) Occupational safety: (i) Provide personal protective equipment (safety hats and shoes, high visibility vests, and safety belt and harness for above ground works) to all construction workers and strictly enforce all workers to put on the PPE; (ii) Provide safety goggles, gloves and respiratory masks to workers doing interior fit-out works; (iii) Provide ear plugs to workers operating and working near noisy PME.
  - (iv) Food safety: (i) Inspect and supervise food hygiene in canteens, if any, on site regularly. Canteen workers must have valid health permits. If food poisoning is discovered, implement effective control measures immediately to prevent it from spreading.
  - (v) Disease prevention, health services: The following disease prevention measures and health services shall be undertaken: (i) Construction workers must have physical examination before start working on site. If infectious disease is found, the patient must be isolated for treatment to prevent the disease from spreading. From the second year onwards, conduct physical examination on 20% of the workers every year; (ii) Establish health clinic at location where workers are concentrated, which should be equipped with common medical supplies and medication for simple treatment and emergency treatment for accidents; (iii) Provide induction and training by local health departments on prevention and management of communicable diseases.
  - (vi) Social conflict prevention: No major social risks and/or vulnerabilities are anticipated as a result of the project. The project construction workers will be engaged locally. Civil works contracts will stipulate priorities to (i) employ local people for works, (ii) ensure equal opportunities for women and men, (iii) pay equal wages for work of equal value, and to pay women's wages directly to them; and (iv) not employ child or forced labor. In addition, subproject 3, provides specific support for improvement of the training curriculum for Vietnamese and Chinese workers and local SMEs, including cultural etiquette and considerations.

186. **Community Health and Safety.** Temporary traffic diversions, continual generation of noise and dust on haulage routes, and general hindrance to local access and services are common impacts associated with construction works within or nearby local settlements. The potential impacts on community health and safety will be mitigated through a number of activities defined in the EMP.

187. The contractors will implement the following measures:

- (i) Traffic management: A traffic control and operation plan shall be prepared together with the local traffic police prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls and planning in advance.
- (ii) Information disclosure: (i) Construction billboards, which include construction description, schedule, responsible person and complaint phone number, shall be erected at the entry to each construction site and construction staging area. (ii) Residents and businesses shall be informed in advance of noisy construction activities such as piling, given the dates and duration of expected disruption and made aware of the project GRM. (iii) Clear signs shall be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc. and raising awareness on safety issues.
- (iii) Construction sites: All sites shall be made secure, discouraging access by members of the public through appropriate fencing, signage and/or security personnel, as appropriate.

188. **Utilities Provision Interruption.** Construction may require relocation of municipal utilities such as power, water, communication cables. Temporary suspension of services (planned or accidental) can affect the economy, industries, businesses and residents' daily life. Mitigation of impacts on utilities provision will be through a number of activities defined in the EMP, to be incorporated in the tender documents and construction contracts:

- (i) Contractors shall assess construction locations in advance and identify potential for disruption to services and risks before starting construction. Any damage or hindrance/disadvantage to local businesses caused by the premature removal or insufficient replacement of public utilities is subject to full compensation, at the full liability of the contractor who caused the problem.
- (ii) If temporary disruption is unavoidable the contractor shall, in collaboration with relevant local authorities such as power company, water supply company and communication company, develop a plan to minimize the disruption and communicate the dates and duration in advance to affected persons.

## **E. Impacts and Mitigation Measures during the Operational Stage**

189. **Impact Screening.** During operation, subproject 2 the cross-border labor cooperation demonstration park in Pingxiang would have air quality and occupational health impacts. This subproject will have a training center providing training on the finishing of small home appliances requiring paint spraying releasing VOC, red wood furniture sanding and polishing generating dust and fine particulate matters, and oven drying of nut products generating smoke. Operational noise would not be an issue for all three subprojects since the activities

would be conducted inside buildings. All three subprojects would have water quality impact from the discharge of domestic wastewater containing COD, BOD, SS and NH<sub>3</sub>-N from people using these facilities and living in the dormitories, as well as some process wastewater containing mainly SS from subproject 2 due to training activities described above. All three subprojects also have municipal solid waste (MSW) generated from the people using these facilities and living in the dormitories. Subproject 6 would also have an environmental risk issue from the storage of liquid ammonia as a coolant for cold storage. These impacts and respective mitigation measures are described below.

## 1. Impacts and Mitigation on Air Quality

190. Subproject 2 the cross-border labor cooperation demonstration park in Pingxiang will provide training to Vietnamese and Chinese workers on the finishing of small home appliances, red wood furniture and nut products. Finishing of small home appliances would involve paint spraying, which would emit VOCs during the process. Finishing of red wood furniture would require sanding and application of protective polish, which would generate dust composed of fine particulate matters and also VOCs. Oven drying of nut products would generate steam. The design of the training center according to the EIT shall include the provision of activated carbon absorbent and fabric filter to prevent VOC and fine particulate matters from escaping into the atmosphere. This requirement has also been included in the EMP and described above as a means of mitigation to be incorporated into the building design during the design stage. The key issue therefore relates to the health and safety of the teachers and students undertaking these activities inside the training center and the following mitigation measure shall be implemented during the operation of the training center in subproject 2.
- (i) For subproject 2, the staff and students in the training center shall be provided with PPE such as goggles, respirators and ear plugs for health and safety protection from VOC, fine particulate matters and noise during training.
  - (ii) Staff and students will also be fully trained on use, handling, storage of any potentially hazardous substances that may pose a risk to human health

## 2. Impacts and Mitigation on Water Quality

191. For subproject 1, domestic wastewater generated by the staff and students using the facilities on the Fangchenggang Poly Tech Vocational School would be collected and conveyed to the underground package wastewater treatment plant with a treatment capacity of 2,500 m<sup>3</sup>/d on campus, treated to Class 1 standard prescribed in GB 8978-1996 *Integrated Wastewater Discharge Standard*, then discharged to the sea at Xiwan via public sewer.
192. For subproject 2, domestic wastewater from the people using the facilities and from the canteen at the cross-border labor cooperation demonstration park in Pingxiang has been estimated to be approximately 272 m<sup>3</sup>/d, and would be treated with septic tanks before discharging into municipal sewer for further treatment at the Xiashi Town WWTP, which was commissioned in August 2016. Wastewater from the canteen would go through oil-water separation first before entering the septic tanks. Process wastewater from the training center, which would contain small quantities of suspended solids, would go through sedimentation on site. The wastewater after sedimentation would be re-used on site for site cleaning and

irrigation.

193. For subproject 6, domestic wastewater from the people using the facilities at the border trade service center in Pingxiang has been estimated by the EIT to be approximately 114 m<sup>3</sup>/d. This will be collected and conveyed to the wastewater treatment station on the neighboring Pingxiang Border Trade Logistics Center for treatment. Upon completion of the Kafeng Wastewater Treatment Plant, domestic wastewater from subproject 6 would be conveyed to this WWTP for treatment.
194. The quantities of wastewater generated during operation of the three subprojects are relatively small. All wastewater would be properly collected and treated. Potential adverse impact on water quality is not anticipated.

### **3. Impacts and Mitigation on Solid Waste**

195. The quantities of municipal solid waste (MSW) generated by the people using the facilities in the three subprojects would be relatively small, estimated by the EITs to be approximately 2 t/d for subproject 2 and 6.8 t/d for subproject 6. Such MSW would be regularly collected by local sanitation bureaus for proper disposal at either the Fangchenggagng Municipal Solid Waste Treatment Center (treatment capacity 300 t/d) or the Pingxiang Municipal Solid Waste Resource Reuse Treatment Center (treatment capacity 150 t/d). The training center in subproject 2 would also have small quantities of chemical waste, including metal chippings and oily clothes. These will be collected by companies approved for the handling and treatment of chemical waste, for rendering non-toxic prior to disposal. According to permitting information on the web-site of the Guangxi Environmental Protection Department, there are 25 licensed hazardous waste operators in the GZAR as of December 2015. The following mitigation measures have been specified in the EMP for subproject 2.
- (i) Chemical and other hazardous waste generated from the training center in subproject 2 shall be collected by company approved to collect and treat chemical waste.

### **4. Environmental Risk from Liquid Ammonia**

196. Subproject 6 provides warehousing for storage of nut products and produce, which includes cold storage using liquid ammonia as a coolant. Ammonia is a colorless gas and an irritant, having a freezing point of -77.7 °C, a boiling point of -33.5 °C, and a relative density (with air) of 0.59. The EIT for subproject 6 indicated that based on laboratory toxicity test using rats, its LC<sub>50</sub><sup>18</sup> was found to be 1,390 mg/m<sup>3</sup> after inhalation for four hours, and the maximum allowance concentration for short time exposure was 30 mg/m<sup>3</sup>. Inhalation of liquid ammonia would cause irritation to the mucosa in the body. Exposure to liquid ammonia would result in burning sensation to the eyes and skin. Inhalation of low concentrations would cause running tears, painful pharynx and coughing. More serious effects would include pulmonary edema. Inhalation of high concentrations would cause necrosis of the mucosa, resulting in asphyxiation, acute intoxication and fatality.
197. The EIT for subproject 6 undertook an environmental risk assessment for accidental

---

<sup>18</sup> LC<sub>50</sub> is the lethal concentration that causes 50% mortality on the number of animals used in the laboratory toxicity test.



leakage of liquid ammonia from the cold storage in accordance with HJ/T 169-2004 *Technical Guideline for Environmental Risk Assessment of Construction Project*. According to HJ/T 169-2004 the threshold for liquid ammonia storage to be deemed a “major source of danger” is 10 t. Based on the EIT, the maximum quantity of liquid ammonia to be stored on site at any given time would be 5 t. The cold storage site is therefore not a “major source of danger”. Based on HJ/T 169-2204 technical guideline, the EIT assumed a liquid ammonia leakage incident lasting 20 minutes, at a rate of 0.158 kg/s. Numerical modeling was conducted to predict the dispersion of ammonia gas from 5 – 10 minutes after leakage. Results show that from 5 to 20 minutes after leakage, the maximum ground level concentration of ammonia would be 734.87 mg/m<sup>3</sup> and the plume would be confined to within a distance of 25.8 m from the point of leakage. After 25 minutes the maximum ground level concentration would decrease to 2.66 mg/m<sup>3</sup> and would occur at a distance of approximately 900 m from the point of leakage. After 30 minutes the maximum ground level concentration would be further reduced to 0.79 mg/m<sup>3</sup> and would occur at a distance of approximately 1.77 km from the point of leakage.

198. The above prediction indicates that the impact from the ammonia plume due to accidental leakage at the cold storage site would potentially affect an area within 26 m from the point of leakage for the first 20 minutes. Within this zone for the first 20 minutes, the maximum ground level concentration is approximately 53% of the LC<sub>50</sub> concentration of 1,390 mg/m<sup>3</sup> and exceeds the maximum allowance exposure concentration of 30 mg/m<sup>3</sup>. The impact of ammonia due to accidental leakage from the cold storage would therefore be confined to a distance of approximately 26 m lasting for 20 minutes from the point of accidental leakage.
199. The nearest sensitive receptor to the cold storage site was originally Kafeng Village at a distance of 113 m to the southeast, followed by Busha Village at a distance of 352 m to the southwest, and Kafang Village at a distance of 358 m to the south. The EIT specified buffer distances of 300 m downwind of the highest frequency summer wind direction and 150 m for other wind directions for separating the cold storage site from the nearest villages. As a result of this specification in the EIT, the cold storage site was moved to its present location at the northern end of the warehouse as shown in Figure 4. The present location is 336 m from Kafeng Village, 357 m from Busha Village, and 474 m from Kafang Village. The EIT also specifies that the design of liquid ammonia storage room must comply with the requirements in GB 18597-2001 *Standard Pollution Control on Hazardous Waste Storage*. This has been specified in the EMP under environmental protection measures during the detailed design stage. The following mitigation measure and assurance has also been included in the EMP.
- (i) Handling and storage of liquid ammonia shall conform to the *Dangerous Chemicals Safety Management Ordinance*, 2011
  - (ii) For the cold storage warehouse in subproject 6, the maximum allowable quantity of liquid ammonia stored on site shall not exceed 5 tons at any given time.
  - (iii) An emergency response plan for liquid ammonia leakage shall be prepared.
  - (iv) PPE such as goggles and respirators shall be placed in conspicuous locations outside the liquid ammonia storage room for use by all workers inside the room.
  - (v) Workers shall be trained on the handling of liquid ammonia drums, the use of the cold storage facility, and emergency response should liquid ammonia leakage occur.

## **5. Greenhouse Gas Emissions and Energy Efficiency**

200. All the facilities in all three subprojects use electricity supplied by the local power companies. The mild winter climate in Guangxi does not need boiler heaters in the winter. There is no greenhouse gas emission during the operation of these facilities.
201. Based on the FRSs, the design of these facilities will include energy efficient and energy saving features. These include optimizing the layout of electrical cables to minimize power loss, using energy efficient transformers and optimize their numbers and locations, optimizing the locations of the switch boxes to reduce power loss during transmission, zoning of lighting areas, lighting motion detectors, optimizing illumination intensity, maximizing the use of natural light for illumination, and using solar water heaters, water saving faucets and toilet flushing, etc. The FSR for subproject 1 estimated that the use of energy efficient features would reduce energy consumption by 50% or more compared to the business as usual scenario.

## **F. Cumulative Impacts**

202. Cumulative impacts could arise from other projects in the vicinity particularly other buildings or infrastructure being constructed concurrently with the construction stage of the three subprojects. One possibility is ongoing construction activities on the Fangchenggang campus of the Guangxi College of Finance and Economics next to the campus of the Fangchenggang Poly Tech Vocational School in subproject 1, where there could be cumulative construction impacts during the construction stage of subproject 1. However it is likely that when construction activity in subproject 1 commences, construction activities on the Guangxi College of Finance and Economics campus would have been completed resulting in no cumulative impact. For subproject 2, Figure 10 above shows existing buildings to the west that might be remodeled to provide warehouses and logistics base. The domestic project proposal for subproject 2 also mentioned the construction of 2- and 3-storey standard size factory buildings and warehouses with a total floor area of 60,000 m<sup>2</sup> and a land take of 52,000 m<sup>2</sup> to the immediate south of the subproject site. The factory buildings and warehouses are for rental to SMEs and no program was provided on their construction. At this time no information is available on potential construction works from other projects that could overlap with the construction stage of the three subprojects.
203. Construction related cumulative impacts would be effectively minimized by adopting proper mitigation measures, including: (i) coordination between all project components and other projects in the area of influence in terms of construction schedule, possible access road and borrow/disposal sites and spoil sharing; (ii) contractors will develop material transport plan with consultation of local road management authority and local community; (iii) enforcement of good construction management to minimize dust, noise and waste generation; (iv) education of construction workers to minimize social disturbance and cultural conflict; (vi) provision of temporary access to local traffic to minimize construction traffic interruption; (vii) proper maintenance of the access roads and timely restoration/strengthening upon completion. With effective implementation of good construction management measures, these common construction-related cumulative impacts can be adequately mitigated to acceptable levels.

## **G. Indirect and Induced Impacts**

204. The Tranche 1 subprojects support cross-border activity but are not anticipated to have significant indirect or induced environmental impacts. Subproject 4 (environment category FI), will involve specific screening to identify potential risks and environmental assessment requirements, including management of indirect and induced impacts.

## **VI. ANALYSIS OF ALTERNATIVES**

### **A. No Project Alternative**

205. The project has five outputs to improve regional cooperation and integration opportunities in border areas in Guangxi linking PRC and Viet Nam. Without the project, the border areas in Guangxi will continue to have difficulties in attracting investments for SMEs due to lack of infrastructure and services in the border economic zones, lack of new technologies such as e-commerce for accessing markets at and beyond the borders, inefficient cross-border financial transactions and settlement, and inability in customs inspection and clearance to handle the fast growing cross-border trade.

### **B. Alternatives Considered**

206. The buildings and the facilities in the three subprojects are confined to within border areas, situated on an existing school campus (subproject 1), in an existing industrial park (subproject 2) and in an area zoned for its designated land use (subproject 6). The scope in the consideration of alternative sites was very much limited. The FSRs suggested different illumination intensities for different buildings, different types of light fixtures and toilet hardware for energy and water conservation, which would be considered during detailed design.
207. Subproject 6 considered an alternative location on the border trade service center site for the cold storage warehouse which uses liquid ammonia as coolant. The original location did not meet the buffer distances requirements (300 m downwind of the highest frequency summer wind direction and 150 m for other wind directions) between the cold storage warehouse and the nearest village. The alternative location met the above buffer distance requirement and was selected.

## **VII. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION**

### **A. Legislative Framework for Consultation, Participation and Information Disclosure**

208. Meaningful participation and consultation during project planning, feasibility study, design and implementation is an important environment safeguards requirement. It can directly reflect the public's perceptions of environmental quality in the project's area of influence. Public participation and environmental information disclosure provisions are among the most significant changes introduced in the amended *Environmental Protection Law* (2014). The legislative framework also includes decrees on the preparation of EIA summaries for the purpose of public disclosure (see Table 2, item #25), information disclosure on construction project EIAs by government (Table 2, item #29), method for public participation in environmental protection (Table 2, item #31), and technical guidelines (for comment) for

public participation in EIAs (Table 2, item #57).

209. ADB Safeguard Policy Statement (2009) requires meaningful participation, consultation and information disclosure. ADB Public Communications Policy: Disclosure and Exchange of Information (2011) requires that the borrower shall provide safeguard information to affected people in a timely manner, in an accessible place, and in a form and language(s) understandable to them.

## B. Information Disclosure

210. Information disclosure on the three subprojects involving civil works was conducted during public consultation for these three subprojects. Information disclosed included the scope of these subprojects, potential environmental impacts and mitigation measures during construction and operation. ADB's environmental safeguard requirements with emphasis on the implementation of EMP and GRM during subproject implementation. The project environmental information will also be disclosed by ADB as follows: (i) this IEE is available at [www.adb.org](http://www.adb.org); (ii) copies of the domestic EITs (in Chinese) for the subprojects are available on request from the PMO; and, (iii) environment progress will be reported in the quarterly project progress reports and the annual environmental monitoring reports which will be disclosed on ADB's project website ([www.adb.org](http://www.adb.org)).

## C. Consultation and Participation during Project Preparation

211. Public consultation in form of discussion forums on environmental matters were held on 15 August 2016 in the meeting room of Pingxiang Youyiguan Industrial Park Management Committee (for subproject 2) and Pingxiang Kafeng Village committee (for subproject 6), and on 17 August 2016 in the meeting room of Fangchenggang Jiangshan Land Acquisition and Resettlement Headquarter Office (for subproject 1). They were chaired by the Pingxiang City and Fangchenggang City PMOs respectively, and all supported by the PPTA environmental specialists. A total of 60 participants attended (Table 24) including representatives of government agencies, affected residents and other concerned stakeholders from the cities. Figure 16 shows photographs taken during these meetings.

**Table 24: Communities, Enterprises, and Government Agencies Participated in the Public Consultation Discussion Forums**

No.	Communities/Enterprises/Government Agencies
1	Pingxiang City EPB
2	Pingxing City Finance Office
3	Development and Reform Bureau of Pingxiang City
4	Land and Resource Bureau of Pingxiang City
5	Xiashi Town Government
6	Pingxiang Border Economic Co-operative Zone
7	Pingxiang City urban investment company
8	Pingxiang National Trade Company
9	Fangchenggang Water Resource Bureau
10	Land Acquisition and Resettlement Headquarter Office of Fangchenggang City
11	PMO of Pingxiang City
12	PMO of Fangchenggang City
13	Nalou Village
14	Pingxiang City Xiashi Community

No.	Communities/Enterprises/Government Agencies	
1	Pingxiang City EPB	
2	Pingxing City Finance Office	
3	Development and Reform Bureau of Pingxiang City	
4	Land and Resource Bureau of Pingxiang City	
5	Xiashi Town Government	
6	Pingxiang Border Economic Co-operative Zone	
7	Pingxiang City urban investment company	
8	Pingxiang National Trade Company	
9	Fangchenggang Water Resource Bureau	
10	Land Acquisition and Resettlement Headquarter Office of Fangchenggang City	
11	PMO of Pingxiang City	
12	PMO of Fangchenggang City	
13	Pingxiang City	Nalou Village
15		Bannan Village
16		Liuling Village
17		Kafeng Village
18	Fangchenggang City	Shamuwan Village
19		Fangchenggang Polytechnic School
20		Chongqing Engineering Design Institute
21		Gaungxi Caixia
22		No.2 Guangxi Construction Group

**Figure 16: Discussion Forums for the Three Subprojects**



Source: PPTA consultant

212. The officers from the local PMOs explained the content of the subprojects. The PPTA international specialist introduced the ADB safeguard requirements for IEE and EMP during construction and operation stages, basic specifications of the project, the findings on potential environmental impacts and mitigation measures, and project- specific GRM.

213. The main issues raised by the participants and the responses from local PMO and PPTA team are shown in Table 25. Basically, the concerns are related to dust, noise and wastewater impacts during construction and wastewater generated during operation.

**Table 25: Main Issues and Responses**

No	Subproject	Main Issue	Response
1	Subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang BEZ	Dust impact on nearby villagers during construction period	The nearest sensitive point from project is residents in scattered households, about 180m to the east, and located at the upwind direction of construction site. During construction period, a series of measures such as covering, watering of unpaved areas and stockpiles, vehicle wheel washing, etc. will be undertaken to control dust impact.

No	Subproject	Main Issue	Response
2		Noise impact on nearby villagers during construction period	During construction period, noise impact on residents will be mitigated through the adoption of temporary noise barriers, construction machinery with low noise, construction time supervision, etc.
3		Wastewater discharge impact during project operation	Wastewater during project operation is mainly domestic sewage and canteen waste water, without production waste water. It will be discharged to municipal sewage pipe network after pretreatment, flow into Xiashi Town WWTP for treatment, and then be discharged after reaching the standard.
4	Subproject 6: Expansion of Pingxiang Border Trade Service Center	Dust impact on site during construction period	The nearest sensitive point from project is Kafeng Village, about 130m to the southeast. The civil construction will last for about 9 months, during construction period, the range and degree of dust impact will be reduced through a series of measures for construction dust and spoil transportation dust control, such as the incorporation of water sprinkling equipment, fence and barrier setting, and coverage of transportation vehicles in the contract.
5		Noise control during construction period	On construction site, noise impact will be controlled through measures such as selecting equipment with low noise, adopting sound insulation and absorption material to set up soundproofing shed, and strictly prohibiting construction operations with noise pollution during noontime (12: 00-14: 30) and nighttime (22: 00-6: 00), to ensure the normal life of nearby residents.
6	Subproject 1: Fangchenggang Polytechnic School Construction	Wastewater impact on nearby residents during construction period	The east side of project area is adjacent to Shipping Group in Shamuwan Village, about 500 m from the villagers' shrimp ponds; west side is about 30m from Fangchenggang Campus of Guangxi College of Finance and Economics. Design Institute has designed a rainwater collection system for construction site to collect the surface runoff containing sediment during rainy season, and discharge after the sedimentation tank processing, which can prevent sediment-contained waste water from flowing into nearby villages or shrimp ponds through drainage ditch or surface runoff, and affecting residents' living environment and water quality of shrimp ponds. Meanwhile, settling tank will be used for the treatment of construction waste water, and attention will be paid to water resource protection of nearby backup wells.
7		Dust control during construction period	The north side of project is adjacent to Class I highway from the port to Dongxing. During construction period, measures such as setting up fence and barriers, site water sprinkling, and covering transportation vehicles will be taken to prevent the impact of civil construction and transportation within the range of surrounding sensitive points.
8		Noise impact during construction period	Construction site is close to surrounding sensitive points, therefore night construction work will be avoided, and adopt noise mitigating measures to reduce the impact on residents. Meanwhile, construction period will be arranged properly and completed as soon as possible.

#### **D. Future Plans for Public Participation**

214. Meaningful consultation to safeguard the environment and local residents will continue before and throughout construction and operation phases consisting of information disclosure on project proponent and relevant government department web sites, posting of project information on community notice boards and discussion forums. The PMO and the PIUs will be responsible for organizing the public consultations, with the support of the External Environmental Monitor (EEM) on the project management consultant (PMC) team. The contractors will be required to communicate and consult with the communities in the project area of influence, especially those near the road alignments. Clearly visible public notice boards will be set at each work site to provide information on the purpose of the project activity, the duration of disturbance, the responsible entities on-site (contractors, IAs), and the project level Grievance Redress Mechanism (GRM). Contact information of all GRM entry points and the PMO complaint center hotline will be disclosed on the construction site information boards. Consultation will focus on public nuisances from construction and operation activities, such as noise, dust, traffic disturbance, as well as public concerns about the environment and resettlement.
215. Future consultation and participation will also include (i) involvement of affected people in discussion forums during inspection and monitoring of EMP implementation during construction and operation phases; (ii) participatory evaluation on the environmental and social-economic benefits and impacts in these forums; and (iii) consultation with the public after the project completion. The EMP provides plans for future public participation. The EMP for this project is included in Appendix 1 of this report.

#### **VIII. GRIEVANCE REDRESS MECHANISM**

216. Public consultation undertaken for the three tranche 1 subprojects with civil works as part of this IEE have discussed and addressed major community concerns. Continued public participation and consultation have been emphasized as a key component of successful program implementation. As a result of this public participation and safeguard assessment, major issues of grievance are not expected. However, unforeseen issues may occur. To settle such issues effectively, a transparent grievance redress mechanism (GRM) for lodging complaints and grievances has been defined for environment related issues.
217. The GRM has been designed to help achieve the following objectives: (i) open channel for effective communication, including the identification of new environmental issues of concern arising from the tranche 1 subprojects; (ii) prevent and mitigate any adverse environmental impacts on communities caused by construction and operation of the tranche 1 subprojects; (iii) improve mutual trust and respect and promote productive relationships with local communities; and (iv) build community acceptance of the program.
218. The PMO will establish a complaints center with a hotline for receiving both environmental and resettlement grievances. The details of the GRM are described in the EMP (Appendix 1), and were also explained to various stakeholders during discussion forums for the three tranche 1 subprojects with civil works. The GRM will be operational prior to commencement of construction works.

219. In addition to the program GRM, ADB's overall accountability mechanism (2012) applies.<sup>19</sup> This mechanism provides opportunities for people adversely affected by ADB-financed projects to express their grievances; seek solutions; and report alleged violations of ADB's operational policies and procedures, including safeguard policies. ADB's accountability mechanism comprises two separate, but related, functions: (i) consultation, led by ADB's special project facilitator, to assist people adversely affected by ADB-assisted projects in finding solutions to their problems; and (ii) providing a process through which those affected by projects can file requests for compliance review by ADB's Compliance Review Panel.

## **IX. ENVIRONMENTAL MANAGEMENT PLAN**

### **A. Objectives**

220. An environmental management plan (EMP) has been prepared for tranche 1 of the program. It will provide the mechanism to implement mitigation measures and monitoring programs. The full EMP is presented in Appendix 1. It will also be included as an Appendix to the Facility Administration Manual (FAM) for the program. The EMP defines mitigation measures and describes the involved institutions and mechanisms to monitor and ensure compliance with environmental regulations and implementation of the mitigation measures. Such institutions and mechanisms will seek to ensure continuous improvement of environmental protection activities during preconstruction, construction, and operation of the tranche 1 subprojects in order to prevent, reduce, or mitigate adverse impacts. The EMP draws on the domestic EITs, this IEE, and the PPTA discussions and agreements with the relevant government agencies. The EMP will be reviewed and updated at the end of the detailed design in order to be consistent with the final detailed design, and will further be revised during implementation if determined that measures need to be amended or new measures are needed. The updated EMP will be disclosed on ADB's project website.

### **B. Organizational Structure for Environmental Management**

221. **Executing Agency.** As EA, the Guangxi Foreign Loans Project Management Office (PMO) will be responsible for the overall implementation and compliance with loan assurances and the EMP (including Environmental Monitoring Plan). The PMO will have the overall responsibility to manage day-to-day activities and to supervise the implementation of environment mitigation and monitoring measures, coordinate the project GRM and report to ADB. PMO will (i) appoint at least one staff as the environmental focal point to coordinate and manage EMP implementation, (ii) engage the project management consultant (PMC) services, and (iii) undertake the procurement process for all tranche 1 subprojects. PMO will ensure that the environmental specification clauses listed in the EMP are incorporated into all bidding documents for the tranche 1 subprojects involving civil works. The PMO environmental focal point will (i) supervise contractors and their compliance with the EMP; (ii) conduct regular site inspections; (iii) act as local entry point for the project GRM; and (iv) submit environmental quality monitoring results provided by the IAs to the PMO for verification. PMO will prepare quarterly project progress reports and annual environment monitoring reports (EMR) and submit them to ADB.
222. **Implementing Agencies** (IA) for the three subprojects will consist of two project

---

<sup>19</sup> The revised accountability mechanism became effective on 24 May 2012.



implementation units (PIU). The Fangchenggang Poly Tech Vocational School will be the PIU for subproject 1. The Pingxiang Urban Construction and Investment Company will be the PIU for subprojects 2 and 6. They will implement subproject components, administer and monitor contractors and suppliers, and be responsible for construction supervision and quality control. Each PIU shall (i) contract the local Environmental Monitoring Station (EMS) to conduct environmental impact monitoring during the construction stage, and (ii) contract an external Environmental Supervision Engineer (ESE) to conduct independent verification of EMP implementation and environmental impact monitoring results. Each PIU shall have one staff as the environmental focal point to (i) supervise contractors and their compliance with the EMP, (ii) conduct regular site inspections, and (iii) submit environmental monitoring results provided by the EMS to the PMO, ESE and local Environmental Protection Bureaus (EPB) for verification and confirmation.

223. Under the PMC services contracted by the PMO, an **external environmental monitor (EEM)** who is an environmental specialist will be included to support the project. Terms of reference for this EEM are provided in the Facility Administration Manual. The EEM will:

- (i) assess the project components' environmental readiness prior to implementation based on the readiness indicators defined in the EMP;
- (ii) support PMO in updating the EMP including environmental monitoring plan as necessary to revise or incorporate additional environmental mitigation and monitoring measures, budget and institutional arrangements, that may be required based on the detailed design; submit to ADB for approval and disclosure; ensure compliance with the PRC's environmental laws and regulations, ADB's *Safeguard Policy Statement (2009)* and *Public Communications Policy (2011)*;
- (iii) if required, update the IEE and EMP reports for changes in the project during detailed design or project implementation (for example if there is a minor or major scope change) that would result in adverse environmental impacts not within the scope of the approved IEE/EMP;
- (iv) assist PMO to establish a GRM;
- (v) conduct regular EMP compliance assessments, undertake site visits as required, identify any environment-related implementation issues, and propose and oversee implementation of necessary corrective actions;
- (vi) assist PMO to prepare quarterly project progress reports and annual EMRs for ADB;
- (vii) provide training to PMO, PIUs and contractors on environmental laws, regulations and policies, SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP; and
- (viii) assist PMO and PIUs in conducting consultation meetings with relevant stakeholders as required, informing them of imminent construction works, updating them on the latest project development activities and GRM.

224. Each PIU will contract an independent **Environmental Supervision Engineer (ESE)** to verify environmental performance during construction and whether the implementation of EMP items complies with the plan. The ESE will review EMP implementation, monitoring activities and results, assess EMP implementation performance, visit the project sites and consult potentially affected people, discuss assessment with the PMO and the respective PIU; and suggest corrective actions. The ESE will prepare monthly reports for submission to the PIU which will be submitted to and reviewed by PMO during the preparation of the quarterly project progress reports for ADB and by the EEM during the preparation of the annual EMRs for ADB.

225. Construction **contractors** will be responsible for implementing the mitigation measures during construction under the supervision of the PIUs (through the ESE) and PMO. In their bids, contractors will be required to respond to the environmental specifications in the bidding documents. Each contractor will be required to assign a person responsible for environment, health and safety.

### C. Inspection, Monitoring and Reporting

226. **Internal Environmental Monitoring**<sup>20</sup> will include monitoring of air quality, noise, water quality and other parameters described in the EMP during construction and operation of tranche 1 subprojects. These will be conducted by the local Environmental Monitoring Stations (EMS) contracted by the IAs. The monitoring results will be submitted to the IAs and PMO, and will be reported in the quarterly project progress reports and the annual EMRs prepared by the PMO and submitted to ADB.

227. **External Environmental Monitoring** will be periodically conducted by the local environmental authorities in the framework of their legal mandate to check compliance with applicable environmental regulations. They will be responsible for undertaking regular and random environmental monitoring and inspection activities before, during, and after construction as well as in the event of emergencies.

228. **External Compliance Monitoring/Auditing.** Independent evaluation (also known as compliance monitoring or compliance auditing) of EMP implementation will be undertaken by the ESE and EEM. PMO will report the EEM's independent evaluation to ADB on the program's adherence to the EMP, information on tranche 1 subproject implementation, environmental performance of the contractors, and environmental compliance through quarterly project progress reports and annual EMRs. The EEM will support PMO in developing the annual EMRs. The reports should confirm the tranche 1 subproject's compliance with the EMP and local legislation (including the PRC's EIA requirements), the results of independent evaluation (both contractor compliance with the EMP and the results of environmental monitoring by EMS), identify any environment related implementation issues and necessary corrective actions, and reflect these in a corrective action plan. Operation and performance of the program GRM, environmental institutional strengthening and training, and compliance with all covenants under the program will be included in the EMR.

229. Within 3 months after each tranche 1 subproject completion, or no later than 1 year with permission of the local EPBs, environmental acceptance monitoring and audit reports of each subproject completion shall be: (i) prepared by a licensed environmental monitoring station in accordance with the *Management Measures for Inspection and Acceptance of Environmental Protection at Construction Project Completion* (MEP Decree [2001] No. 13 and 2010 Amendment) (see Table 2, item #19) and *Management Procedures for the Supervision, Inspection and Environmental Acceptance of Construction Projects under the "Three Simultaneities"* (on trial) (MEP Announcement [2009] No. 150) (see Table 2, item #21); (ii) reviewed for approval by environmental authorities prior to the official commencement of tranche 1 subproject operation, and (iii) finally reported to ADB. The

---

<sup>20</sup> In this report, "environmental monitoring" refers to the activity of collecting environmental data either through *in-situ* measurements or through sampling followed by laboratory testing of samples.

environmental acceptance reports for completed tranche 1 subprojects will indicate the timing, extent, effectiveness of completed mitigation and of maintenance, and the needs for additional mitigation measures and monitoring during operation. These environmental acceptance reports will be provided to the EEM who is responsible for preparing an environmental completion report and inputs for the Project Completion Report (PCR) for ADB.

## **X. CONCLUSION AND RECOMMENDATION**

### **A. Expected Project Benefits**

230. The project will have positive benefits in achieving better regional cooperation and investment between the PRC and Viet Nam by improving the skills of Chinese and Vietnamese workers and SMEs, improving the hardware and software for cross-border trade and commerce, and strengthening the support on SME development in the border areas of GZAR.

### **B. Adverse Impacts and Mitigation Measures**

231. During the construction of the buildings and facilities in subprojects 1, 2 and 6, potential impacts would include dust, noise, wastewater and solid waste generated on the construction sites and by the construction workers. This IEE has identified appropriate mitigation measures to reduce such potential impacts to acceptable levels. These measures have been included in the EMP for implementation during the construction stage.

232. Land take for the three subprojects is relatively small, about 16.3 ha in total. The sites for subprojects 1, 2 and 6 are on an existing campus, in an industrial park, and in an area zoned for financial and commerce land use, respectively. Assessment undertaken indicates that these sites have been disturbed by human activities and are either void of vegetation (such as the school campus in subproject 1) or dominated by common and planted trees, shrubs and grass (such as subprojects 2 and 6). The sites do not impinge on protected areas or critical habitats and no protected flora and fauna has been recorded on these sites. Ecological value of the subproject sites is deemed to be low.

233. Wastewater generated during operation of these facilities will either be treated by wastewater treatment systems on site (such as subproject 1) or conveyed to wastewater treatment plants for treatment (such as subprojects 2 and 6). Solid waste generated during operation will be collected by local sanitation bureaus for proper disposal.

234. Operation of the training facility in Subproject 2 related to training on reprocessing and finishing of small home appliances and red wood furniture would involve sanding, polishing and paint spray present some occupational hazards. Such activities would generate air pollutants such as VOC and fine dust particulates affecting the health and safety of the teachers and students inside the training facility. Training on use, handling and storage of any potentially hazardous materials and PPE such as safety glasses, goggles, respirators and ear plugs will be provided to the teachers and students. The design of the facility will include activated carbon absorbents and fabric filters to collect VOC and fine dust particulates respectively so that these pollutants would not be emitted into the ambient atmosphere.

235. The cold storage facility in subproject 6 will use liquid ammonia as coolant. If accidentally leaked, the liquid ammonia would evaporate into ammonia gas, which is an irritant and toxic at high concentration. Environmental risk assessment using numerical modeling of ammonia dispersion upon accidental leakage indicate that the impact would be very much localized (within a distance of 26 m) and short term (20 minutes). The EMP has specified mitigation measures on the design of the liquid ammonia storage room, emergency response planning, and provision of training and PPE for workers. .
236. Energy and water saving features for the facilities have been recommended in the FSRs for adoption during detailed design. Based on climate risk and vulnerability assessment, increased drainage design and slope stabilization standards would increase climate resilience in the event of more extreme rainfall events. A range of design measures to increase energy efficiency have been specified which would reduce solar absorption during heatwaves and increase flood retention capacity.
237. Based on information gathered and assessments performed by the domestic environmental design institutes, it is concluded that environmental impacts during the construction and operational stages of the three subprojects would be acceptable and in compliance with PRC regulations and standards and ADB's SPS (2009) if the EMP is implemented and monitored effectively. The EMP defines mitigation measures and monitoring requirements for the design, construction, and operational stages of the three subprojects. Appropriate environmental safeguards for the planned works are proposed and form part of a comprehensive set of project management documents. The EMP also includes a list of environmental contract clauses for inclusion into all tender documents and works contracts, thus binding the contractors legally in the implementation of environmental mitigation measures during construction.
238. For the subproject with FI, an ESMS has been prepared for effective implementation of environmental safeguard measures by the FI, Bank of Communications.
239. An environmental assessment and review framework (EARF) has also been prepared as a guidance document for the Guangxi Zhuang Autonomous Region (GZAR) government to prepare relevant environmental safeguard documents to meet Asian Development Bank's (ADB) environmental safeguard requirements for subprojects in subsequent tranches.

### **C. Risks and Assurances**

240. The project has no unusual technical risks and conventional engineering designs with proven reliability and performance will be adopted for all the subprojects. From an environment safeguards point of view, the main risk relates to the failure of the PMO and the PIUs to monitor environmental impacts and implement the EMP during construction and operational stages. This risk will be mitigated by (i) providing training in environmental management under the project; (ii) appointing qualified project management consultant, (iii) following appropriate project implementation monitoring and mitigation arrangements, (iv) ADB conducting regular project review missions; and (v) through compliance with project assurances covenanted in the loan and project agreement with ADB.
241. General and specific environmental assurances are required to ensure that the project can achieve its envisaged outcome. The following sections define the assurances that will

be included in the project agreement. The EMP also includes a list of environmental contract clauses for inclusion into all tender documents and works contracts, binding contractors legally to implementation of environmental mitigation and monitoring measures during construction.

242. **General environmental assurances.** The Guangxi Foreign Loans Project Management Office (GPMO) as the EA will ensure and cause the PIU to ensure that the preparation, design, construction, implementation, operation, maintenance, monitoring and decommissioning of the project and project facilities comply with (i) all applicable laws and regulations of the Government on environment, health, and safety; (ii) the environmental safeguards (i.e. principles and requirements set forth in ADB's Safeguard Policy Statement (2009); and (iii) all measures and requirements set forth in the domestic environmental impact tables (EIT), this IEE and environmental management plan (EMP) for the project; and any corrective or preventive actions (a) set forth in a safeguards monitoring report, or (b) which are subsequently agreed between ADB and GPMO will cause the PIUs to prepare, at the outset of component implementation, detailed internal monitoring programs to be implemented by the contractors during construction and operation phases, and to incorporate such mitigation and monitoring measures into the design of components, relevant bidding documents and construction contracts. Throughout project implementation, GPMO and the PIUs will review any changes to the project design that may potentially cause negative environmental impacts, and in consultation with ADB, update IEE and EMP by revising mitigation measures as necessary to assure full environmental compliance.
243. GPMO and the PIUs will appoint environmental focal points for monitoring EMP implementation and making appropriate use of external independent entities for environmental monitoring and compliance monitoring. GZAR Government will ensure that the PIUs are obliged to provide annual environmental monitoring reports throughout the construction period to GPMO, which will in turn prepare and submit to ADB annual environmental monitoring reports in a format acceptable to ADB.
244. **Specific environmental assurances.** GPMO will ensure that within 60 days from the loan effectiveness, GPMO establishes the project grievance redress mechanism relating to safeguards in line with the EMP and Resettlement Plan and establishes a task force functioning effectively to: (a) review and document eligible complaints of project stakeholders; (b) proactively address grievances; (c) agree with the complainants the chosen mechanism for redress; and (d) prepare periodic reports to summarize the number of complaints received and resolved, and final outcomes of the grievances and chosen actions and make these reports available to ADB on request. Eligible complaints include those related to the project, any of the service providers, any person responsible for carrying out the project, complaints on misuse of funds and other irregularities and grievances due to any safeguard issues, including resettlement, environment, and gender.
245. GPMO will ensure that the PIU for the Cross-border Labor Cooperation Demonstration Park (subproject 2) will (i) provide personal protective equipment (PPE) such as safety glasses, goggles, respirators and ear plugs to the teachers and students undergoing training inside the training facility; and (ii) handle all hazardous solid waste generated during training appropriately with proper collection and temporary storage on site, and regularly collected by a company licensed for chemical waste collection, transport and treatment.
246. GPMO and the PIU for Expansion of Pingxiang Border Trade Service Center (subproject 6)

will ensure that (i) operation of the center will commence only after the commissioning of either the wastewater treatment station on the neighboring Pingxiang Border Trade Logistics Center or the Kafeng Wastewater Treatment Plant, whichever is sooner for treatment wastewater generated from this subproject; (ii) the design for liquid ammonia storage in the cold storage facility conforms to applicable standards; (iii) PPE is provided to workers working in the liquid ammonia storage room; and (iv) an emergency response plan is prepared; and (v) training on the use of liquid ammonia, handling of liquid ammonia drums and emergency response in the event of accidental leakage of liquid ammonia is provided to workers.

247. GPMO will ensure that the FI complies with the safeguard requirements in the ESMS.

248. GZAR Government and the PIUs shall ensure that detailed design of the infrastructure subprojects (1, 2 and 6) address the recommendations of the climate change risk and vulnerability analysis.

#### **D. Overall Conclusion**

249. The domestic EITs and this IEE conclude that all identified environmental impacts can be mitigated to acceptable levels if the measures defined in the EMP and assurances are carefully implemented and monitored. The project is feasible from an environmental safeguards point of view and will contribute to improving regional cooperation and investment between the PRC and Viet Nam

## **ENVIRONMENTAL MANAGEMENT PLAN**

September 2016

People's Republic of China: Guangxi Regional  
Cooperation and Integration Promotion Investment  
Program

Prepared by the Government of Guangxi Zhuang Autonomous Region for the Asian Development Bank.

## A. Introduction

1. This Environmental Management Plan (EMP) is developed for Tranche 1 of the Guangxi Regional Cooperation and Integration Promotion Investment Program Multitranche Financing Facility (MFF) (the project). The EMP identifies the potential environmental impacts and defines mitigation measures and monitoring requirements for the design, construction, and operational stages of the three subprojects (numbers 1, 2 and 6)<sup>1</sup> in Tranche 1 that will involve civil works. It also defines the institutional arrangements and mechanisms, the roles and responsibilities of different institutions, procedures and budgets, capacity building and training for implementation of the environmental aspects of Tranche 1 of the MFF program. The EMP seeks to ensure environmental protection activities during preconstruction, construction, and operation are implemented effectively in order to prevent, reduce, or mitigate adverse environmental impacts and risks. The EMP draws on the findings of the project initial environmental examination (IEE) report; the domestic feasibility study reports (FSR) and environmental impact tables (EIT) for the three subprojects; the project preparation technical assistance (PPTA) reports, and discussions and agreements with relevant government agencies and the Asian Development Bank (ADB).

2. This EMP is based on proposed project designs described in the FSRs as of May 2016 for subproject 1, July 2106 for subproject 2 and April 2016 for subproject 6. Detailed engineering designs are yet to be finalized and may require subsequent impact assessment and/or revisions to this EMP. The Guangxi Zhuang Autonomous Region (GZAR) Government will provide the detailed designs to ADB for review to determine if the EMP requires revision. The final EMP will be disclosed on the ADB public website ([www.adb.org](http://www.adb.org)) and included in the facility administration manual (FAM). The final EMP will also be included as a separate annex in all bidding and contract documents for Tranche 1 subprojects. The contractors will be informed of their obligations to implement the EMP, and to include EMP implementation costs in their bids for subprojects 1, 2 and 6 works. The EMP defines the overarching Grievance Redress Mechanism (GRM) for the program, however, entry points will also be provided at a subproject level. All Project Implementing Entities (PIEs) will be made aware of the GRM requirements.

3. This EMP consists of six components: (i) institutional arrangements and environmental responsibility, (ii) environmental mitigation measures, (iii) environmental monitoring, (iv) institutional strengthening and training, (v) public consultation, and (vi) grievance redress mechanism (GRM). Environmental monitoring consists of two types of monitoring: (i) environmental monitoring in terms of environmental data collection and analyses for assessing the extent and severity of impact and (ii) compliance monitoring (or audit) by independent entities for verifying EMP implementation. The last section of this EMP contains a list of environmental contract clauses for inclusion into all bidding documents and works contracts for the three subprojects for environmental protection during construction.

4. In addition to this EMP, an Environmental and Social Management System (ESMS) has been prepared to set out the specific safeguard requirements for the financial intermediary (FI), Bank of Communications (BoCOM) who are the PIE for subproject 4 which will provide finance for small and medium sized enterprises in Fangchenggang, Chongzuo and Baise to promote cross-border trade and investment. Projects that would be classified as Environment category A are excluded from funding. An Environment and Assessment Review Framework (EARF) has been prepared to set out the environmental safeguard requirements for preparation of

---

<sup>1</sup> **Subproject 1:** Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs. **Subproject 2:** Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone. **Subproject 6:** Expansion of Pingxiang Border Trade Service Center.



subsequent tranches. The Facility Administration Manual sets out the project management consulting services allocated to support the implementation of the Tranche 1 program and the preparation of Tranche 2.

## **B. Institutional Arrangements and Responsibilities for EMP Implementation**

5. **Executing agency.** The **GZAR** will be the executing agency (EA) responsible for overall implementation and compliance with loan assurances and the EMP.

6. **Project management office.** The EA has established the **Guangxi Foreign Loans Project Management Office** (广西国外贷款项目管理办公室) (GPMO), who will be responsible, on behalf of the EA, for the day-to-day management of the project. The GPMO will have the overall responsibility of supervising the implementation of environment mitigation and monitoring measures, coordinate the project GRM and report to ADB. GPMO shall (i) appoint one person on its staff roster as the environmental focal point to coordinate and manage EMP implementation, (ii) engage the project management consultant (PMC) services, and (iii) supervise the procurement process. The GPMO environmental focal point with support of the PMC environment specialists shall (i) provide overall co-ordination and support on environmental aspects of all Tranche 1 subprojects; (ii) support GPMO with preparation of subsequent tranches in compliance with the EARF; (iii) support Bank of Communications, Nanning (BoCOM) with safeguard screening and classification of initial subproject components, and monitor assessment and reporting, particularly for environment Category B subproject components in compliance with the ESMS; (iv) supervise contractors and their compliance with the EMP; (v) conduct regular site inspections; (vi) act as GPMO entry point for the project GRM; (vii) submit environmental monitoring data provided by the IAs to EEM; and support GPMO with preparation of quarterly project progress reports and annual environment monitoring reports (EMR) and submit them to ADB.

7. **Implementing agency.** Implementing Agencies (IA) for the three subprojects with infrastructure components are the following **project implementing entities** (PIE): The Fangchenggang Poly Tech Vocational School (防城港理工职业学校) for subproject 1, and the Pingxiang Urban Construction and Investment Company (凭祥市城市建设投资有限公司) for subprojects 2 and 6. The PIEs will implement subproject components, administer and monitor contractors and suppliers, and be responsible for construction supervision and quality control. To ensure that the contractors comply with the EMP provisions, the PIEs with the help and technical support of a Tendering Agent and the External Environmental Monitor (EEM) under the PMC services, shall prepare and provide the following specification clauses for incorporation into the bidding procedures: (i) a list of environmental management and monitoring 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 the full EMP. Each PIE shall (i) contract the local Environmental Monitoring Station (EMS) to conduct environmental quality monitoring during the construction stage, and (ii) contract an external Environmental Supervision Engineer (ESE) to conduct independent compliance audit and verification of EMP implementation during the construction stage of the subproject. Each PIE shall appoint one person on its staff as environmental focal point to (i) supervise contractors and their compliance with the EMP, (ii) conduct regular site inspections, and (iii) submit environmental quality monitoring data provided by the EMS to the PMO and local Environmental Protection Bureau (EPB).

8. **Construction contractors** for the three subprojects shall be responsible for implementing the mitigation measures during construction under the supervision of the PIEs

(through the ESE) and GPMO. In their bids, contractors shall be required to respond to the environmental management and monitoring requirements defined in the EMP. Each contractor shall be required to assign a person responsible for environment, health and safety.

9. **External environmental monitor (EEM).** An EEM will be recruited to support the implementation of the three infrastructure subprojects. Terms of reference for the EEM are provided in the FAM. The EEM will:

- assess the project's environmental readiness prior to implementation based on the readiness indicators defined in Table EMP-3 in the EMP;
- support GPMO in updating the EMP including environmental monitoring plan as necessary to revise or incorporate additional environmental mitigation and monitoring measures, budget, institutional arrangements, etc., that may be required based on the detailed design; submit to ADB for approval and disclosure; ensure compliance with the PRC's environmental laws and regulations, ADB's Safeguard Policy Statement (2009) and Public Communications Policy (2011);
- if required, update the IEE and EMP reports for changes in the subprojects during detailed design or subproject implementation (for example if there is a minor or major scope change) that would result in adverse environmental impacts not within the scope of the approved IEE/EMP;
- assist GPMO to establish a GRM;
- conduct EMP compliance audit, undertake site visits as required, identify any environment-related implementation issues, and propose and oversee implementation of necessary corrective actions;
- assist GPMO to prepare quarterly project progress reports and annual EMRs for submission to ADB;
- provide training to GPMO, PIEs and contractors on environmental laws, regulations and policies, SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP (Table EMP-7); and
- assist GPMO and PIEs in conducting consultation meetings with relevant stakeholders as required, informing them of imminent construction works, updating them on the latest subproject development activities, GRM.

10. **Environmental supervision engineer (ESE) 环境监理.** Each PIE shall contract an independent ESE to verify environmental performance during construction and whether the implementation of EMP items complies with the plan. The ESE will review EMP implementation and monitoring activities and results, assess EMP implementation performance, visit the project sites and consult potentially affected people, discuss assessment with the GPMO and the respective PIE; and suggest corrective actions. The ESE will prepare monthly reports for submission to the PIE which will be submitted to and reviewed by GPMO during the preparation of the quarterly project progress reports for ADB and by the EEM during the preparation of the annual EMRs for ADB.

11. Table EMP-1 outlines the overall environmental responsibilities.

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

12. Potential environmental issues and impacts during pre-construction, construction and operation phases for the three subprojects, and corresponding mitigation measures, are summarized in Table EMP-2, separated into those that are common to all three subprojects and those that are subproject specific. There are two types of mitigation measures:

- Measures that will permanently become part of the infrastructure such as engineering measures for energy efficiency, green building features and barrier-free accessibility, etc. should be included within the main civil work contract costs, and are not double-counted as part of the EMP costs.
- Temporary measures during the construction stage (e.g. dust suppression by watering, use of quiet / low noise powered mechanical equipment (PME), flocculants used to facilitate sedimentation of suspended solids in construction site runoff, etc.) will need to be included in the tender documents to ensure that contractors budget these items in their bids.

**Table EMP-1: Environmental Responsibility**

Responsible Entity	Project Stage and Environmental Responsibility				
	Project Preparation	Engineering Detailed Design	Tendering & Pre-construction	Construction	Operation
GZAR Government	The Executing Agency (EA) for the project responsible for overall implementation and compliance with loan assurances and the EMP.				
GPMO (Guangxi Foreign Loans Project Management Office)	Established by the EA to be responsible for the day-to-day management of the project. Has overall responsibility delegated by the EA for supervising the implementation of environmental mitigation measures, coordinating the project level GRM and reporting to ADB				
	<ol style="list-style-type: none"> <li>1. Engage LDIs to prepare FSR, EIT and RP</li> </ol>	<ol style="list-style-type: none"> <li>1. Engage LDIs</li> <li>2. Update IEE/EMP if needed</li> <li>3. Review updated EMP</li> <li>4. Confirm that mitigation measures have been included in engineering detailed design</li> </ol>	<ol style="list-style-type: none"> <li>1. Appoint one environmental focal point on staff</li> <li>2. Incorporate IEE/EMP clauses in tender documents and contracts</li> <li>3. Manage the procurement process</li> <li>4. Establish the project complaint center with hot-line</li> <li>5. Engage EEM as part of the PMC services</li> </ol>	<ol style="list-style-type: none"> <li>1. Supervise EMP implementation to ensure effectiveness</li> <li>2. Operate the project complaint center and coordinate the project environment GRM records and reporting.</li> <li>3. Prepare quarterly project progress reports and annual EMRs and submit them to ADB</li> <li>4. Conduct information disclosure and public consultation</li> <li>5. Inspect implementation of mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Instruct the PIEs on environmental management requirements</li> <li>2. Prepare quarterly project progress reports and annual EMRs until a PCR is issued</li> </ol>
<ol style="list-style-type: none"> <li>1. Fangchenggang Poly Tech Vocational School</li> <li>2. Pingxiang Urban Construction and Investment Company</li> </ol>	The Implementing Agency (IA) for the subprojects are the project implementing entities (PIEs) who will implement subproject components, administer and monitor contractors and suppliers, and take responsibility for construction supervision and quality control. Will ensure that the EMP is implemented proactively and will respond to any adverse impact beyond those foreseen in the IEE and ensure that if there are any changes in scope the IEE/EMP will be updated, as needed. Will also attend to requests from relevant agencies and ADB regarding the mitigation measures and environmental monitoring program.				
			<ol style="list-style-type: none"> <li>1. Incorporate IEE/EMP clauses in tender documents and contracts</li> <li>2. Appoint an environmental focal point on staff</li> <li>3. Engage local EMS for environmental monitoring</li> <li>4. Engage ESE for independent compliance audit and verification</li> </ol>	<ol style="list-style-type: none"> <li>1. Supervise contractors and ensure compliance with the EMP</li> <li>2. Coordinate construction supervision and quality control</li> <li>3. Coordinate environmental monitoring according to the environmental monitoring program in the approved EMP</li> <li>4. Act as a local entry point for the project GRM, collate records and report monthly to GPMO on GRM</li> <li>5. Submit monthly monitoring results to GPMO and local EPBs</li> </ol>	<ol style="list-style-type: none"> <li>1. Coordinate environmental monitoring according to the approved EMP until a PCR is issued</li> <li>2. Ensure proper operation of subproject facilities according to design standards</li> </ol>
Local design institutes (LDIs)	<ol style="list-style-type: none"> <li>1. Prepare subproject FSRs, EITs, RPs</li> <li>2. Conduct public consultation</li> </ol>	<ol style="list-style-type: none"> <li>1. Incorporate mitigation measures defined in the approved EITs and this EMP into engineering detailed designs</li> <li>2. Update the EMP in cooperation with the EEM</li> <li>3. Incorporate agreed climate adaptation measures into engineering detailed designs..</li> </ol>			
Local EPBs	<ol style="list-style-type: none"> <li>1. Review and approve the subproject EITs</li> </ol>			<ol style="list-style-type: none"> <li>1. Review subproject environmental monitoring results</li> <li>2. Conduct mandated inspection and monitoring</li> </ol>	

Responsible Entity	Project Stage and Environmental Responsibility				
	Project Preparation	Engineering Detailed Design	Tendering & Pre-construction	Construction	Operation
				3. Conduct the "Three Simultaneity" <sup>2</sup> acceptance inspections on completion of the subprojects	
PPTA consultant	1. Provide technical assistance 2. Review EITs and other relevant documents 3. Prepare IEE report and EMP				
EEM		1. Review updated EMP, confirm that mitigation measures have been included in engineering detailed design	1. Review bidding documents to ensure that the IEE/EMP clauses are incorporated 2. Confirm project's readiness in respect of environmental management.	1. Advise on mitigation measures 2. Provide technical support to GPMO, PIEs and contractors for environmental management 3. Conduct environmental training 4. Conduct EMP compliance audit 5. Support GPMO in preparing quarterly project progress reports and annual EMRs. 6. Review domestic environmental inspection acceptance reports 7. Provide environmental input to the PCR.	1. Conduct EMP compliance audit 2. Support PMO in instructing PIEs on environmental management requirements 3. Support PMO in preparing quarterly project progress reports and annual EMRs until a PCR is issued 4. Coordinate environmental monitoring until a PCR is issued
Contractors			1. Ensure sufficient funding and human resources for proper and timely implementation of required mitigation and monitoring measures in the EMP throughout the construction phase	1. Appoint an environment, health and safety (EHS) officer to oversee EMP implementation related to environment, occupational health and safety on construction site 2. Ensure health and safety 3. Implement mitigation measures 4. Act as a local entry point for the project GRM	
Local EMS 环境监测站				1. Undertake environmental monitoring according to the environmental monitoring program in the approved EMP (contracted by PIEs) 2. Report monitoring data to ESE, PIEs and GPMO	1. Undertake environmental quality monitoring until a PCR is issued (contracted by PIEs) 2. Submit monitoring results to the PIEs
ESE 环境监理				1. Conduct independent verification of subproject's environment performance and compliance with the EMP (contracted by PIEs) 2. Review monthly monitoring data submitted by EMS, and conduct	

<sup>2</sup> The "Three Simultaneities" requires the design, construction, and operation of pollution control and treatment facilities to occur simultaneously with the project design, construction, and operation.

Responsible Entity	Project Stage and Environmental Responsibility				
	Project Preparation	Engineering Detailed Design	Tendering & Pre-construction	Construction	Operation
				compliance checking against applicable environmental standards and report to EEM. 3. Provide advice to contractors to resolve on-site environmental problems when monitoring data shows non-compliance and any environmental complaints raised. 4. Submit monthly compliance auditing results to PMO and PIEs	
ADB	1. Review and approve the IEE and EMP and disclose on ADB website	1. Approve updated IEE/EMP if appropriate and disclose on ADB website	1. Review bidding documents 2. Review proposed candidates for EEM to ensure suitably qualified. 3. Confirm project's readiness	1. Review quarterly project progress reports, annual EMRs and PCR 2. Undertake review missions 3. Advise on compliance issues, as required 4. Review and disclose annual EMRs on ADB website.	1. Review and approve EMRs and disclose on ADB website 2. Undertake project completion review mission and prepare PCR for approval by Board and disclosure on ADB website.
<b>Notes:</b> <b>ADB</b> = Asian Development Bank; <b>EA</b> = executing agency; <b>EEM</b> = external environmental monitor; <b>EHS</b> = environment, health & safety; <b>EIT</b> = environmental impact table; <b>EMP</b> = environmental management plan; <b>EMR</b> = environmental monitoring report; <b>EMS</b> = Environmental Monitoring Station; <b>EPB</b> = Environmental Protection Bureau; <b>ESE</b> = environmental supervision engineer; <b>FSR</b> = feasibility study report; <b>GPMO</b> = Guangxi project management office; <b>GRM</b> = grievance redress mechanism; <b>GZAR</b> =Guangxi Zhuang Autonomous Region; <b>IA</b> = implementing agency; <b>IEE</b> = initial environmental examination <b>LDI</b> = local design institute; <b>PCR</b> = project completion report; <b>PIE</b> = project implementing entity; <b>PMC</b> = project management consultant; <b>PPTA</b> = project preparation technical assistance; <b>RP</b> = resettlement plan					

**Table EMP-2: Summary of Potential Impacts and Mitigation Measures**

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
<b>A: Mitigation measures applicable to all three subprojects</b>						
<b>A.1: Detailed Design Stage</b>						
Green building design	Materials and fixtures, carbon emission	Efficient use of resources and energy	<ul style="list-style-type: none"> <li>Technical design of buildings and facilities shall include barrier-free universal access</li> <li>Technical design of buildings and facilities shall include energy saving features in terms of building envelope/roofing materials, electrical system and automation, water heating, air conditioning and ventilation, and lighting, etc. as recommended in the FSRs</li> <li>Technical design of buildings and facilities shall consider other "green building" features besides energy saving.</li> </ul>	LDI	GPMO	Included in design contract
Slope stability	Climate change	Extreme rainfall causing landslide	<ul style="list-style-type: none"> <li>A high design standard shall be adopted for slope stabilisation design to improve climate resilience.</li> </ul>	LDI	GPMO	Included in design contract
<b>A.2: Pre-construction Stage</b>						
Institutional strengthening	--	Lack of environmental management capacities within PMO and PIEs	<ul style="list-style-type: none"> <li>Appoint qualified staff as the environmental focal point to oversee EMP implementation.</li> <li>Contract EEM within PMC services</li> <li>Conduct environment management training.</li> </ul>	GPMO, PIEs	ADB	GPMO, PIEs
	--	Lack of environmental monitoring and supervision capability and qualification	<ul style="list-style-type: none"> <li>Contract local EMS (环境监测站) to conduct environmental quality monitoring during construction and operation.</li> <li>Appoint an environmental supervision engineer (ESE, 环境监理) responsible for the environmental supervision of contractors and environmental audit of construction sites.</li> </ul>	PIEs	GPMO	PIEs
Grievance redress mechanism	--	Establish a system for receiving and resolving complaints	<ul style="list-style-type: none"> <li>Establish a project-specific grievance redress mechanism (GRM) including a complaint hotline.</li> <li>Brief and provide training to other GRM access points (PIEs, contractors).</li> </ul>	GPMO	ADB	GPMO, PMC service
EMP Update	-	-	<ul style="list-style-type: none"> <li>Review mitigation measures defined in this EMP, update as required to reflect detailed design, disclose updated EMP on project website.</li> </ul>	GPMO, EEM	ADB	GPMO, PMC
Tender and contract documents	-	Environmental contract clauses-	<ul style="list-style-type: none"> <li>Put the environmental contract clauses listed in Section J of this EMP into all civil works tender documents and contracts and ensure adequate cost provision.</li> </ul>	GPMO, las, Tendering Agent	EEM, ADB	Included in tendering agency contract
<i>Estimated cost for Design and Pre-construction stage: Included in detailed design and contract tender fees</i>						
<b>A.3: Construction Stage</b>						
Construction site good practice	Air quality	Dust (TSP) during construction	<ul style="list-style-type: none"> <li>Spray water at least twice each day on unpaved areas and exposed dust-prone stockpiles except on rainy days.</li> <li>Store dust-prone materials in areas with shelters on four sides and on top. If such materials have to be stored in open area, cover with strong tarpaulin.</li> <li>Control vehicle speed to <math>\leq 8</math> km/h in unpaved areas. Post the speed limit sign in these areas.</li> <li>Pave construction site exits with gravel or asphalt.</li> <li>Install wheel washing equipment or conduct wheel washing manually at each construction site exit to prevent trucks from carrying muddy or dusty substances onto public roads.</li> <li>Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin.</li> <li>Provide personal protective equipment (PPE) such as goggles, gloves and respirators to construction workers doing interior fit-out to minimize skin exposure to chemicals and inhalation of VOC.</li> <li>Regularly maintain construction vehicles and machinery to minimize exhaust emissions from these sources.</li> <li>Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor, and withholding of payment.</li> </ul>	Contractor	PIEs, ESE, EEM	\$84,000 (contractor bid)
	Noise and vibration	Noise from PME and vehicles	<ul style="list-style-type: none"> <li>No construction works shall be conducted between 22:00 to 06:00 hours. Piling works shall also be prohibited between 12:00 to 14:30 hours.</li> <li>Carry out consultation with local communities to discuss/agree the timing of noisy construction activities.</li> <li>During construction, the contractor shall:                             <ul style="list-style-type: none"> <li>ensure regular equipment repair and maintenance to keep them in good working condition to</li> </ul> </li> </ul>	Contractor	PIEs, ESE, EEM	\$90,000 (contractor bid)

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
			<ul style="list-style-type: none"> <li>– minimize noise</li> <li>– deploy low noise machinery or the equipment with sound insulation</li> <li>– erect temporary noise barriers or hoardings around noisy equipment to shield the noise from equipment</li> <li>– provide the construction workers with suitable hearing protection (ear muffs) when working near noisy machinery such as during piling</li> <li>– forbid the use of horns unless absolutely necessary, minimize the use of whistles</li> </ul>			
	Water quality	Construction site runoff and wastewater discharge	<ul style="list-style-type: none"> <li>● Collect runoff from construction sites with drainage ditches to prevent runoff containing muddy water from polluting nearby roads, land and water bodies.</li> <li>● Install and operate oily-water separators and sedimentation tanks on construction sites to treat process water and muddy runoff with high concentrations of total petroleum hydrocarbon and suspended solids. If necessary, use flocculants such as polyacryl amide to facilitate sedimentation.</li> <li>● Provide portable toilets and small package wastewater treatment plants and/or septic tanks on construction sites for the workers. If there are nearby public sewers, install interim storage tanks and pipelines to convey wastewater to public sewers.</li> <li>● Store fuels, oil, and other hazardous materials on construction sites within secured areas on impermeable surfaces protected by bunds and provided with cleanup kits.</li> <li>● Clean up any chemical spills into drains and water bodies according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the GPMO and local EPB.</li> </ul>	Contractor	PIEs, ESE, EEM	\$105,000 (contractor bid)
	Solid waste	Construction site refuse and C&D waste	<ul style="list-style-type: none"> <li>● Maximize the re-use of C&amp;D wastes on the project.</li> <li>● Store all refuse and C&amp;D waste generated on construction sites in designated areas and remove them from these locations for disposal or reuse regularly.</li> </ul>	Contractor	PIEs, ESE, EEM	\$45,000 (contractor bid)
	Ecology	Destruction of vegetation and wildlife	<ul style="list-style-type: none"> <li>● Construction workers are prohibited from capturing any wildlife during construction.</li> <li>● Where a tree has to be removed or an area of grassland disturbed, replant trees and re-vegetate the area after construction.</li> <li>● Tree planting shall use local species with local provenance. Planting of exotic or invasive species shall be prohibited.</li> </ul>	Contractor	PIEs, ESE, EEM	None
	Physical cultural resources	Destruction of buried cultural relics	<ul style="list-style-type: none"> <li>● Comply with PRC's <i>Cultural Relics Protection Law</i> and <i>Cultural Relics Protection Law Implementation Ordinance</i> if such relics are discovered, stop work immediately and notify the local cultural authority, adopt measures to protect the site.</li> </ul>	Contractor	PIEs, ESE, EEM	None
	Overall disturbance to communities	Excessive disturbance to communities due to prolonged construction times	<ul style="list-style-type: none"> <li>● Identify and adhere to strict schedule for completion of civil works and avoid prolonged construction and disturbance.</li> <li>● Keep communities informed of construction activities, in particular those that may result in disruption of access, noisy or dust-generating activities that are likely to result in significant disturbance. Ensure communities are aware of Grievance Redress Mechanism entry points.</li> </ul>	Contractor	PIEs, ESE, EEM	Covered in above costs
Health and Safety	Occupational health and safety	Environment, health & safety officer	<ul style="list-style-type: none"> <li>● Appoint at least one environment, health and safety (EHS) officer to manage occupational health and safety risks on construction sites by applying the following measures.</li> </ul>	Contractor	PIEs, ESE, EEM	(contractor staff)
		Construction site sanitation	<ul style="list-style-type: none"> <li>● Provide adequate and functional systems for sanitary conditions, toilet facilities, waste management with waste separation, labor dormitories and cooking facilities.</li> <li>● Effectively clean and disinfect the site. During site formation, spray with phenolated water for disinfection. Disinfect toilets and refuse bins and ensure timely removal of solid waste.</li> <li>● Exterminate rodents on site at least once every 3 months, and exterminate mosquitoes and flies at least twice each year.</li> <li>● Provide public toilets in accordance with the requirements of labor management and sanitation departments in the living areas on construction site, and appoint designated staff responsible for cleaning and disinfection</li> <li>● Discharge construction site domestic wastewater into the municipal sewer system or treated on-site using a portable system.</li> </ul>	Contractor	PIEs, ESE, EEM	Included in water quality above (contractor bid)



Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
		Occupational safety	<ul style="list-style-type: none"> <li>Provide personal protective equipment (safety hats and shoes, high visibility vests and safety belt and harness for above ground works) to all construction workers and strictly enforce all workers to put on the PPE.</li> <li>Provide safety goggles, gloves and respiratory masks to workers doing interior fit-out works.</li> <li>Provide ear plugs to workers operating and working near noisy PME.</li> </ul>	Contractor	PIEs, ESE, EEM	\$60,000 (contractor bid)
		Food safety	<ul style="list-style-type: none"> <li>Inspect and supervise food hygiene in canteens on site regularly. Canteen workers must have valid health permits.</li> <li>If food poisoning is discovered, implement effective control measures immediately to prevent it from spreading.</li> </ul>	Contractor	PIEs, ESE, EEM	None
		Disease prevention and safety awareness	<ul style="list-style-type: none"> <li>Construction workers must have physical examination before starting work on site. If infectious disease is found, the patient must be isolated for treatment to prevent the disease from spreading. From the second year onwards, conduct physical examination on 20% of the workers every year.</li> <li>Establish health clinic at location where workers are concentrated, which should be equipped with common medical supplies and medication for simple treatment and emergency treatment for accidents.</li> <li>Provide induction and training by local health departments on prevention and management of communicable diseases.</li> </ul>	Contractor	PIEs, ESE, EEM	\$10,000 (contractor bid)
	Community health and safety	Temporary traffic management	<ul style="list-style-type: none"> <li>Prepare a traffic control and operation plan together with the local traffic police prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls and planning in advance.</li> </ul>	Contractor, local traffic police	PIEs, ESE, EEM	None
		Information disclosure	<ul style="list-style-type: none"> <li>Erect construction billboards, which include construction contents, schedule, responsible person and complaint phone number, at the entry to each construction site and construction staging area.</li> <li>Inform residents and businesses in advance of the road improvement activities, given the dates and duration of expected disruption and make aware of the project GRM.</li> <li>Place clear signs at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc. and raising awareness on safety issues.</li> </ul>	Contractor	PIEs, ESE, EEM	None
Access to construction sites		<ul style="list-style-type: none"> <li>Make all sites secure, and discourage access by members of the public through appropriate fencing, signage and/or security personnel, as appropriate.</li> </ul>	Contractor	PIEs, ESE, EEM	None	
Utility services interruptions		<ul style="list-style-type: none"> <li>Assess construction locations in advance and identify potential for disruption to services and risks before starting construction. Any damage or hindrance/disadvantage to local businesses caused by the premature removal or insufficient replacement of public utilities is subject to full compensation, at the full liability of the contractor who caused the problem.</li> <li>If temporary disruption is unavoidable, develop a plan in collaboration with relevant local authorities such as power company, water supply company and communication company to minimize the disruption and communicate the dates and duration in advance to affected persons.</li> </ul>	Contractor, local utility service providers	PIEs, ESE, EEM	None	
Grievance redress mechanism	Social & environmental	Handling and resolving complaints on contractors	<ul style="list-style-type: none"> <li>Appoint a GRM coordinator</li> <li>Disclose GRM to affected people before construction begins at the main entrance to each construction site.</li> <li>Maintain and update a Complaint Register to document all complaints.</li> </ul>	Contractor, PIEs	PMO, EEM	Contractor and PIE budget

**Estimated cost for the Construction Stage: \$394,000**

**Zone**  
**B: Subproject 1: Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs**

B.1: Detailed Design Stage						
Drainage	Climate change	Extreme rainfall	Technical design of the drainage system for the Fangchenggang Poly Tech Vocational School shall adopt an 8% increase over the current standard as an adaptation measure for extreme rainfall due to climate change.	LDI	GPMO, FPTVS	included in design contract

B2: Construction Stage						
Construction site good practice	Noise	Noise from PME affecting students in classes, dormitories and on campus	<ul style="list-style-type: none"> <li>Deploy low noise machinery with noise insulation and install temporary noise barriers around noisy PME</li> <li>Avoid noisy construction activities during examination periods</li> </ul>	Contractor	PIE (FPTVS), ESE, EEM	Included in item A.3 above (contractor bid)

**C: Subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone**

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
<b>C.1: Detailed Design Stage</b>						
Air emission from training facility	Air quality	Emission of VOC and fine dust particulates from training facilities due to sanding, polishing and paint spraying.	Technical design of the training center shall include activated carbon absorbent for VOC removal and fabric filter for removal of dust composed of fine particulate matters.	LDI	GPMO, PUCIC	Included in design contract
Drainage	Climate change	Extreme rainfall	Technical design of the drainage system shall adopt a 10% increase over the national standard as an adaptation measure for extreme rainfall due to climate change.	LDI	GPMO, PUCIC	Included in design contract
<b>C.2: Operation Stage</b>						
Health & safety	Air quality and noise inside training facility	VOC, fine dust particulates and noise during sanding, polishing and paint spraying	Provided PPE such as goggles, respirators and ear plugs for health and safety protection to all teachers and students from VOC, fine particulate matters and noise during training	PUCIC	GPMO, PUCIC	Included in PIE operation budget
<b>D: Subproject 6: Expansion of Pingxiang Border Trade Service Center</b>						
<b>D.1: Detailed Design Stage</b>						
Drainage	Climate change	Extreme rainfall	Technical design of the drainage system shall adopt a 10% increase over the national standard as an adaptation measure for extreme rainfall due to climate change.	LDI	GPMO, PUCIC	Included in design contract
Cold storage facility	Liquid ammonia used as coolant	Storage and containment of liquid ammonia	Technical design of the liquid ammonia storage room for the cold storage warehouse must comply with the requirements in PRC's GB 18597-2001 <i>Standard Pollution Control on Hazardous Waste Storage</i> .	LDI	GPMO, PUCIC	Included in design contract
<b>D.2: Operation Stage</b>						
Cold storage facility	--	Liquid ammonia storage	<ul style="list-style-type: none"> <li>The maximum allowable quantity of liquid ammonia stored on site shall not exceed 5 tons at any given time.</li> <li>Prepare an emergency response plan for liquid ammonia leakage.</li> <li>Place PPE such as goggles and respirators in conspicuous locations outside the liquid ammonia storage room for use by all workers inside the room.</li> <li>Train workers on the handling of liquid ammonia drums, the use of the cold storage facility, and emergency response should liquid ammonia leakage occur.</li> </ul>	PUCIC	GPMO	None
<b>Key:</b> ADB = Asian Development Bank; EEM = external environmental monitor; EHS = environment, health & safety; EIT = environmental impact table 环境影响报告表; EMP = environmental management plan; EMS = Environmental Monitoring Station 环境监测站; EPB = Environmental Protection Bureau; ESE = Environmental supervision engineer 环境监理; FPCVSS = Fangchenggang Poly Tech Vocational School 防城港理工职业学校; FSR = feasibility study report; GPMO = Guangxi project management office; GRM = grievance redress mechanism; IA = implementing agency; IEE = initial environmental examination; LDI = local design institute; PIE = project implementing entity; PMC = project management consultant; PME = powered mechanical equipment; PPE = personal protective equipment; PRC = :People's Republic of China; PUCIC = Pingxiang Urban Construction and Investment Company 凭祥市城市建设投资有限公司; SS = suspended solid; TSP = total suspended particulates; VOC = volatile organic compound						

13. The mitigation measures defined in the EMP will be (i) checked and where necessary updated by the design institutes and the EMP subsequently updated; (ii) incorporated into tender documents (where appropriate), construction contracts, and operational management plans; and (iii) implemented by contractors and PIEs under supervision of GPMO. The effectiveness of these measures will be evaluated based on the results of the environmental monitoring conducted by local EMS, and through EMP compliance audits conducted by the ESE and EEM.

#### D. Monitoring and Reporting

14. Three types of project monitoring will be conducted under the EMP.<sup>3</sup>

- i. Project readiness monitoring. To be conducted by the EEM or GPMO environmental focal point (under the support of EEM).
- ii. Environmental quality monitoring. To be conducted by local EMS (contracted by the PIEs) involving the collection and analyses of air quality and noise data at designated monitoring locations to assess compliance with applicable environmental quality and emission standards during construction.
- iii. Compliance monitoring or auditing. To be conducted by the ESE (contracted by the PIEs) and EEM to verify EMP compliance during project implementation. The EEM will function as an external monitor/auditor for ADB.

15. ADB will oversee project compliance on the basis of the quarterly project progress reports and annual environmental monitoring reports provided by GPMO and site visits (generally 1-2 times/year). Monitoring and reporting arrangements for the three subprojects are described below.

16. **Project readiness monitoring.** Before construction, the EEM will assess the subprojects' readiness on environmental management based on a set of indicators (Table EMP-3) and report it to ADB and PMO. 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-3: Project Readiness Assessment Indicators**

Indicator	Criteria	Assessment
EMP update	<ul style="list-style-type: none"> <li>• EMP was updated after technical detail design &amp; approved by ADB</li> </ul>	Yes No
Compliance with loan covenants	<ul style="list-style-type: none"> <li>• The borrower complies with loan covenants related to project design and environmental management planning</li> </ul>	Yes No
Public involvement effectiveness	<ul style="list-style-type: none"> <li>• Meaningful consultation completed</li> <li>• GRM established with entry points</li> </ul>	Yes No Yes No
Environmental supervision and monitoring in place	<ul style="list-style-type: none"> <li>• External Environmental Monitor (EEM) is in place</li> <li>• Staff environmental focal points appointed by GPMO and PIEs</li> <li>• Environmental supervision engineers (ESE) contracted by PIEs</li> </ul>	Yes No Yes No Yes No

<sup>3</sup> In addition to project-specific monitoring, local EPBs will conduct independent ambient and/or enforcement monitoring as per national requirements. This is separate to, and not funded by, the project.

Indicator	Criteria	Assessment
	<ul style="list-style-type: none"> <li>Environment monitoring stations (EMS) contracted by PIEs</li> </ul>	Yes No
Bidding documents and contracts with environmental safeguards	<ul style="list-style-type: none"> <li>Bidding documents and contracts incorporating the environmental activities and safeguards listed as loan assurances</li> <li>Bidding documents and contracts incorporating the environmental contract clauses listed in Section J of the EMP</li> </ul>	Yes No Yes No
EMP financial support	<ul style="list-style-type: none"> <li>The required funds, if applicable, have been set aside for EMP implementation</li> </ul>	Yes No

17. **Environmental monitoring.** Table EMP-4 shows the environmental monitoring program designed for the three subprojects, defining the scope, location, parameter, duration and frequency, and responsible agencies, for monitoring during the construction. No environmental monitoring is deemed necessary for the operational stage. Environmental monitoring will include monitoring of air quality and noise during construction. These will be conducted by local EMSs (contracted by the PIEs). The selection of monitoring locations is based on distances from the subproject sites, number of households and populations affected, and the extent of sensitivity to air and noise impacts (e.g. residential household, school).

18. The monitoring results will be compared with relevant PRC performance standards (Table EMP-5). Non-compliance with these standards will be highlighted in the EMRs. Monitoring results will be submitted by the EMSs to the PIEs, ESE and local EPBs on a monthly basis. In turn, the PIEs will submit the data to GPMO and EEM also on a monthly basis. GPMO will then submit to ADB in the annual EMRs (prepared with the support of the EEM–Table EMP-6).

**Table EMP-4: Environmental Monitoring Program**

Monitoring Location	Item	Monitoring Parameter	Monitoring Frequency & Duration	Implementing Entity	Supervising Entity
<b>Subproject 1: Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs</b>					<b>Estimated cost: \$17,000</b>
<b>Construction stage</b>					
I: On the campus of the Fangchenggang Poly Tech Vocational School (防城港市理工职业学校), at façade of building nearest to the following buildings during construction: 1. Training building #3 (#3 实训楼) 2. Student dormitories #3 and #4 (#3、#4学生宿舍) 3. Comprehensive information building (信息综合楼) 4. Sports management and auxiliary office building (体育管理及生活附属用房)  II: Guangxi College of Finance and Economics (广西财经学院): 1. East boundary of the school campus	Air quality	TSP	2 consecutive days (24-hr) per month until a PCR is issued	Local EMS	FPTVS, ESE
	Noise	L <sub>Aeq</sub>	2 consecutive days (day time only) per month until a PCR is issued		
<b>Subproject 2: Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone</b>					<b>Estimated Cost: \$30,000</b>
<b>Construction stage</b>					
1. Bannan Village 板南	Air quality	TSP	2 consecutive days (24-hr) per month until a PCR is issued	Local EMS	PUCIC, ESE
	Noise	L <sub>Aeq</sub>	2 consecutive days (day time only) per month until a PCR is issued		
<b>Subproject 6: Expansion of Pingxiang Border Trade Service Center</b>					<b>Estimated cost : \$10,000</b>
<b>Construction stage</b>					
1. Kafeng Village 卡凤 2. Busha Village 布沙	Air quality	TSP	2 consecutive days (24-hr) per month until a PCR is issued	Local EMS	PUCIC, ESE
	Noise	L <sub>Aeq</sub>	2 consecutive days (day time only) per month until a PCR is issued		
					<b>Total estimated cost: \$57,000</b>
<b>Notes:</b> EMS = Environmental Monitoring Station 环境监测站; ESE = environmental supervision engineer 环境监理; L <sub>Aeq</sub> = A-weight equivalent sound pressure level; FPTVS = Fangchenggang Poly Tech Vocational School 防城港市理工职业学校; GPMO = Guangxi project management office; PCR = project completion report; PUCIC = Pingxiang Urban Construction and Investment Company 凭祥市城市建设投资有限公司; TSP = total suspended particulates;					

**Table EMP-5: Monitoring Indicators and Applicable PRC Standards<sup>4</sup>**

Phase	Indicator	Standard
Construction	TSP	Class II <i>Ambient Air Quality Standard</i> (GB 3095-2012)
	Noise limits of PME at boundary of construction site	<i>Emission Standard of Environmental Noise for Boundary of Construction Site</i> (GB 12523-2011)

Note: **PME** = powered mechanical equipment

19. **Independent compliance monitoring.** Independent evaluation of EMP implementation will be undertaken by the ESE and EEM. The budget for the ESEs is estimated at \$615,000. The EEM will be recruited as an individual consultant (\$100,000) and will cover the three subprojects. GPMO will report the EEM's independent evaluation to ADB on the subprojects' adherence to the EMP, information on subproject implementation, environmental performance of the contractors, and environmental compliance through quarterly project progress reports and annual EMRs (Table EMP-6). The EEM will visit the project sites twice a year and support GPMO in developing the annual EMRs. The reports should confirm the subprojects' compliance with the EMP and local legislation (including the PRC's environmental assessment and implementation requirements), the results of independent evaluation (both contractor compliance with the EMP and the results of environmental monitoring by local EMSs), identify any environment related implementation issues and necessary corrective actions, and reflect these in a corrective action plan. Operation and performance of the project GRM, environmental institutional strengthening and training, public consultation, compliance with all covenants under the project and site photographs will also be included in the report. A template for the Environmental Monitoring Report is included in the Facility Administration Manual.

20. **Monitoring by ADB.** Besides reviewing the annual EMRs from GPMO and BoCOM, ADB missions will inspect the project progress and implementation on site at least once a year. For environmental issues, inspections will focus mainly on (i) environmental monitoring data; (ii) the implementation status of subproject performance indicators specified in the loan documents for the environment, environmental compliance, implementation of the EMP, and environmental institutional strengthening and training; (iii) the environmental performance of contractors, ESEs, EEM, PIEs and GPMO; and (iv) operation and performance of the project GRM and ongoing information disclosure and public consultation. The performance of the contractors in respect of environmental compliance will be recorded and will be considered in the next bid evaluations. ADB also prepares the final Project Completion Report.

21. **Environmental acceptance monitoring and reporting.** Following the PRC's *Management Measures for Inspection and Acceptance of Environmental Protection at Construction Project Completion* (MEP Decree [2001] No. 13 and 2010 amendment), within three months after the completion of each subproject, an environmental acceptance monitoring and audit report for the subproject shall be prepared by a licensed environmental monitoring institute. The report will be reviewed and approved by the local EPB, and then reported to ADB (Table EMP-6). The environmental acceptance reports for the completed subprojects will indicate the timing, extent, effectiveness of completed mitigation and maintenance, and the needs for additional mitigation measures and monitoring during operation. The GPMO with support of the EEM will prepare a draft Project Completion Report which includes an environment chapter.

<sup>4</sup> The project applies PRC standards. A comparison of PRC standards with internationally accepted standards (as defined in the World Bank's Environment Health and Safety Guidelines) was conducted for the IEE. The comparison confirmed that PRC standards are either internationally accepted, or have comparable standard limits with most of the international standards.

**Table EMP-6: Reporting Plan**

Reports		From	To	Frequency
<b>Construction Phase</b>				
Internal progress reports by contractors	Internal project progress report by construction contractors, including monitoring results	Contractors	GPMO, PIEs	Monthly
Environmental monitoring and compliance monitoring reports	Environmental monitoring report	EMSs	Local EPBs, PIEs, GPMO, ESE, EEM	Monthly
	Environment monitoring reports (EMR)	GPMO (with EEM support)	ADB	Annually
	Environment monitoring reports (EMR)	BoCOM	ADB	Annually
Acceptance report	Environmental acceptance monitoring and audit report	Licensed institute	Local EPBs	Once; within 3 months of completion of physical works
<b>Operational Phase</b>				
Environmental monitoring	Quarterly project progress reports (until a PCR is issued)	Local EMSs	Local EPBs, PIEs, GPMO, EEM	Quarterly
	Environment monitoring reports (until a PCR is issued)	GPMO (with EEM support)	ADB	Annually
Project completion report	Draft project completion report including environmental chapter	GPMO (with EEM support)	ADB	On completion
	Final project completion report	ADB	ADB	On completion
<b>Notes:</b> ADB = Asian Development Bank; EEM = external environmental monitor; EMR = environmental monitoring report; EMS = Environmental Monitoring Station; EPB = Environmental Protection Bureau; ESE = environmental supervision engineer; GPMO = Guangxi project management office; PCR = project completion report; PIE = project implementing entity.				

## **E. Institutional Capacity Building and Training**

22. The capacity of GPMO, PIEs and contractors' staff responsible for 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 capacity and expertise in environmental management through (i) institutional capacity building, and (ii) training.

23. **Institutional strengthening.** The capacities of GPMO and PIEs to coordinate environmental management will be strengthened through a set of measures:

- (i) PMC will support GPMO with appointment of an international environment consultant (2 months) and a national consultant (10 months) to provide support on environmental management for all subprojects and preparation of Tranche 2.
- (ii) The appointment of qualified staff within the GPMO and each PIE as environmental focal points in charge of EMP coordination, implementation and site inspections including GRM.
- (iii) The commissioning of an independent ESE by each PIE to provide independent monitoring and verification of EMP implementation.
- (iv) The appointment of EEM (an independent consultant) under the PMC service to guide GPMO and PIEs in implementing the EMP and ensuring compliance with ADB's Safeguard Policy Statement (SPS 2009).

24. **Training.** GPMO, PIEs and contractors will receive training in EMP implementation, supervision, and reporting, and on the GRM (**Table EMP-7**). Training will be facilitated by the EEM with support of experts under the PMC services, as needed. The ESMS and EARF also identify institutional strengthening and training to support effective implementation of requirements.

**Table EMP-7: Training Program**

Training	Attendees	Contents	Times	Period (days)	No. of persons	Cost (\$/person /day)	Total Cost
EMP adjustment and implementation	GPMO, PIEs, contractors	Development and adjustment of the EMP, roles and responsibilities, monitoring, supervision and reporting procedures, review of experience (after 12 months)	Twice - Once prior to, and once after the first year of subproject implementation	2	20	100	\$8,000
Grievance Redress Mechanism	GPMO, PIEs, contractors, local EPBs	Roles and responsibilities, procedures, review of experience (after 12 months)	Twice - Once prior to, and once after the first year of subproject implementation	1	15	100	\$3,000
Environmental protection	GPMO, PIEs, contractors	Pollution control on construction sites (air, noise, wastewater, solid waste), use of PPE during construction and operation, occupational health and safety	Once (during subproject implementation)	2	15	100	\$3,000
Environmental monitoring	GPMO, PIEs, contractors	Monitoring methods, data collection and processing, reporting systems	Once (at beginning of subproject construction)	1	10	100	\$1,000
<b>Total estimated cost:</b>							<b>\$15,000</b>
<b>Notes:</b> EPB = Environmental Protection Bureau; GPMO = Guangxi project management office; PIE = project implementing entity; PPE = personal protective equipment.							

25. **Capacity building.** In addition to training for EMP implementation, the project will provide consulting services and training to assist and train the staff of GPMO and PIEs in project management, environmental management, land acquisition and resettlement, procurement, as well as external resettlement and environmental monitoring. In addition to the training, specified in the plan, \$30,000 will be included in the budget for each tranche for wildlife trafficking enforcement capacity development.

#### **F. Consultation, Participation and Information Disclosure**

26. **Consultation during project preparation.** Chapter VII of the IEE describes the public participation and consultation carried out during project preparation.



27. **Future public consultation plan.** Plans for public involvement during construction and operation stages were developed during project preparation. These include public participation in (i) monitoring impacts and mitigation measures during the construction and operation stages; (ii) evaluating environmental and economic benefits and social impacts; and (iii) interviewing the public after the subproject is completed. These plans will include several types of public involvement, including site visits, interviews, workshops and investigation of specific issues (Table EMP-8).

**Table EMP-8: Public Consultation Plan**

Organizer	Format	No. of Times	Subject	Attendees	Budget
<b>Construction Stage</b>					
GPMO	Public consultation & site visit	4 times: 1 time before construction commences and 1 time each year during construction	Adjusting of mitigation measures, if necessary; construction impact; safety near construction sites; comments and suggestions	Residents adjacent to subprojects, representatives of local communities	\$5,000
GPMO	Expert workshop / press conference	As needed based on public consultation	Comments / suggestions on mitigation measures, public opinions	Experts of various sectors, media	\$2,000
<b>Operational Stage</b>					
GPMO, PIEs	Public consultation and site visits	Once in the first year	Effectiveness of mitigation measures, impacts of operation, comments and suggestions	Residents adjacent to subproject sites, social sectors	\$1,500
GPMO, PIEs	Expert workshop or press conference	As needed based on public consultation	Comments and suggestions on operational impacts, public opinions	Experts of various sectors, media	\$1,500
<b>Total budget:</b>					<b>\$10,000</b>
Notes: <b>GPMO</b> =Guangxi project management office; <b>PIE</b> = project implementing entity.					

## G. Grievance Redress Mechanism

28. A Grievance Redress Mechanism (GRM) will be established as part of this EMP to receive and manage any public concerns or issues which may arise due to the subprojects. The GRM comprises: (i) a set of clear procedures developed by GPMO to receive, record, and address any concerns which are raised; (ii) specific contact details for individuals at the GPMO, PIEs and the contractors, and (iii) the local EPBs.

29. All contractors and work staff will be briefed by the GPMO on the GRM. Contractors and workers will be instructed to be courteous to local residents and, in the event they are approached by the general public with an issue, to immediately halt their work and report the issue to the foreman. The foreman will immediately report the issue to the PIEs or GPMO for action.

30. There are multiple entry points to the GRM, including face-to-face meetings, written complaints, hotline number and telephone conversations, anonymous drop-boxes for written comments, and/or e-mail. All concerns received will be treated confidentially and professionally. The identity of individuals will not be circulated among subproject agencies or staff and will only be shared with senior staff, and then only when there is clear justification. In the construction period and the initial operational period covered by loan covenants, GPMO will report on GRM to ADB, including complaints and their resolution in the quarterly project progress reports and annual environmental monitoring reports up to the project completion report.

31. Basic steps for resolving complaints are as follows and illustrated in Figure EMP-1.

Step 1: For environmental problems during the construction and operational stages, the affected person (AP) can register his/her complaint directly with the contractors or with the GPMO complaint center via its hotline. A joint hotline for resettlement and environment issues will be established within GPMO. Complaints related to land acquisition and resettlement issues will be directed to the GPMO and relevant agencies in accordance with the RP. Contractors are required to set up a complaint hotline and designate a person in charge of handling complaints, and advertise the hotline number at the main entrance to each construction site, together with the hotline number of the GPMO complaint center. The contractors are required to maintain and update a Complaint Register to document all complaints. The contractors are also required to respond to the complainant in writing within 7 calendar days on their proposed solution and how it will be implemented. If the problem is resolved and the complainant is satisfied with the solution, this can be recorded by the GPMO complaint center and follow-up should be carried out during a next project site visit by the EEM. The contractors are required to report complaints received, handled, resolved and unresolved to the GPMO complaint center immediately, and to the IAs and GPMO monthly (through progress reporting).

Step 2: If no appropriate solution can be found during step 1, the contractor has the obligation to forward the complaint to the GPMO complaint center, the PIEs and local EPBs. The PIEs and local EPBs shall immediately notify GPMO upon receiving the complaint. For an oral complaint, proper written records shall be made. Once a complaint is registered and put on file, the GPMO complaints center will immediately notify ADB and others concerned to discuss acceptable solutions. The GPMO complaint center will assess the eligibility of the complaint, identify the solution and provide a clear reply for the complainant within 14 calendar days. The EEM will assist the GPMO complaint center in addressing the complaint, and follow-up with the AP. The GPMO complaint center will also inform the ADB project team and submit all relevant documents. Meanwhile, the GPMO complaint center will convey the complaint/grievance and suggested solution to the contractors, PIEs, and/or facility operator in a timely manner. The contractors during construction and the facility operator during operation will implement the agreed redress solution and report the outcome to the GPMO complaint center within fifteen (15) working days.

Step 3: In case no solution can be identified by the GPMO complaint center, or the complainant is not satisfied with the proposed solution, the GPMO complaint center will organize, within 14 calendar days, a multi-stakeholder hearing (meeting) involving all relevant stakeholders (including the complainant, PIEs, contractors, facility operator, local EPB, and GPMO). The hearing shall identify a solution acceptable to all, and formulate an action plan.

32. The tracking and documenting of grievance resolutions by GPMO will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s); (ii) regular updating of the GRM database by the GPMO environmental focal point; (iii) processes for informing stakeholders about the status of a case; and (iv) procedures to retrieve data for reporting purposes, including the periodic reports to the ADB.

33. At any time, an AP may contact ADB (East Asia Department) directly, including the ADB Resident Mission in the PRC.

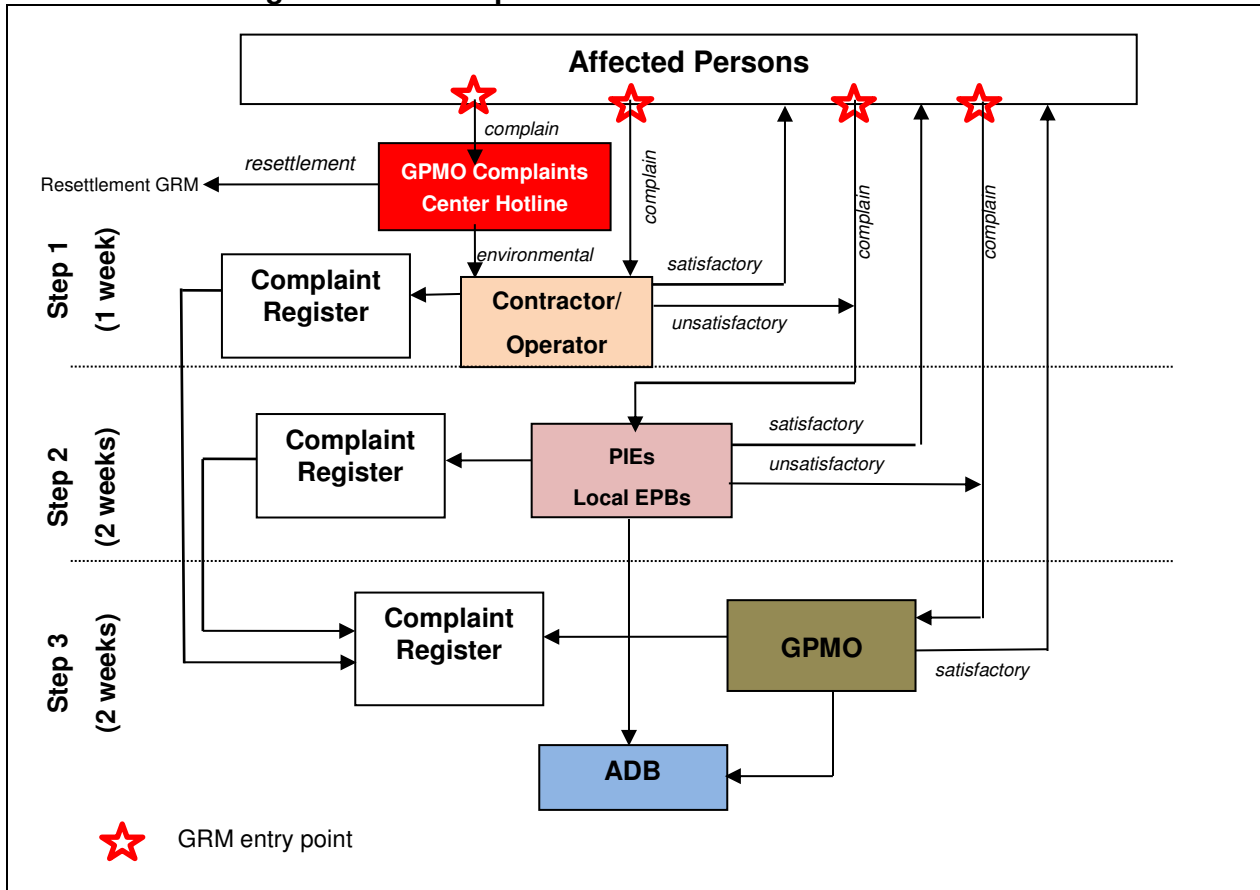
34. If the above steps are unsuccessful, persons who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The

Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.<sup>5</sup>

---

<sup>5</sup> See: <http://compliance.adb.org/>

**Figure EMP-1: Proposed Grievance Redress Mechanism**



## H. Cost Estimates

35. The total cost for EMP implementation comprises: (i) mitigation measures (Table EMP-2), (ii) environmental monitoring by local EMSs (Table EMP-4), (iii) supervision of EMP implementation by ESE, (iv) public consultation (Table EMP-7), (v) training (Table EMP-8), and (vi) the compliance monitoring, training and reporting by EEM. The total cost is summarized in Table EMP-9 and is \$1,321,000. Of this total the mitigation cost of \$394,000 has been included in the civil works costs in the contractor bids for implementing environmental mitigation measures for air quality, noise, water quality and solid waste on construction sites. The budget allocation is indicated in the notes accompanying Table EMP-9.

**Table EMP-9: Estimated Budget for Environmental Management Plan Implementation**

EMP Item	Estimated Cost	
	EA or PIE Funded	ADB Funded
Environment Training <sup>1</sup>		\$15,000
Wildlife Trafficking Training <sup>1</sup>		\$30,000
Mitigation measures <sup>2</sup>	\$394,000	
Environmental monitoring by local EMS <sup>3</sup>		\$57,000
Environmental supervision by ESE <sup>4</sup>	\$615,000	
Environmental management/co-ordination by Environment Specialist specialist (2 months international@25000) and 10 months national@5000) <sup>5</sup>		\$100,000
Wildlife trafficking specialist (5 months@5000) <sup>5</sup>		\$25,000
External compliance monitoring by EEM (10 months@5000) <sup>5</sup>		\$50,000
Public consultation <sup>6</sup>		\$10,000
<b>Subtotal:</b>	\$1,009,000.00	\$287,000.00
<b>Total:</b>	<b>\$1,296,000.00</b>	
<b>Notes:</b> ADB = Asian Development Bank; EA = executing agency; EEM = external environmental monitor; EMP = environmental management plan; EMS = Environmental Monitoring Station; ESE = environmental supervision engineer; PIE = project implementing entity.		

<sup>1</sup> Included in PMC training budget

<sup>2</sup> Included in civil works contract - contractors' bids

<sup>3</sup> Included in Project Management Consultant Services

<sup>4</sup> Included in Supervision Engineer Costs paid by PIEs

<sup>5</sup> Included in Project Management Consultant Services

<sup>6</sup> Included in Project Management Consultant Services

36. Excluded from the budget are (i) infrastructure costs which relate to environment and public health but which are already included in the project direct costs and (ii) remuneration for the GPMO environment focal point and consulting packages for the non-structural components, (covered elsewhere in the project budget).

37. Contractors will bear the costs for all mitigation measures during construction, including those specified in the tender and contract documents as well as those to mitigate unforeseen impacts due to their construction activities. The PIEs will bear the costs related to mitigation measures during operation (e.g. provision of PPE to students and teachers during training in subproject 2).

## I. Mechanisms for Feedback and Adjustment

38. The EMP is a living document. The need to update and adjust the EMP will be reviewed when there are design changes, changes in construction methods and program, unfavorable environmental monitoring results, monitoring locations are no longer appropriate or mitigation measures are inadequate or ineffective. Based on environmental monitoring and reporting systems in place, GPMO (with the support of the EEM) shall assess whether further mitigation measures are required as corrective action, or improvement in environmental management practices are required. GPMO will inform ADB promptly on any changes to the project and needed adjustments to the EMP. The updated EMP will be submitted to ADB for review and approval, and will be disclosed on the ADB project website, if required.

## **J. Environmental Contract Clauses for Inclusion into Tender Documents and Civil Works Contracts**

39. The following contract clauses for safeguarding the environment during construction shall be incorporated into all the tender documents and works contracts.

### 1. Construction time:

1.1 There shall be no night time (between 22:00 and 06:00 hours) construction. Piling works shall also be prohibited between 12:00 and 14:30 hours.

### 2. Protection of air quality

2.1 Watering of unpaved areas and exposed dust-prone stockpiles shall be undertaken at least two times each day except on rainy days

2.2 Dust-prone materials shall be stored in areas with shelters on four sides and on top. If such materials have to be stored in open area, they shall be covered with strong tarpaulin.

2.3 Vehicle speed in unpaved areas shall be limited to  $\leq 8$  km/h. Speed limit sign shall be posted in these areas.

2.4 Construction site exits shall be paved with gravel or asphalt

2.5 Wheel washing equipment shall be installed or wheel washing shall be conducted manually at each exit of the works area and asphalt/concrete mixing station to prevent trucks from carrying muddy or dusty substance onto public roads.

2.6 Vehicles with an open load-carrying case, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards, and shall always be covered with a strong tarpaulin.

2.7 Construction vehicles and machinery shall be regularly maintained to minimize exhaust emissions from these sources.

2.8 Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor, and withholding of payment.

### 3. Protection of the acoustic environment

3.1 Machinery and equipment shall be maintained and repaired regularly and properly to keep them in good working condition and to minimize noise.

3.2 Low noise machinery or equipment with sound insulation shall be deployed.

3.3 Temporary noise barriers or hoardings shall be erected around the equipment to shield the noise from equipment.

3.4 Suitable hearing protection (such as ear muffs) shall be provided to construction workers when working near noisy machinery such as during piling.

3.5 The use of horns is forbidden unless absolutely necessary. The use of whistles shall be minimized.

3.6 Noisy activities affecting other site users such as students in training classes or

taking examinations shall be avoided and the deployment of low noise machinery and temporary noise barrier shall be adopted.

4. Protection of water quality

- 4.1 Runoff from construction sites shall be collected with drainage ditches to prevent runoff containing muddy water from polluting nearby roads, land and water bodies.
- 4.2 Oily-water separators and sedimentation tanks shall be installed and operated on construction sites to treat process water and muddy runoff with high concentrations of total petroleum hydrocarbon and suspended solids. If necessary, flocculants such as polyacryl amide (PAM) shall be used to facilitate sedimentation.
- 4.3 Portable toilets and small package wastewater treatment plants and/or septic tanks shall be provided on construction sites for the workers. If there are nearby public sewers, interim storage tanks and pipelines shall be installed to convey wastewater to public sewers.
- 4.4 Fuels, oil, and other hazardous materials on construction sites shall be stored within secured areas on impermeable surfaces protected by bunds and provided with cleanup kits.
- 4.5 Chemical spills into drains and water bodies shall be promptly cleaned up according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the GPMO and local EPB.

5. Protection of biological resources and wildlife

- 5.1 Construction workers are prohibited from capturing any wildlife during construction.
- 5.2 Where a tree has to be removed or an area of grassland disturbed, trees shall be replanted and the area revegetated after construction.
- 5.3 Tree planting shall use species of local provenance. Planting of exotic or invasive species shall be prohibited.

6. Solid waste management

- 6.1 The re-use of C&D wastes on the project shall be maximized.
- 6.2 Store all refuse and C&D waste generated on construction sites shall be stored in designated areas and regularly removed from these locations for disposal or reuse.

7. Construction site sanitation

- 7.1 Adequate and functional systems for sanitary conditions, toilet facilities, waste management, labor dormitories and cooking facilities shall be provided.
- 7.2 The site shall be effectively cleaned and disinfected. During site formation, the site shall be sprayed with phenolated water for disinfection. Toilets and refuse bins shall be disinfected and timely removal of solid waste shall be ensured.
- 7.3 Rodents on site shall be exterminated at least once every 3 months. Mosquitoes and flies shall be exterminated at least twice each year.
- 7.4 Public toilets shall be provided in accordance with the requirements of labor

management and sanitation departments in the living areas on construction site, and designated staff responsible for cleaning and disinfection shall be appointed.

- 7.5 Construction site domestic wastewater shall be discharged into the municipal sewer system or treated on-site using portable systems or septic tanks.

8. Occupational safety

- 8.1 At least one environment, health and safety (EHS) officer shall be appointed to manage occupational health and safety risks on construction sites.

- 8.2 Personal protective equipment (PPE) (safety hats and shoes and high visibility vests) shall be provided to all construction workers, with strict enforcement on all workers wearing PPE. Personal protective equipment (PPE) such as goggles, gloves and respirators shall be provided to construction workers doing interior fit-out to minimize skin exposure to chemicals and inhalation of VOC.

- 8.3 Ear plugs for hearing protection shall be provided to workers operating and working near noisy power mechanical equipment.

9. Food safety

- 9.1 Food hygiene in canteens on site shall be inspected and supervised regularly. Canteen workers must have valid health permits.

- 9.2 If food poisoning is discovered, effective control measures shall be implemented immediately to prevent it from spreading.

10. Disease prevention and health services

- 10.1 All construction workers shall undergo a physical examination before starting work on site. If infectious disease is found, the patient must be isolated for treatment to prevent the disease from spreading. Physical examination shall be conducted on 20% of the workers every year from the second year onwards.

- 10.2 Health clinic shall be established at location where workers are concentrated, which shall be equipped with common medical supplies and medication for simple treatment and emergency treatment for accidents.

- 10.3 Induction and training by local health departments on prevention and management of communicable diseases shall be provided.

11. Social conflict prevention

- 11.1 The following shall be prioritized: (i) employ local people for works, (ii) ensure equal opportunities for women and men, (iii) pay equal wages for work of equal value, and pay women's wages directly to them; and (iv) not employ child or forced labor.

12. Community health and safety

- 12.1 A traffic control and operation plan shall be prepared together with the local traffic police prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours,



regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls and planning in advance.

- 12.2 Construction billboards, which include construction description, schedule, responsible person and complaint phone number, shall be erected at the entry to each construction site and construction staging area.
- 12.3 Residents and businesses shall be informed in advance of noisy construction activities such as piling, given the dates and duration of expected disruption and made aware of the project grievance redress mechanism.
- 12.4 Clear signs shall be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations, etc. and raising awareness on safety issues.
- 12.5 All construction sites shall be made secure and access by members of the public shall be discouraged through appropriate fencing, signage and/or security personnel, as appropriate.

### 13. Utility interruption

- 13.1 Contractors shall assess construction locations in advance and identify potential for disruption to services and risks before starting construction. Any damage or hindrance/disadvantage to local businesses caused by the premature removal or insufficient replacement of public utilities shall be subject to full compensation, at the full liability of the contractor who causes the problem.
- 13.2 If temporary disruption is unavoidable the contractor shall, in collaboration with relevant local authorities such as power company, water supply company and communication company, develop a plan to minimize the disruption and communicate the dates and duration in advance to affected persons.

### 14. Grievance redress mechanism

- 14.1 The contractor's EHS officer shall be responsible for managing the grievance redress mechanism (GRM) on site for receiving and handling complaints. In case of a complaint, the contractor shall notify the GPMO within one week and shall advise on the agreed solution.
- 14.2 The contractor shall disclose the GRM to affected persons before construction begins at the main entrance to each construction site.
- 14.3 The contractor shall maintain and update a Complaint Register to document all complaints.



**Technical Assistance Consultant's Report**

---

**Contract No. 129430-SC 107547**

**PRC: Guangxi Regional Cooperation and Integration Promotion Investment Program**

**Climate Risk and Vulnerability Assessment for  
Guangxi Regional Cooperation and Integration  
Promotion Investment Program, the People's Republic  
of China**

**DRAFT**  
August 2016

Prepared by Wei Ye

This consultant's report does not necessarily reflect the views of ADB or the Government concerned, and ADB and the government cannot be held liable for its contents

**Asian Development Bank**

## TABLE OF CONTENTS

---

List of Tables and Figures.....	iii
Acronyms and Abbreviations .....	iv
Executive summary.....	1
Introduction.....	3
Purpose and scope of this study.....	7
Methodology .....	9
Overall approach.....	9
Spatial climate change scenario .....	11
Site specific climate change scenario .....	11
Climate observation and change projections.....	12
Observational temperature data and their future projections .....	12
Observational rainfall data and their future projections.....	12
Sea level change projection.....	23
Climate change impact on Tranche 1 subprojects and the implications for subproject design.....	25
The adaptation options.....	28
“Hard” adaptation options.....	28
“Soft” measures .....	29
Conclusion.....	30
References.....	32
Appendix 1: Climate change scenario generation.....	35
Appendix 2: IPCC AR5 GCMs used in this scenario generation and their horizontal and vertical resolutions.....	38

## LIST OF TABLES AND FIGURES

---

Table 1: List of civil infrastructure subproject in Tranche 1.....	7
Table 2: Three climate projections and their input conditions represent the uncertainty ranges.....	11
Table 3: Information of the meteorological stations.....	11
Table 4: General rainfall information for the four stations.....	19
Table 5: The GEV results of annual maximum daily rainfall and its future projections..	20
Table 6: Sea level change scenario of Beibu Gulf.....	24
Table 7: Heatwave: baseline and future projection.....	27
Table 8: Estimation of additional construction cost of adjusting drainage system design.....	28
Figure 1: The program location with elevation and river network.....	4
Figure 2: Baseline annual average mean temperature (°C) and 2050, 2100 projections based on the mid scenario projection.....	14
Figure 3: Observed annual average mean temperature (°C) .....	14
Figure 4: Baseline monthly normal mean temperature (°C) and 2050, 2100 projection.....	15
Figure 5: Baseline rainfall (mm) of the rainy season (Jun-Oct) and 2050, 2100 projections based on the mid scenario projection.....	17
Figure 6: Observed annual rainfall of the 4 stations (mm).....	18
Figure 7: Monthly normal rainfall and climate change projection.....	19
Figure 8: Climate change impact on Qinzhou annual maximum daily rainfall.....	21
Figure 9: Climate change impact on Longzhou annual maximum daily rainfall.....	23
Figure 10: Normalised change pattern of sea level of China South Sea.....	24

## ACRONYMS AND ABBREVIATIONS

---

ADB	Asian Development Bank
ARI	annual recurrence interval
BEZ	border economic zone
CRVA	Climate Risk and Vulnerability Assessment
DI	Design Institute
FSR	The feasibility study report
GCM	General Circulation Model
GEV	generalized extreme value
GHGs	Greenhouse Gases
Guangxi	Guangxi Zhuang Autonomous Region
IA	Implementing Agency
IPCC	Intergovernmental Panel on Climate Change
masl	metres above sea level
MFF	Multitranches Financing Facility
PRC	the People's Republic of China
RCP	Representative Concentration Pathway (of Greenhouse gases)

## A. Executive Summary

1. This study is a climate risk and vulnerability assessment (CRVA) of climate change impact on the Regional Cooperation and Integration Promotion Investment Program (RCI) at Guangxi Zhuang Autonomous Region (Guangxi), People's Republic of China (PRC). The RCI program is designed as a Multi-tranche Financing Facility (MFF) and is concentrated on the border area with Viet Nam in southern Guangxi. The program area covers four prefecture-level municipalities of Qinzhou, Fangchenggang, Chongzuo and Baise and the counties or county-level cities under their respective jurisdictions. This climate CRVA is mostly focused on the infrastructure development subprojects in the RCI program. The infrastructure components in the program include construction of school buildings, administration buildings, commercial market facilities and roads. This study provides the context of the program area but the detailed assessment focuses on the three Tranche 1 infrastructure investment subprojects.

2. The RCI program area has a southern monsoon Asian sub-tropical climate, which is characterized by hot summer with warm winter and plenty of rainfall. Qinzhou and Fangchenggang are among the Chinese cities that have the highest annual rainfall, over 2000 mm on average. Heavy rainfall induced flood is a major natural hazard in the area. In addition, the RCI program area is characterized by complex geology and has frequent geological disasters, such as landslide, debris flow, and karst collapse. Geological disasters have a high correlation with rainfall intensity. In addition, both Qinzhou and Fangchenggang are coastal cities nearby the Beibu Gulf of China South Sea. Historically, high tide together with strong typhoon and tropical storm have caused backwater effects in the rivers or overtopped or destroyed the sea wall and lead to urban flooding in the cities, damaged inland infrastructure. In addition, the program area is situated in the south of the tropic of cancer. The heatwave from high temperature in the summer season has the potential to harm human health.

3. The climate change projections of 2050 and 2100 that were constructed for the program area based on the pattern scaling method. Different greenhouse gas concentration pathways (RCPs) published by IPCC were used in combination with different climate sensitivity to generate the uncertainty range of the global warming trend. The IPCC AR5 GCM model ensemble was used to produce the 'best guess' change scenarios for future climate, sea level and extreme rainfall.

4. It was found that climate change will likely have a profound impact on both temperature and precipitation in the program area. In comparison to climate change impact on the normal climate, climate change impact on climate variation such as heavy rainfall events will likely be even more significant. The future changing climate will have important implications for the RCI program. Sea level likely continues to rise; the heavy storm likely becomes more intensified; which indicates a higher flood and landslide risk in future. The daily maximum temperature change implies more severe heatwave events in future in terms both intensity and duration, with potential harmful effects to human health.

5. Several adaptation options were identified for Tranche 1 infrastructure subprojects based on the completed feasibility study reports. These adaptation options were discussed and agreed with staff of the implementing agencies (IAs) and design institutes (DIs): adjustment of drainage system design to increase capacity to accommodate additional rain water due to enhanced storm intensity; allocation of additional electricity supply for air conditioning system; provision of space for air conditioning system facilities. Options out of the scope of RCI program were provided to EA, IA and DI as suggestions and recommendations: examination of the

planned slope stabilization measures to ensure greater resilience to enhanced surface flood risk; planning green space in the project area with native vegetation; and awareness raising and preparedness training for heatwave conditions.

DRAFT

## B. Introduction

6. The investment program will help the PRC to achieve its strategic objective of greater integration with the global economic system through improved connectivity and strengthening of regional economic cooperation and integration. The program is aiming to assist Guangxi in implementing its action plan for regional cooperation and integration with the members of the Association of the Southeast Asian Nations (ASEAN), particularly the Greater Mekong Subregion (GMS) countries. The program will stimulate economic corridor development between Guangxi and the northern border provinces of Viet Nam by: ((i) supporting the expansion of small and medium-sized enterprises (SME) in border areas; (ii) facilitating efficient cross-border financial transactions and investments; (iii) facilitating the development of an integrated and interoperable cross-border e-commerce platforms for the PRC and Viet Nam; (iv) providing key infrastructure and trade-related services in border economic zones; and (v) improving physical and informational connectivity and policy coordination.<sup>1</sup>

7. Guangxi's action plan includes a list of priority investment projects that are intended for financing over 2014–2022 by various national and regional funding sources, multilateral development banks such as ADB, and the private sector. The PRC government has requested ADB to provide a \$450 million MFF loan to fund a portion of the long-term investment needed for implementing Guangxi's strategies and action plans for both the GMS and the Belt and Road Initiative.<sup>2</sup>

8. The RCI program includes a series of subproject components that are proposed to be implemented in 3 tranches, include infrastructure developments. As infrastructure is designed to provide long term service climate change could pose various threats. The long term climatic averages and extreme weather events are important factors which need to be considered in the planning, design, operation, maintenance and management of an infrastructure project. Climate change will likely alter both long term climatic averages and the frequency and severity of extreme weather events. For a sustainable infrastructure project development, it is thus important to make climate adaptation adjustments to engineering specifications, alignments, and master planning; incorporating associated environmental measures; and adjusting maintenance and contract scheduling (ADB 2010). Effective climate-proofing of an infrastructure project requires project specific climate risk and vulnerability assessment to identify, evaluate and implement feasible adaptation measures to strengthen project resilience to future climate change impacts. The objective of this study is to conduct climate change risk and vulnerability assessment (CRVA) for the RCI program, with specific attention being paid to infrastructure subprojects in Tranche 1.

---

<sup>1</sup> The Asian Development Bank (ADB) provided project preparatory technical assistance for preparation of the Proposed Multi-tranche Financing Facility People's Republic of China Guangxi Regional Cooperation and Integration Promotion Investment Program (TA-9120 PRC).

<sup>2</sup> The Silk Road Economic Belt and 21st Century Maritime Silk Road (the Belt and Road Initiative) is a strategic initiative to promote connectivity and strengthen economic partnerships between and among Asian, European and African continents in the spirit of open regionalism and identifies priorities for cooperation. (Guangxi has developed its own Belt and Road action plan with special emphasis on strengthening cooperation with the members of the ASEAN, particularly the GMS countries.



### C. Climate Hazards in the RCI program area

9. Guangxi is situated in the south of PRC, with the tropic of cancer traversing the region from the middle. Mountains are the dominant topography of the region, which occupy most area in the southwest, west and north. Guangxi adjoins the Beibu Gulf of the South China Sea in its south and the southeast area is mostly hills with patchy alluvial plains (Figure 1). Guangxi is strongly influenced by the south Asian monsoon, it has a warm climate with plenty of rainfall.

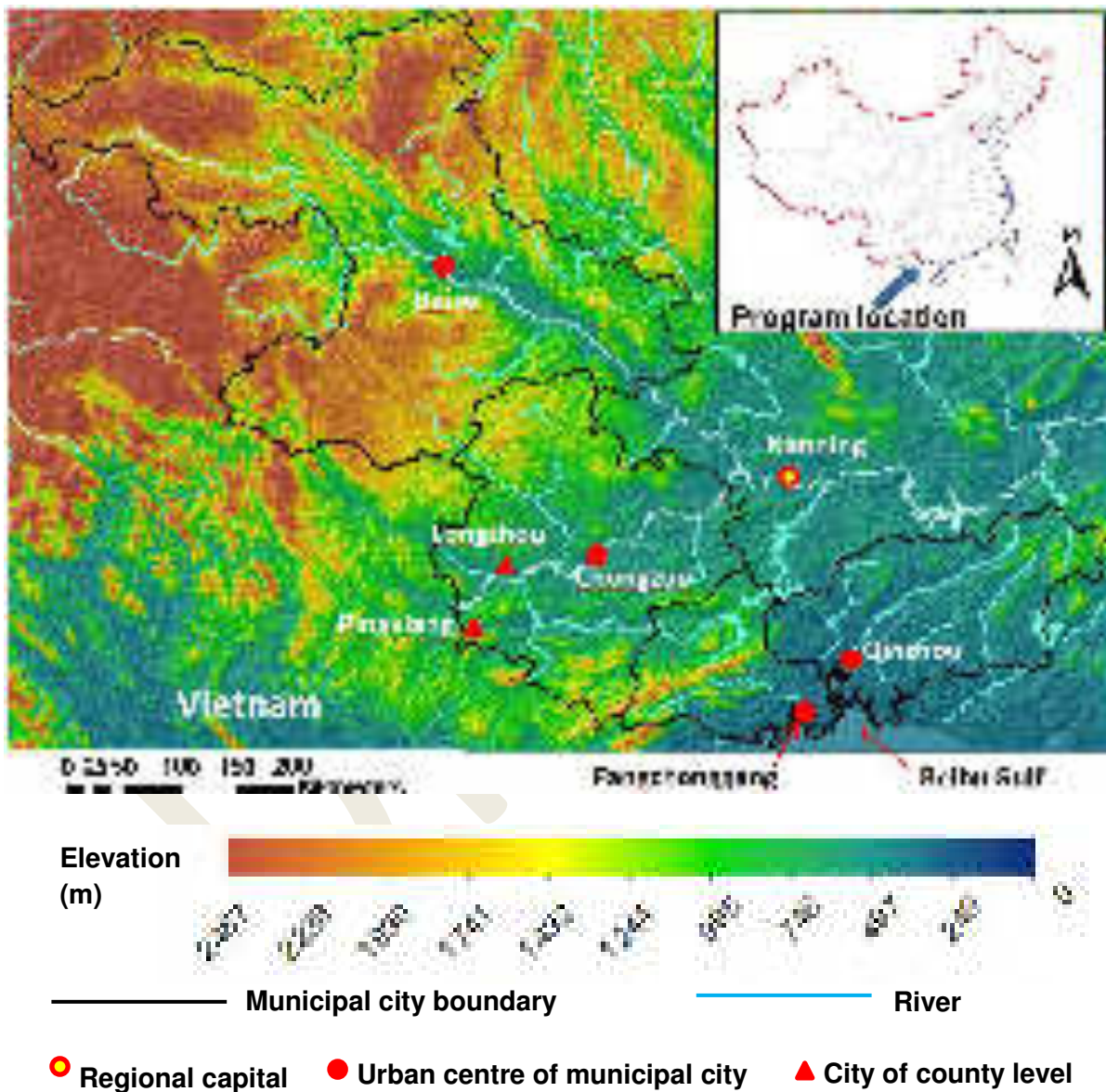


Figure 1: The program location with elevation and river network. Red spots are the location of the urban area for cities at various levels. Tranche 1 infrastructure subprojects are situated in Fangchenggang and Pingxiang

10. Rainfall varies significantly between seasons. The half year rainy season (April to September) receives more than 70% of the annual rainfall, and heavy storm is frequent in the rainy season. Flood and drought are the major climate hazards in Guangxi. Other climate hazards include frost damage, strong wind, hails and tropical cyclones. Geologically, Guangxi has the largest karst topography in China<sup>3</sup> and is among the regions that has the most serious rocky desertification. Geological hazards, such as landslide, debris flow, and karst collapse, have occurred frequently in the region.

11. Economically Guangxi is one of the less developed regions (at provincial level) in China. The annual GDP per capita is ranked 27 among 32 provinces and provincial level regions (2013 data) (GDRC, 2013).

12. The proposed RCI program will be implemented at four prefecture-level municipalities of Qinzhou, Fangchenggang, Chongzuo and Baise and the counties or county-level cities under their respective jurisdictions. The program area is located in south Guangxi, along the border between PRC and Vietnam, where the latitude spans from 21.5°N to 25.0°N and longitude from 104.5°E to 109.5°E. The elevation declines from the mountainous region in the northwest to the hilly and coastal low lying area in the southeast, with elevation varies from sea level of Fangchenggang and Qinzhou to over 1600 metre above sea level (masl) in Baise (Figure 1).

13. Of the four municipal urban cities under the RCI program, Baise and Chongzuo are situated at the southeast edge of the Yunnan-Guizhou Plateau. Mountains dominate the land area. The Youjiang River crosses Baise from northwest to southeast and is the major river network in Baise. The river channel is 388 km long above Baise urban area with average slope of 4.01‰. The Baise urban area is surrounded by mountains and has typical basin topography. The heavy storm is the major climate hazard in Baise, which accounts for 76% of total climate hazards in history (Li, 2011), and has resulted in huge economic loss to Baise. The storm of October 1997 triggered landslides causing 3 deaths, 191 house collapses, and damage to more than 450 road section (including 7 bridges). The direct economic loss was more than CNY42 million. The storm of July 2007 destroyed 75 houses, disrupted transport along 29 road sections and also led to heavy economic losses (Li, 2011). The Zuojiang River crosses Chongzuo from west to east and is the major river network of Chongzuo. It is the second order tributary of Zhujiang River, the second largest river in China in terms of the total discharge (the first is the Yangtze River). According to the Chronicle of Chongzuo, there were three historic severe river flood events of Zuojiang River that inundated Chongzuo urban area, which happened in 1881, 1955 and 1986 (Nong 1994).

14. Both Fangchenggang and Qinzhou are coastal cities that adjoin Beibu Gulf in the south. The topography of these two cities is mainly small hills and alluvial plains. The rivers in these two cities are largely small rivers and discharge directly to the Beibu Gulf. The cities are of maritime climate condition and are also under strong influence from the south Asian monsoon. The cities have the highest annual rainfall in China, particularly Fangchenggang. The urban drainage system is out-dated and lags behind urban development. Heavy storm has given rise to severe urban flooding. Furthermore, the sea tidal fluctuation of the Beibu Gulf exacerbates the flood hazard. High tide with storm or tropical cyclone causes backwater effects in the rivers, and/or overtops/damages sea embankment and consequently inundates the urban area. In August 2012, the typhoon Kai-tak flooded the cities. In Qinzhou, two thirds of the urban roads

---

<sup>3</sup> Karst topography is a geological formation shaped by the dissolution of a layer or layers of soluble bedrock, usually carbonate rock such as limestone. Some of the karst landscapes in Guangxi are included in the South China Karst UNESCO World Heritage Site designation as having outstanding universal value <http://whc.unesco.org/en/list/1248>.

were inundated, the deepest area was more than 1.5 m under water (Huang et al. 2014). During summer of 2014, Typhoon Rammasun resulted in record breaking heavy storms that hit the cities successively, causing major damage to both cities. Direct economic losses were more than CNY5 billion for Qinzhou (Qinzhou government news, 2015) and more than CNY4 billion for Fangchenggang (Fangchenggang News, 2016).

15. Heatwave is another climate hazard that potentially may threaten human health in the future. Previous research suggests that extreme heatwaves are associated with heightened levels of human morbidity and mortality (Kunst et al. 1993; Hajat et al. 2002). Data from Shanghai for 1975–2004 shows that the urban heat island effect and extremely high temperatures are directly responsible for an increased summer mortality rate (Tan et al. 2010). A series of heatwaves occurred in Guangxi during the summer of 2010. The heat related morbidity rate increased significantly but related mortality was low, only one heat related death observed in Nanning City (Qin and Li, 2011). Currently heatwave events are relatively rare in the program area and no research has been conducted specifically for the program locations.

16. Climate disasters are the major natural hazards threatening the urban cities in the RCI program area. Geological hazards have close correlation with climate, and are usually induced by storm. In the future, climate change will likely strengthen the rainfall intensity, and any potential sea level rise will also exacerbate potential tropical storm damage to coastal areas. It is important to take the future climate change scenarios into account in the planning and design of any infrastructure project, in order to ensure the long-term project service can be delivered as planned.

## D. Purpose and scope of this study

17. This study aims to provide a general assessment of potential risks posed by climate change to the RCI program. The focus is on infrastructure subproject components. Further detailed assessment was conducted for the infrastructure subprojects proposed for Tranche 1 based on the completed feasibility study reports (FSRs). The overall objective of this study is to identify and minimize future climate change risks to the RCI program through scientifically based impact assessment and adoption of feasible adaptation actions to improve resilience.

18. There are 10 subprojects in Tranche 1. Of these 10 subprojects, three will involve civil works for the construction of training and cross-border trade services facilities in Fangchenggang and Chongzuo. This study focuses on Tranche 1 civil infrastructure subprojects, which have completed FSR and relevant information as listed in Table 1.

19. The risk assessment will consider changes in temperature, rainfall and sea level based on outputs from the latest climate change research findings. Two future timeslices, i.e. 2050 and 2100 are analysed in this study to represent mid-term and long-term future conditions. Based on the findings, adaptation options have been recommended.

**Table 1: List of civil infrastructure subproject in Tranche 1**

<b>Location</b>	<b>Subproject Name</b>	<b>Subproject Contents and Funding Requirements</b>
Gongkou District of Fangchenggan Municipal City	Construction of Fangchenggang Training Centre for Chinese and Vietnamese Workers and SMEs	Construction of five buildings of 4-6 stories on the existing Fangchenggang Poly Tech Vocational School campus for training in trade and commerce services, student dormitories, sports management and offices.
Pingxiang of Chongzuo Municipal City	Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang BEZ	Construction of four 4-storey buildings for use as training centre, demonstration centre (for product exhibition), skill development and exchange centre and offices; and one 6-storey building for staff dormitory.
	Expansion of Pingxiang Border Trade Service Center	Construction of 13 buildings and facilities of 1-3 storeys for use as warehouses, border trade, custom declaration and inspection, banking, payment and account settlement, etc.

20. The main focus of this study is infrastructure subproject components that are vulnerable to changes in temperature and rainfall and their variability; the required information to support this CRVA is historical observed temperature and rainfall at the appropriate spatial and temporal scale and future climate change projections based. Relevant daily rainfall and temperature data was collected for 4 meteorological stations in the area.

21. Section E describes the methodology for the CRVA. Details of the baseline and scenario datasets used for climate impacts assessment are provided in Section F. Given the generated climate change scenarios, Section G describes the detailed impact assessment for Tranche 1

subprojects and identifies implications of climate change vulnerability on the subproject design. Section H discusses the adaptation options based on the completed FSRs. The report concludes with main findings of this study, identifies constraints and limitations and future recommendations.

DRAFT

## **E. Methodology**

22. A risk is the product of the magnitude of the hazards and the vulnerability of an object; while the vulnerability of an object is determined by its exposure, sensitivity and adaptive capacity to the hazard. In this study, hazard is used to denote the threat from climate variables such as precipitation, extremes and aftermath. Exposure is referred to the presence of assets or people that could be adversely affected when a hazard happens and which, thereby, are subject to potential harm, loss, or damage. Vulnerability is defined generally as the susceptibility to be adversely affected by climate hazards. Vulnerability can be either physical or socio-economic. Tranche 1 subprojects are vulnerable to potential rainfall induced water damage and human health is vulnerable to heatwave. The vulnerability also derives from ecosystem degradation due to human activities in the area. This section describes the methodology of identifying climate variables that may become hazardous to the subprojects and their projected future change. The climate change projections focus on the relative changes between historical and future periods by applying an ensemble based pattern scaling approach.

### **E.1 Overall approach**

23. The first step in CRVA is the construction of the future climate change scenarios. The construction of climate change scenarios involves the development of the baseline climate condition and the future climate change projections. Depending on the study objectives, spatial and/or site specific climate change scenarios are needed for impact assessment. In this study, the baseline spatial climatology for the RCI program areas was obtained from the WorldCLIM database (<http://www.worldclim.org>). The station based observed data collected was used for developing the site specific baseline climate condition.

24. The future climate projection is subject to considerable uncertainty. Uncertainty is a key element in most aspects of climate change. The decision on adaptation options must take careful account of the degree of uncertainty, the long-time horizons and the range of possible outcomes. The lifespan of a project may set the best time horizon for CRVA. One important aspect is to comprehend such an uncertainty range in decision making and policy planning process. Within this context, any climate change scenario constructed on a single Greenhouse Gas (GHG) emission rate and/or individual GCM outputs is generally considered inappropriate for CRVA purposes, because it cannot provide information on the uncertainty that characterizes future climate for a given location and from all uncertainty sources. The first important uncertainty is the future atmospheric GHG concentration. The GHG concentration will vary depending on how the future world develops socio-economically. Global economic development driven mainly by fossil-fuels will cause higher GHG concentrations than more sustainable, lower emission global economic development. To reflect such uncertainties, different GHG Representative Concentration Pathways (RCPs) were used by IPCC AR5 to represent different trajectories of future GHG concentrations that would result in radically different radiative forcing by the year 2100. It should be borne in mind that each RCP itself is subject to additional uncertainties arising from incomplete understanding by the modelling communities as regard to the processes involved in converting GHG emissions into atmospheric concentrations and radiative forcing as reflected, for example, in the different results obtained from various carbon cycle models. The second important uncertainty results from limitations in the scientific understanding of the response of the climate systems to radiative forcing. Consequently, there remain large differences between GCMs in their projections of global-mean temperature change. These are due largely to the differences in the ways in which climate feedback is modelled. For example, cloud feedbacks, which can enhance or dampen rates of global warming. The metric

“climate sensitivity”, broadly defined as the equilibrium global mean surface temperature change following a doubling of atmospheric CO<sub>2</sub> concentration, captures these uncertainties. Thus a combination of different RCPs and climate sensitivities can be used to characterise future scenarios that reflect the major uncertainties at the global scale. The three RCPs used in this study, RCP4.5, RCP6.0, and RCP8.5, are named after a possible range of radiative forcing values in the year 2100 (of 4.5, 6.0, and 8.5 W/m<sup>2</sup>, respectively). RCP6.0 with mid-climate sensitivity represents a middle range future global change scenario, which was used as an indicator of the mid-scenario projection of future global change, while RCP4.5 with low-climate sensitivity and RCP8.5 with high-climate sensitivity was used as indicators of the corresponding low and high bounds of the uncertainty range (Table 2). The third important uncertainty in climate change scenario generation is the difference between GCM simulations for given regions or locations. At the regional-to-local scale, the uncertainties expand in terms of the spatial patterns of climate change. As the current climate science still cannot identify any individual GCM that may be superior to others in simulating future climate change, it makes the CRVA a challenge because of the three key sources of uncertainties. To account for such an uncertainty in CRVA, a pattern scaling method (see Appendix 1 for detailed calculation process) was adopted and applied to a wide range of GCMs to build a model ensemble.

25. The advantage of pattern-scaling method is that the three key uncertainties – the future radiative forcing, the climate sensitivity and the GCM projected change – can be treated independently and combined flexibly and quickly to produce future climate scenarios (Wigley, 2003), while the key assumption underlining the pattern-scaling method is that, at first the RCPs can accurately represent the global responses of a GCM even when the response is non-linear (Raper et al, 2001); and secondly for a GCM, the change of its climatic variables are a linear function of its global annual mean temperature change at different spatial and/or temporal scales. This study made use of the GCM model results from phase 5 of the couple model intercomparison project (CMIP5), which was the data supporting the IPCC AR5 (see Appendix 2 for the GCM included). All 40 GCMs with monthly data outputs were used in spatial GCM scenario generation. Of the 40 GCMs, the 20 GCMs that have daily GCM outputs were used in extreme rainfall scenario construction; and the 24 GCMs that have sea level outputs were used in sea level change scenario construction.

26. As pointed out by Reichler and Kim (2008), the average simulation from model ensemble for a climate variable is normally used to capture the middle conditions, because the average often agrees better with observed climate than any individual model estimates. However, it was found that, though all GCMs has reasonable agreement in climate simulation at global or continental scale, the difference of GCMs results could be significantly large for local areas or small regions, which indicates a huge uncertainty at such spatial scales. Furthermore, this uncertainty is not consistent spatially; hence it is difficult to identify and eliminate certain GCMs from model ensemble. The one or two ‘outlier’ GCM results could generate a very biased projection for the average value of the ensemble. In this study, the median of the model ensemble, instead of the average, was used in order to provide a “best estimate” scenario of future change. It is worthwhile to note that we only use the median value in this study, mainly due to the relative small ensemble size. Ideally top and bottom percentiles should also be used to determine the high and low uncertainty range bounds, but for practical purposes of guidance for policy and action this often tends to expand the scenarios to the point of being unmanageable and/or unusable. Again this is particularly true given the relative small size of ensemble.

**Table 2: Three climate projections and their input conditions represent the uncertainty ranges**

<b>Climate projection</b>	<b>Representative Concentration Pathways</b>	<b>Climate sensitivity</b>
Mid scenario	RCP6.0	Mid
Low scenario	RCP4.5	Low
High scenario	RCP8.5	High

## **E.2 Spatial climate change scenario**

27. Annual and monthly climate change impact was assessed spatially over the RCI area. The baseline climatology was obtained from the WorldCLIM database with a spatial resolution of about 1 km (<http://www.worldclim.org>). In generating the climate change scenario for the RCI area, the simulation results from 40 GCMs that were assessed in the IPCC AR5 were used. All 40 models have their monthly simulation results available.

## **E.3 Site specific climate change scenario**

28. Besides the spatial monthly change projections, site specific climate change scenarios with a more detailed temporal scale are usually required for impact assessment. The site specific climate change scenario was constructed by adjusting the station observed daily data using the normalised GCM pattern value from the GCM grid where the climate station is located. In this report, the baseline data was constructed from the observation data of the period 1986-2015. For site specific extreme value analysis, an intensity value such as maximum daily rainfall of 20 year annual recurrence interval (ARI) was chosen and then its normalised pattern value from the GCM grid where the site is located was selected. The value is then applied to the same rainfall intensity that was derived from the observed historical data to generate the future change scenarios.

29. In the following two sections, the method described above is adopted to generate the change projections for climate variables that may become hazardous to the proposed RCI subprojects. Rainfall and/or temperature data were collected for four stations around the RCI area. Table 3 lists the information for the stations. The locations of the stations can be found in Figure 1.

**Table 3: Information of the meteorological stations**

<b>Station Name</b>	<b>Longitude (°E)</b>	<b>Latitude (°N)</b>	<b>Altitude (m)</b>	<b>Observation Period</b>
Nanning	108.22	22.63	121.6	1951-2015
Qinzhou	108.62	21.95	4.5	1952-2015
Longzhou	106.85	22.33	128.8	1953-2015
Baise	106.60	23.90	173.5	1951-2015



## **F. Climate observations and change projections**

### **F.1 Observational temperature data and their future projections**

30. The temperature related climate variables that might have high risk potential is heatwave hazard and impacts on human health. The RCI program area is in the south of the Tropic of Cancer, so have hot and humid summers. Figure 2 illustrates the spatial annual mean temperature of the baseline and 2050 and 2100 projections under a mid-climate change scenario. Except the high altitude of the mountainous area surrounding Baise, the program area generally has an annual average mean temperature above 21°C (Baseline of Figure 3). The annual mean temperature is likely to increase between 1.1°C to 1.3°C by 2050 and 2.2°C to 2.5°C by 2100, according to the median scenario projection. The northwest area has a slightly higher warming rate than the southern area.

31. Figure 3 shows the observed annual mean temperature of the 4 meteorological stations. As shown in Figure 3, a warming trend has already been observed for all stations. It is relatively strong for the northwest inland station of Baise, which has an average increase rate of 2°C/100 years, but it is less obvious for coastal station of Qinzhou.

32. The warming rate due to climate change on temperature is similar for each month for the mean temperatures. Figure 4 shows the monthly observed monthly normal mean temperature and its 2050, 2100 projections and uncertainty ranges for the 4 stations. The climate change impact on the maximum temperature is similar for the mean. The influence of heatwave on human health is closely related to the intensity of heatwave, which is defined as the duration of continuous days of maximum temperature over a given threshold. The heatwave change scenarios are discussed in Section G.

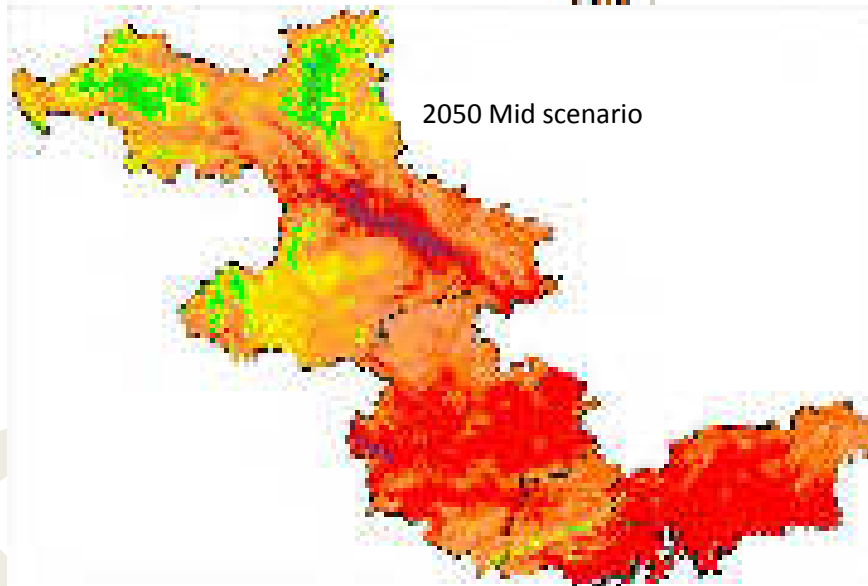
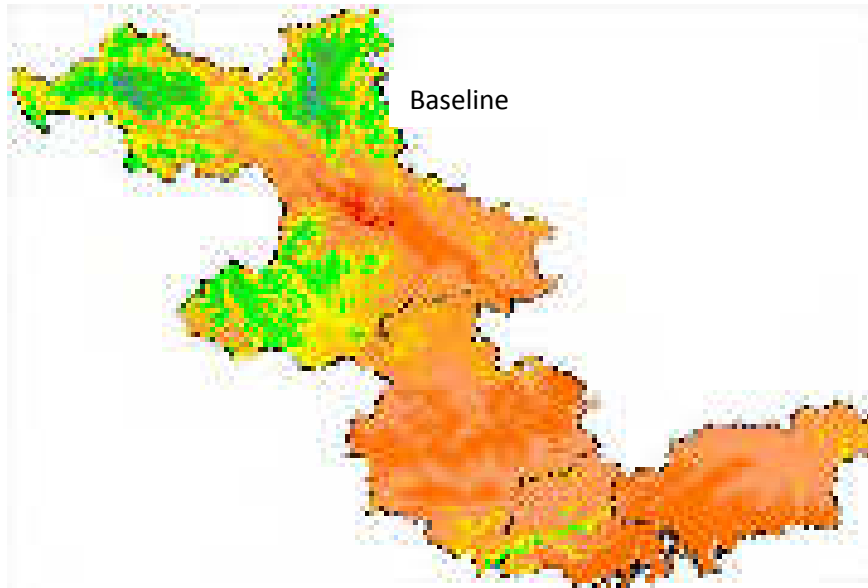
### **F.2 Observational rainfall data and their future projections**

#### ***Baseline:***

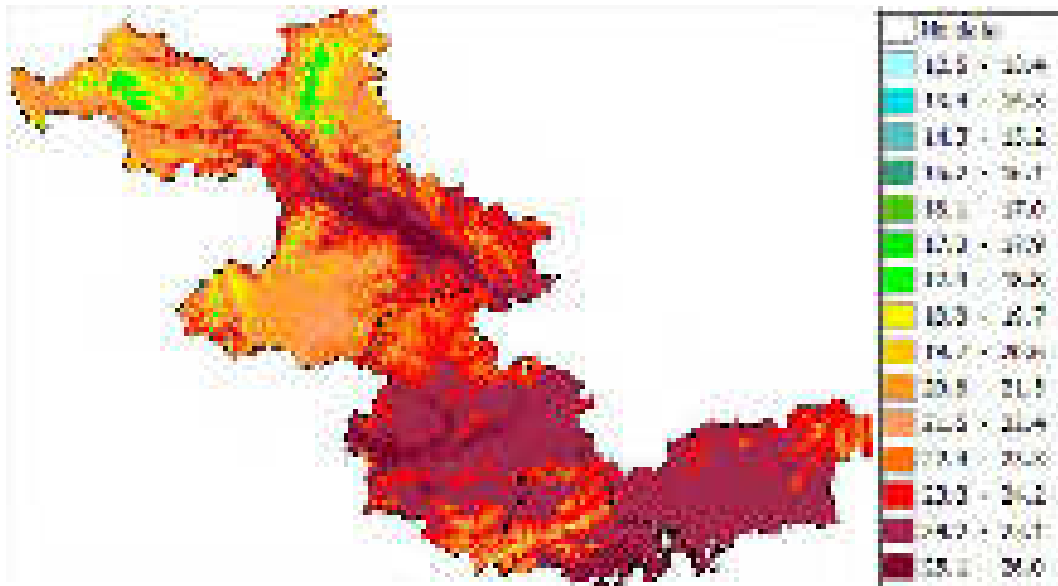
33. Figure 5 shows the spatial rainfall distribution for the rainy season (June-October). There is a high spatial variation in rainfall over the RCI program area. The northwest mountainous area has the lowest annual average rainfall between 1000 to 1100 mm, which is less than half received by the southeast coastal area that is over 2400 mm (baseline shown in Figure 5). The coastal area of Fangchenggang receives heavy rainfall, because it is under the combined effects of a maritime climate and south Asian monsoon.

34. Figure 6 shows the observed annual rainfall for the 4 stations. The annual average rainfall is clearly over 2000 mm for the coastal city of Qinzhou, but it is merely above 1000 mm for the northwest inland city of Baise. The Coefficient of Variation (CV) is between 0.17 and 0.20, which indicates that the inter-annual variation of rainfall is not very strong (Table 4). Unlike the temperature, there is no consistent change trend in annual rainfall from the observations. While Qinzhou demonstrates an upper trend, the Longzhou rainfall is slightly downward, and Nanning and Baise do not show a clear trend.

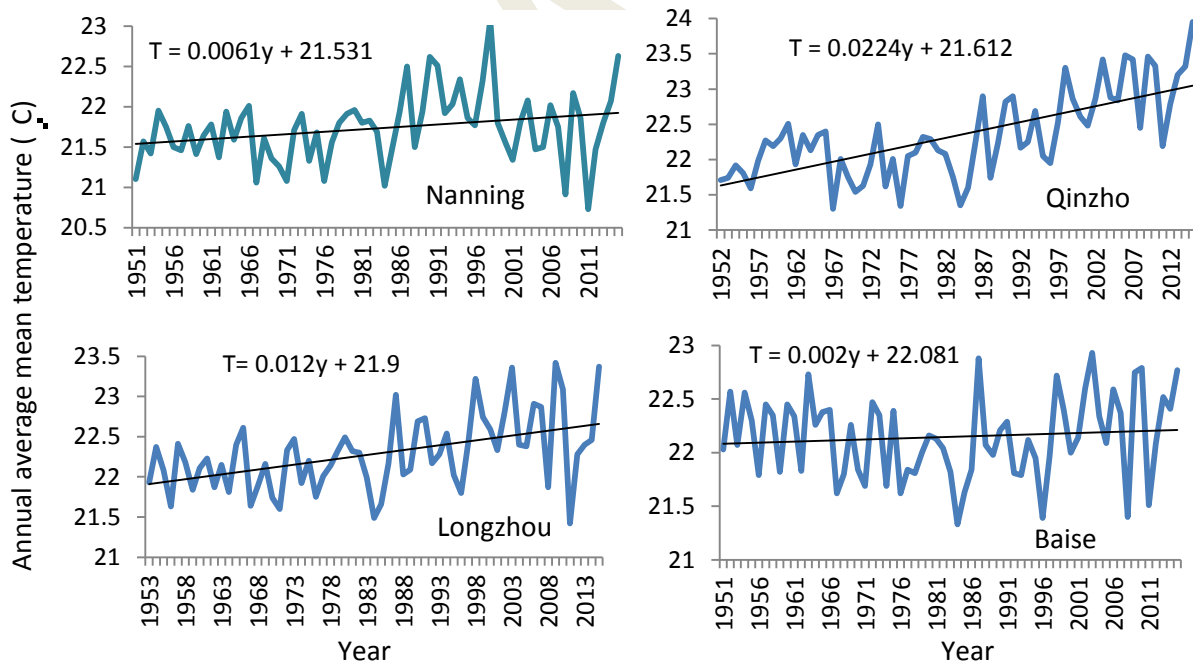
35. In contrast to the inter-annual variation, the rainfall shows a very high seasonal variation. Figure 7 shows the observed monthly normal rainfall and its 2050, 2100 projections for the 4 stations. The average rainfall for four months from June to September accounts for more than half of the annual total. On average June is the wettest month for three stations except Qinzhou where July has the most rainfall. December is the driest month for all stations.



2100 Mid scenario

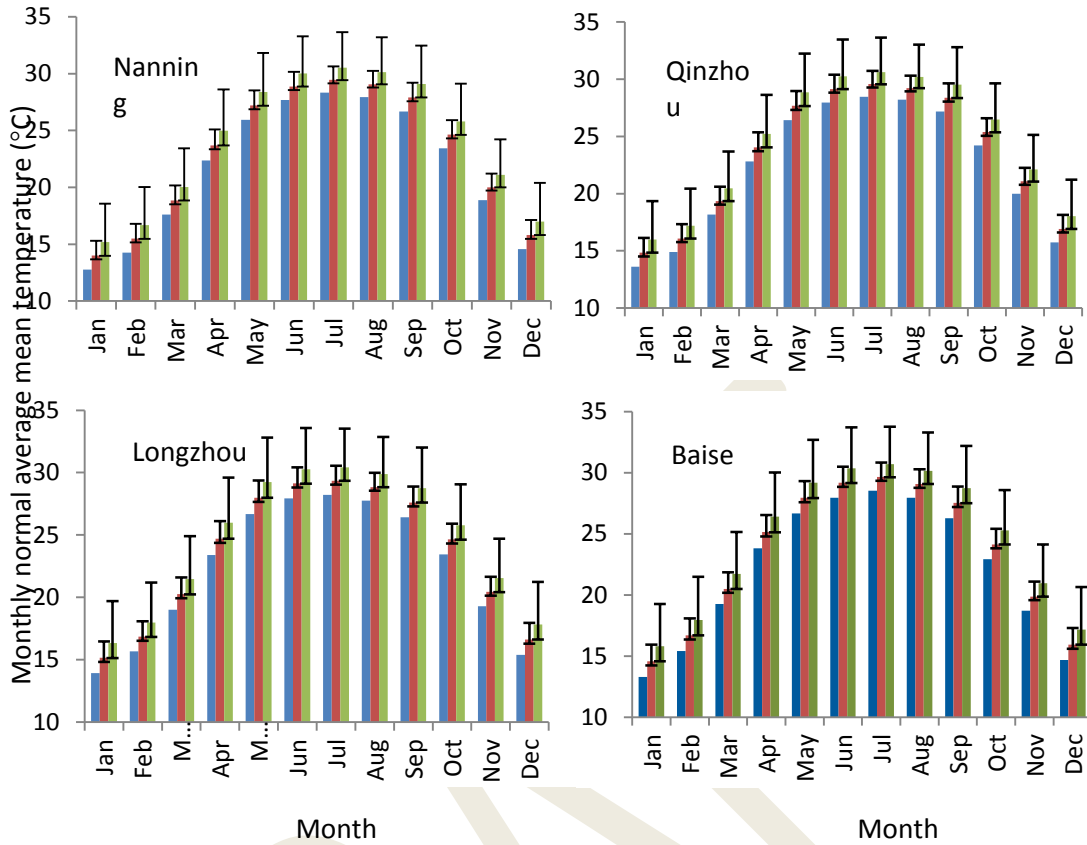


**Figure 2: Baseline annual average mean temperature (°C) and 2050, 2100 projections based on the mid scenario projection**

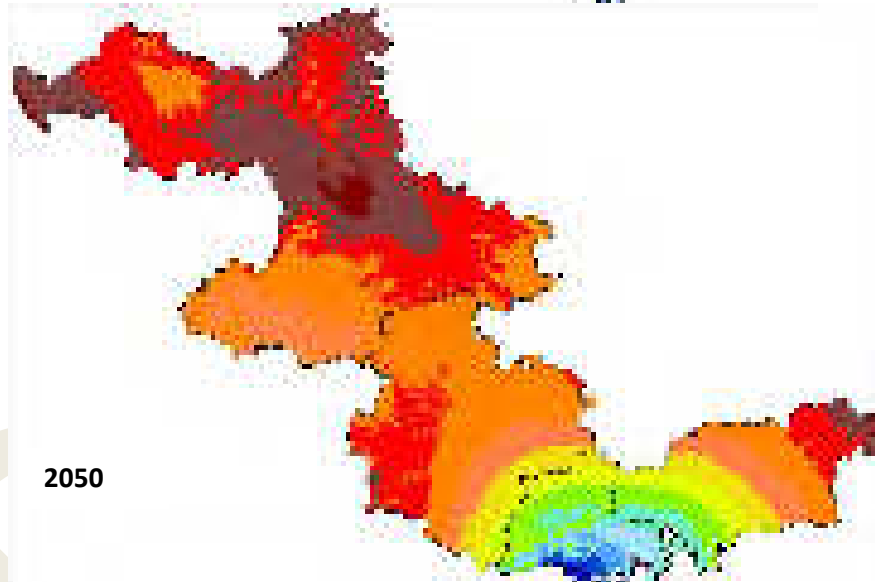
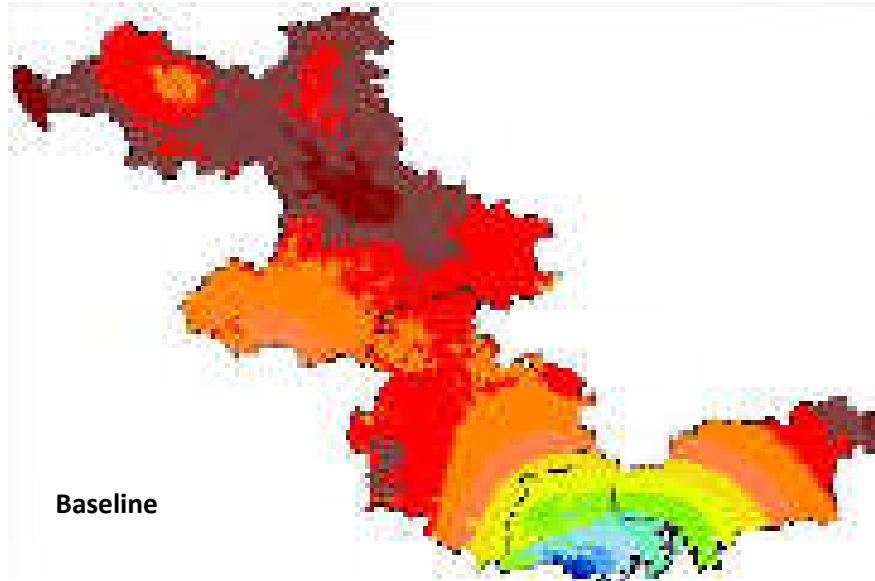


**Figure 3: Observed annual average mean temperature (°C)**





**Figure 4: Baseline monthly normal mean temperature (°C), 2050 and 2100 projections. The bar indicates the uncertainty range of the climate change projection as defined in Table 2**



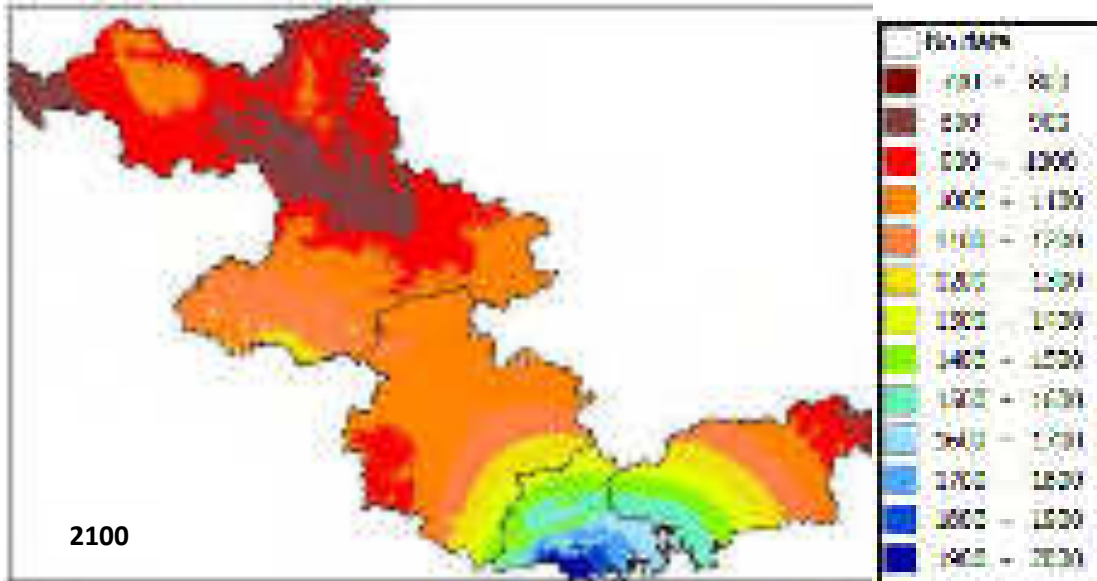
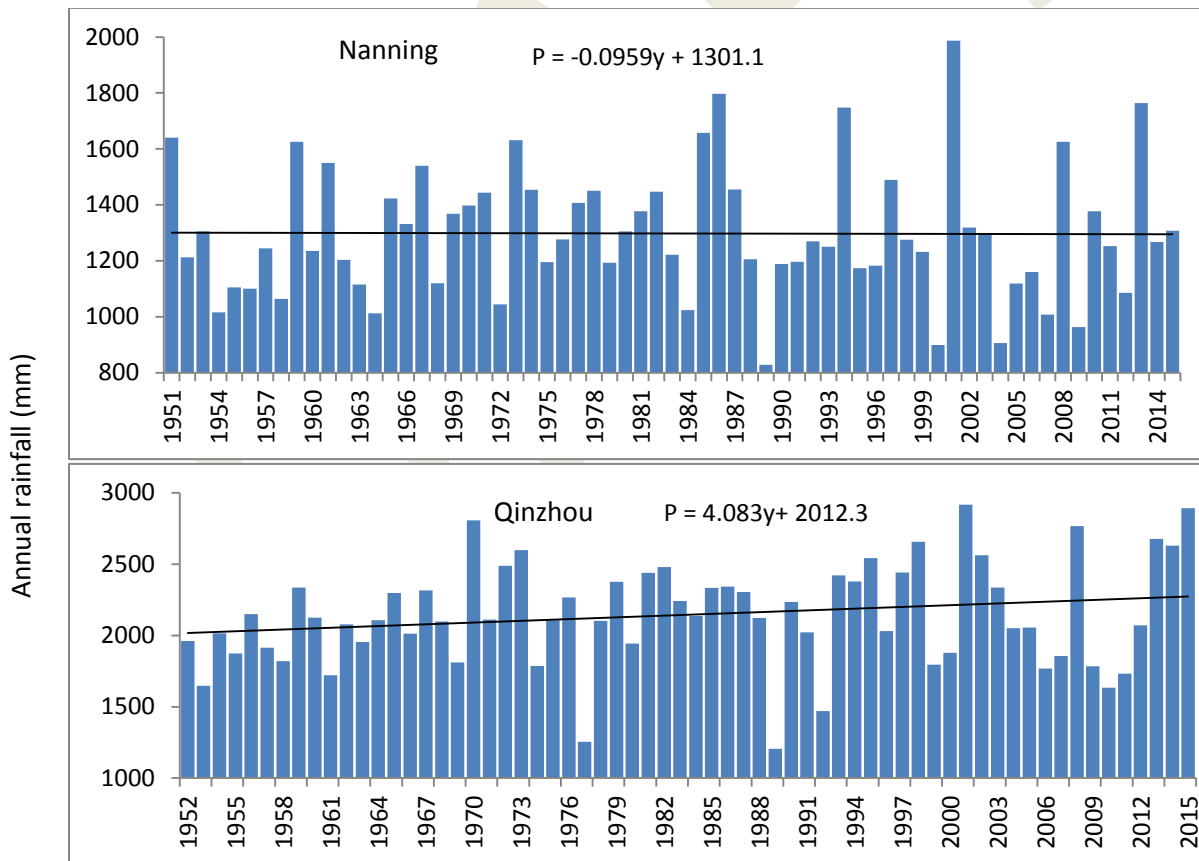


Figure 5: Baseline rainfall (mm) of the rainy season (Jun-Oct) and 2050, 2100 projections based on the mid scenario projection



Annual rainfall (mm)

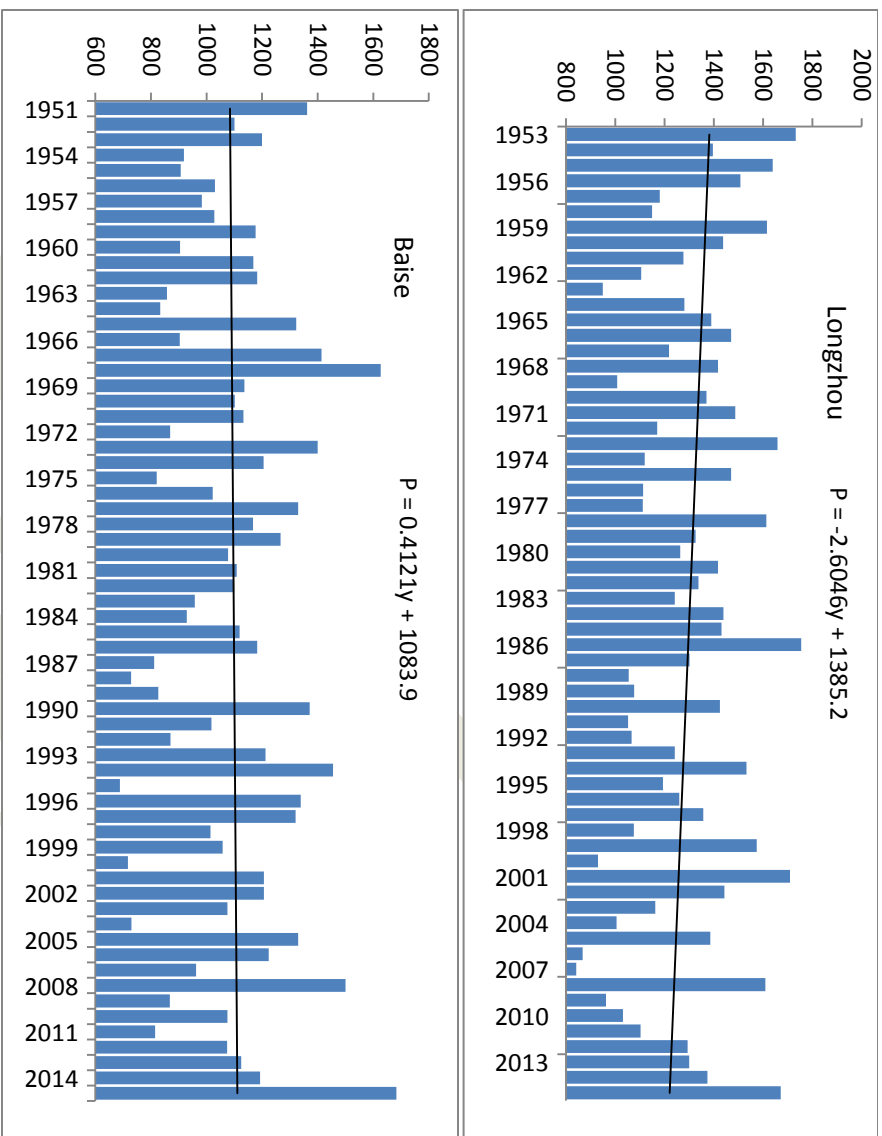
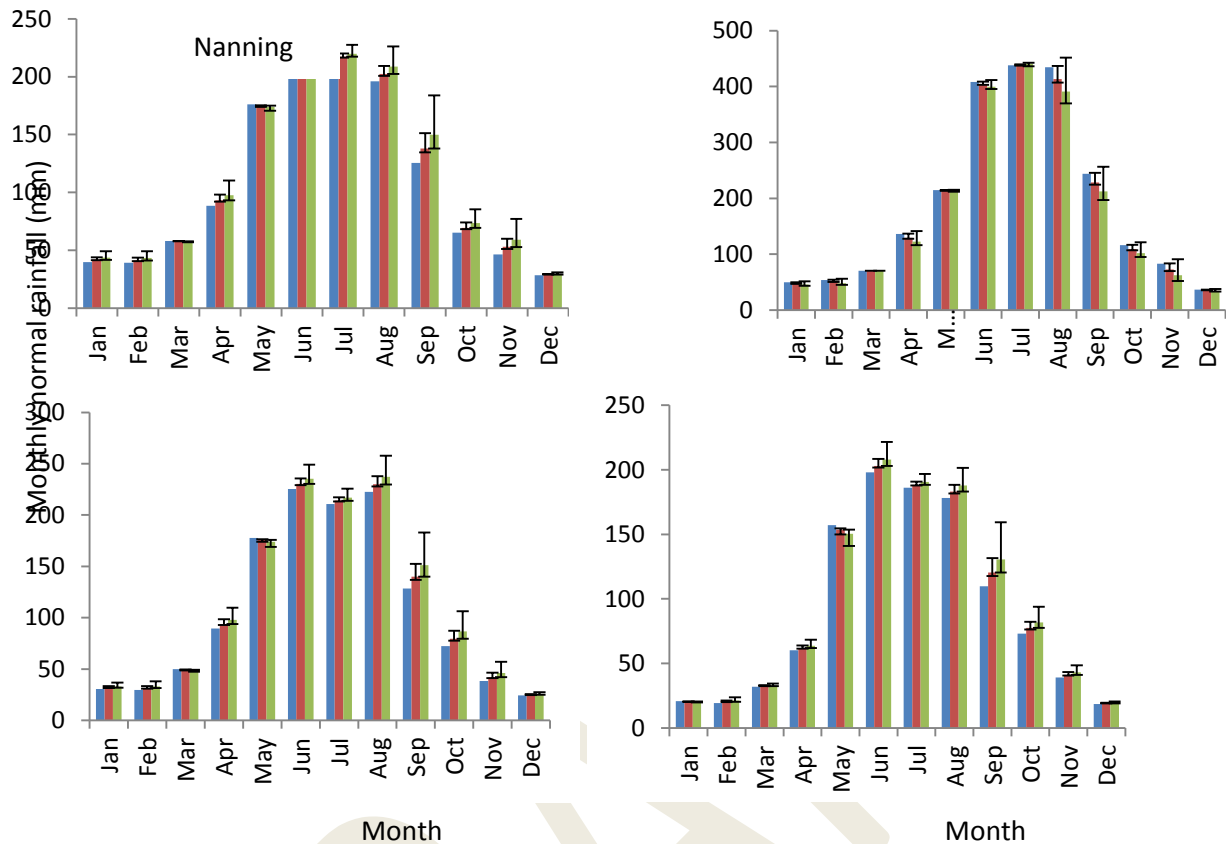


Figure 6: Observed annual rainfall of the 4 stations (mm)



**Figure 7: Monthly normal rainfall and climate change projection. The bar indicates the uncertainty range of the climate change projections as defined in Table 2**

**Table 4: General rainfall information for the four stations**

Station name	Annual average precipitation (mm)	CV	Maximum annual precipitation (mm)	Minimum annual precipitation (mm)
Nanning	1297.95	0.18	1987.50	827.90
Qinzhou	2145.04	0.17	2917.10	1204.60
Longzhou	1295.87	0.18	1755.00	841.80
Baise	1097.50	0.20	1683.30	688.80

### **Future projection**

36. Applying the method described in the previous section to the RCI area, the median scenario change projection indicates the annual rainfall change in the area will also likely be noticeable, with an average increase across the area of 2.5% in the northwest to 3.5% in the southeast by 2050 and 4.5 to 7.0% by 2100 across the area. The climate change projection indicates that the spatial variation of rainfall may become even larger in the future (2050 and 2100 projection in Figure 5), as the current wettest area likely receives even more rainfall than relative drier areas.



37. At a site specific scale, the projected rainfall increase is clear for the rainy season, but much less for the dry season. The dry period of January to March of Qinzhou even shows a slight decrease trend (Figure 7). Such a scenario projection implies an increased storm and flood risk for the area, particularly for the coastal area.

### **Extreme rainfall and its projection**

38. According to the extreme value theorem, the generalized extreme value (GEV) distribution, which combines type I, II and III extreme value distribution, is often used as an approximation to model the normalized maxima (minima) of a long (finite) sequence of independent and identically distributed random variables such as annual daily maximum rainfall. In this study the GEV distribution was applied to the daily observation to investigate extreme rainfall and their future changes. A detailed method description and analysis process can be found in Ye and Li (2011). The annual maximum daily rainfall and its future projection were investigated in detail because the sub-daily rainfall data was not available. Figures 8 and 9 illustrate the GEV distribution of the annual maximum daily rainfall of Qinzhou and Longzhou and their 2050 and 2100 future projections. The right-shifting of the projected GEV distribution indicates an increment in daily rainfall intensity or frequency. Table 5 lists the assessment of climate change impact on the extreme daily rainfall for the 2 stations. According to Table 5, the baseline 5 year ARI annual maximum daily rainfall of Qinzhou is 229.95 mm, which is derived from historical record. The climate change alters the climate regime, and the same ARI event will likely have 242.42 and 254.34 mm by 2050 and 2100 respectively, following the mid scenario projection..

**Table 5: The GEV results of annual maximum daily rainfall and its future projections**

Station Name	ARI (years)	Baseline	2050 scenario			2100 scenario		
			Low	Mid	High	Low	Mid	High
<b>Annual maximum daily rainfall projection (mm)</b>								
Qinzhou	2	175.63	184.10	187.3	198.67	187.02	197.55	226.73
	5	229.95	239.06	242.42	255.64	242.31	254.34	288.57
	10	262.46	273.22	277.20	292.96	277.07	291.40	332.44
	20	291.28	304.41	309.26	328.46	309.10	326.56	376.85
Longzhou	2	92.46	98.07	100.10	107.94	100.03	107.17	127.13
	5	118.74	124.39	126.48	134.69	126.40	133.88	155.21
	10	135.98	142.27	144.60	153.80	144.52	152.89	176.85
	20	152.40	159.78	162.50	173.26	162.41	172.19	200.25
<b>Change in Annual maximum daily rainfall projection (%)</b>								
Qinzhou	2	-	4.83	6.55	13.12	6.49	12.49	29.10
	5	-	3.96	5.42	11.17	5.38	10.61	25.49
	10	-	4.10	5.62	11.62	5.57	11.03	26.67
	20	-	4.51	6.18	12.77	6.12	12.12	29.38
	<b>Average change</b>		<b>4.35</b>	<b>5.94</b>	<b>12.17</b>	<b>5.89</b>	<b>11.56</b>	<b>27.66</b>
Longzhou	2	-	6.07	8.26	16.74	8.19	15.92	37.50
	5	-	4.76	6.52	13.43	6.46	12.75	30.71
	10	-	4.63	6.34	13.10	6.28	12.44	30.06
	20	-	4.84	6.62	13.68	6.57	12.99	31.40
	<b>Average change</b>		<b>5.07</b>	<b>6.94</b>	<b>14.24</b>	<b>6.88</b>	<b>13.52</b>	<b>32.42</b>

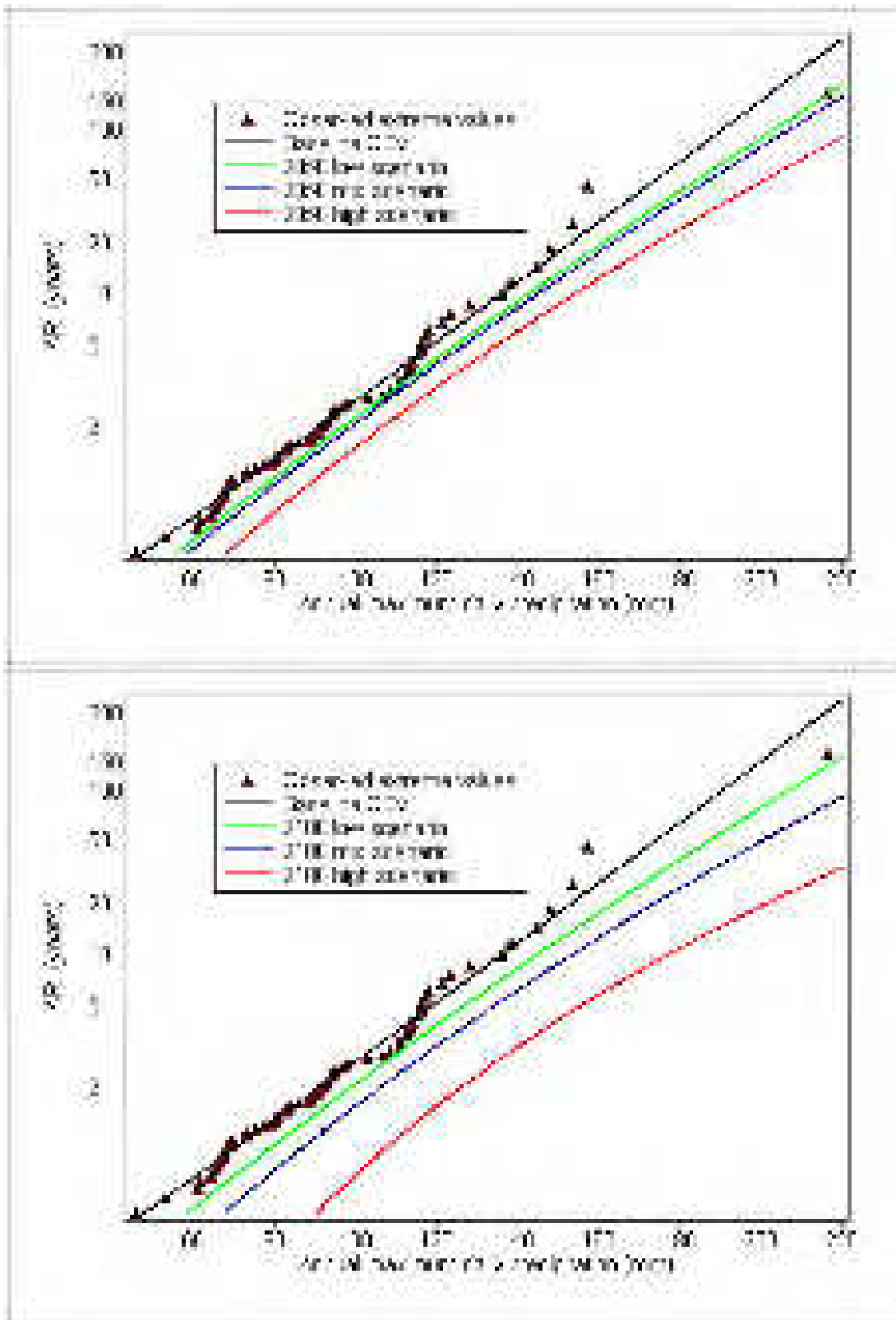
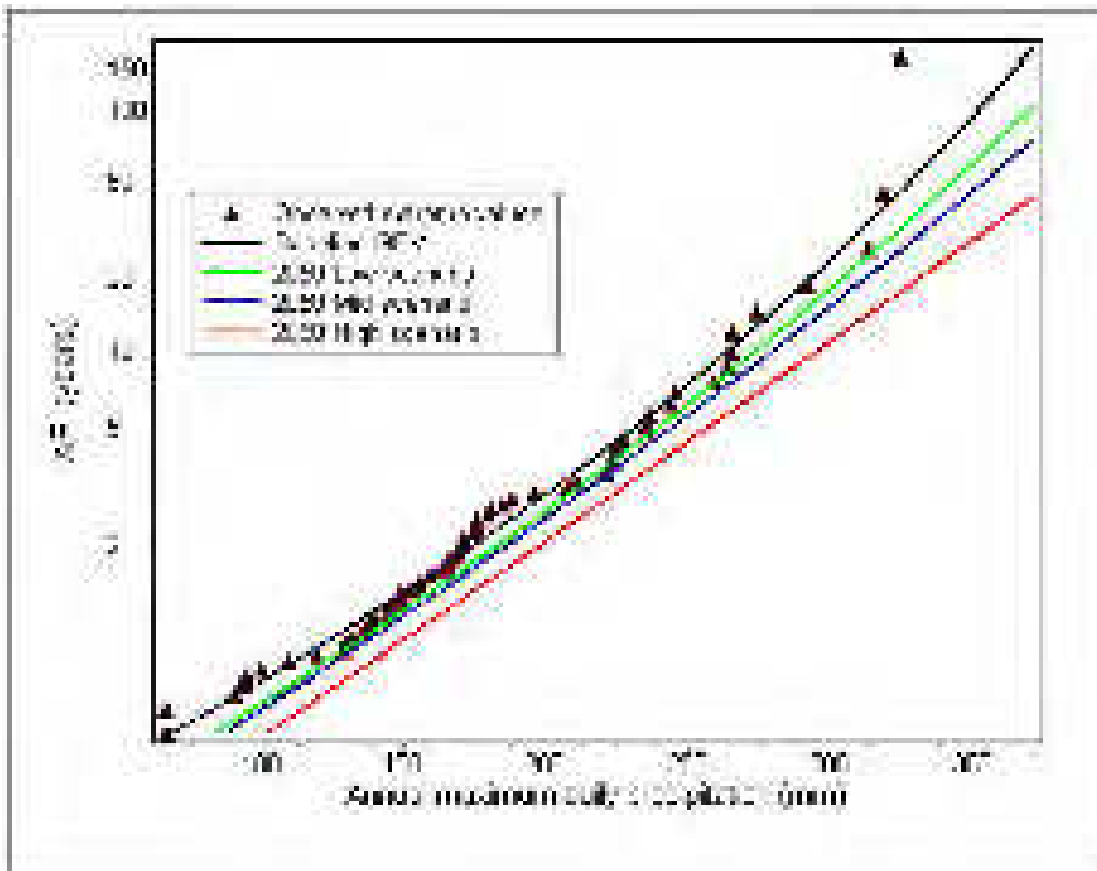


Figure 8: Climate change impact on Qinzhou annual maximum daily rainfall



DRY

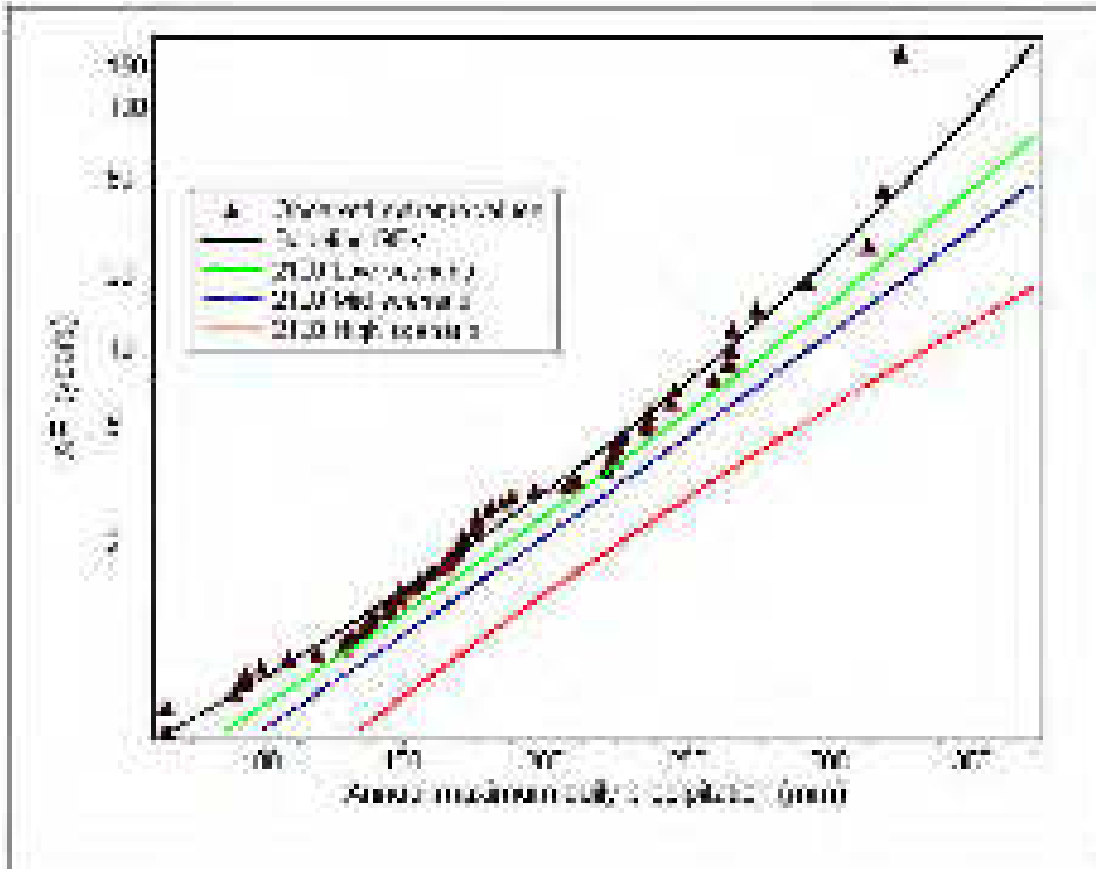


Figure 9: Climate change impact on Longzhou annual maximum daily rainfall

### F.3 Sea level change projections

39. The sea level change scenario was based on a model ensemble of 24 GCMs sea level simulations. The first step was to construct the normalised change pattern, as expressed as sea level change per 1 cm global sea level rise (unit: cm/cm). Again the median value from the model ensemble was used as the 'best guess' of the future sea level change for a given location. Figure 10 demonstrates the normalised pattern based on RCP6.0 for the South China Sea. The sea level rise rate of Beibu Gulf is 1.16 cm/cm that is lower than the coastal area of neighbouring Guangdong Province, perhaps due to the protection from the surrounding land mass, particularly the Hainan Island and Leizhou Peninsula in the south. Table 6 lists the projection and uncertainty range of the sea level change of Beibu Gulf. According to the mid scenario projection, the sea level of Beibu Gulf is likely to increase about 25 cm by 2050 and 64 cm by 2100, which is a substantial rise.

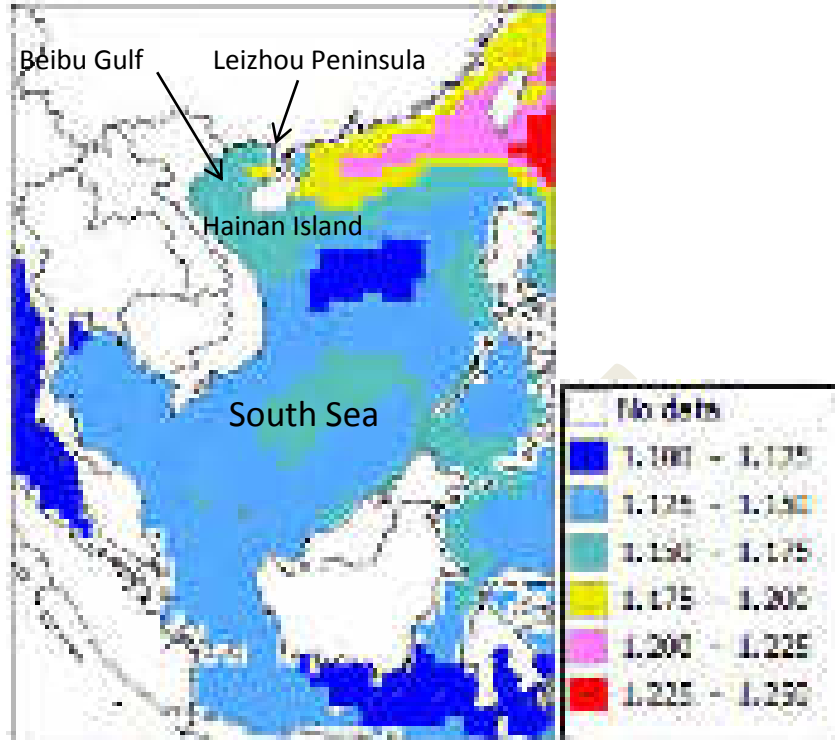


Figure 10: Normalised change pattern of sea level of South China Sea. (expressed as change per 1 cm global rise: cm/cm)

Table 6: Sea level change scenario of Beibu Gulf

	Climate sensitivity					
	Low	Mid	High	Low	Mid	High
	2050			2100		
<b>RCP4.5</b>	19.81	26.79	33.78	41.94	61.74	82.71
<b>RCP6.0</b>	18.64	25.63	32.62	44.27	64.07	85.04
<b>RCP8.5</b>	22.13	29.13	37.28	61.74	86.21	114.17

## G. Climate change impact on Tranche1 subprojects and the implications for subproject design

40. Climate change information needs to be related to the subproject components in order to determine climate risk and how to address vulnerability. Tranche 1 subprojects have been decided with FSRs being completed so it was possible to carry out CRVA for these projects. There are 3 infrastructure subprojects in Tranche 1, namely *Construction of Fangchenggang Training Center for Chinese and Vietnamese Workers and SMEs* (Project 1 hereafter), the *Development of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone* (Project 2 hereafter) and the *Expansion of Pingxiang Border Trade Service Center* (Project 3 hereafter). Project 1 is situated in the Gangkou District of Fengchenggang; Project 2 is located in Kafeng Village of prefectural level city of Pingxiang City of Chongzuo and Project 3 is located in Youyiguan Industrial Park of Xiashi Township of Pingxiang City in Chongzuo. The 3 subprojects are all situated on high ground. Project 1 is constructed on a hilly site with elevation varying from 13.25 to 114.30 metre above sea level (masl); Projects 2 and 3 have elevation all above 200 masl. There are no rivers close to the three projects. Project 1 is about 1 km away from the Beibu Gulf. Therefore they are not under threat from river flooding or sea storm surge.

41. Project 1 proposes construction of training facilities for auto repair, machinery, electronics, trade, and commerce. The infrastructure development includes three training buildings, a trainee/student dormitory, an information building, a canteen and a sports/leisure centre with a stadium. The total subproject area is 165000 m<sup>2</sup>. The construction site is in a hilly area involving a great deal of slope cutting. The altitude varies from 13.25 to 114.30 masl. . The local geological conditions are characterised by serious rocky desertification. The steep slope of the landscape and the strong summer storm, as well as the unique geological conditions demand a careful rain water drainage design in order to prevent flash surface floods and soil/rock erosion. Although design work for most of the buildings has been finished, the rain water drainage design has not yet completed (pers. comm. with DI). According to Chinese national outdoor drainage design standard (GB50014-2006), the drainage capacity design is based on an empirical formula with the coefficients being determined from the historical annual maximum rainfall observations. Normally the maximum rainfall of 10 minute duration and 3 to 5 year ARI are used in drainage system design. However, no sub-daily data was available for this study. Only daily time series rainfall data was obtained for Qinzhou City, which is about 50 km northeast from the subproject site. Thus the climate change impact on the annual maximum daily rainfall of Qinzhou was used to investigate the sufficiency of the subproject drainage capacity design. As shown in Table 5, the mid-climate change scenario projects the intensity of the maximum daily rainfall of 5 year ARI increases 5.4% and 10.6% by 2050 and 2100 respectively at Qinzhou. **It is recommended that an 8% increase of rainfall intensity from the design standard is adopted in the subsequent detailed drainage system design.**

42. Project 2 include construction of a technical exchange center for employment and innovation, a training base, integrated service buildings and a dormitory area for staff. The total subproject area is 33267 m<sup>2</sup>. Project 3 is an expansion of an existing border trade area. It is proposed to develop a declaring house, a warehouse, a comprehensive services building and other ancillary buildings. The subproject takes an area of 110443 m<sup>2</sup> of land, which has the surface already hardened (with concrete). It is in the north of the existing trade area, which has a total area about 40000 m<sup>2</sup>. Projects 2 and 3 use the empirical storm intensity formula of Ningmin County in FSR design. Ningmin is about 18 km east of Project 2 and 35 km northeast of Project 3. The empirical formula can be expressed as:

$$q = \frac{4030 \times (1 + 0.62LgP)}{(t + 12.5)^{0.823}}$$

where,  $q$  is the designed rain water discharge capacity (L/(s·ha));  
 $P$  is the design ARI (years); and  
 $t$  is the rain water accumulation time duration (min).

43. According to national standards, 5 year ARI and 10 minutes of rain water collection duration is recommended in drainage system design, which gives rise to a designed rain water discharge capacity of 445 L/(s·ha).

44. No observed climate data was obtained for the 2 subproject sites. Longzhou is the closest station that has daily historical data available. Longzhou is about 25 km northwest of Project 2 and 35 km north of Project 3. Study was conducted for climate change impact on the annual maximum daily rainfall of Longzhou. As shown in Table 5, Longzhou annual maximum daily rainfall of 5 year ARI increases 6.5% and 12.8% by 2050 and 2100 respectively, as projected by the mid-climate change scenario. **It is recommended that a 10% increase of rainfall intensity from the design standard is adopted in the subsequent detailed drainage system design for the 2 subprojects.**

45. The heatwave hazard is also projected to increase significantly due to climate change. Heatwave is normally defined as a consecutive days of temperature above a given threshold. Human have developed different tolerance to heat from their long term living experience. Regional difference is a key feature in the relationship between heatwave and human. The impact of heatwave on human health should be determined based on effects to local people. Ye et al. (2013) studied the relationship of mortality and daily maximum temperature of the summer season for 753 stations over China, excluding the very cold area. Heatwave was defined as needing to satisfy 2 conditions: 1) the daily maximum temperature is higher than the 97th percentile of the local observed long term daily maximum temperature records; and 2) the duration is equal to or longer than the consecutive 6 days.

46. The baseline and future projection of the heatwave frequency and intensity was derived for the two stations based on such a definition, and the results are listed in Table 7. The frequency of heatwave is still rare in Tranche 1 subproject areas. It only happened once during a 64 year period (from 1952 to 2015) in Qinzhou and 3 times during a 63 year period (from 1953 to 2015). On average it is less than 2 times per 100 years for Qinzhou and 5 times per 100 years for Longzhou. Based on the mid-climate change scenario projection, by 2050 the heatwave frequency is likely to increase by almost 7 times from the baseline for the coastal city of Qinzhou, and 20 times for the inland Longzhou. It will likely become an annual event by 2100 for both cities. The intensity also increases. It changes from 7 days of baseline to 8 days by 2050 and 15 days by 2100 for Qinzhou, and increases from 8 days to 15 days and 17 days by 2050 and 2100 respectively for Longzhou.

**Table 7: Heatwave: baseline and future projection**

Station	Heat wave frequency (times/year)						
	Baseline	2050 scenario			2100 scenario		
		Low	Mid	High	Low	Mid	High
Qinzhou	1	5	9	80	9	66	533
Longzhou	3	13	23	87	23	78	476
	Heat intensity (the longest duration in days)						
Qinzhou	7	8	8	15	8	15	52
Longzhou	8	14	15	17	15	17	50

DRAFT



## H. The adaptation options

47. Given the likely changing climate in the future, managing climate risks will require adoption of effective adaptation actions, in order to minimise future risks. Adaptation measures can alleviate vulnerability and reduce climate change impacts. This section discusses the adaptation options that have been identified based on literature review and from consulting with the staff of the PMO and the DIs:

### H.1 “Hard” options: engineering measures in road system design and construction

48. Sufficient drainage capacity is critical to prevent urban flooding. According to the DIs, the drainage system design followed the general method of adopting an empirical formula from analysis of the historical observed storm event. Clearly the adequacy of the design requires examination given the climate change impact on rainfall. As discussed previously, the storm event of 5 years ARI would produce more rain water in the future. **For Project 1, it is recommended an 8% increase from the current standard to be adopted in the detailed drainage system design.** It is important to have a sufficient drainage capacity for this subproject, given its large elevation variation and soil erosion/rock desertification prone geology. **For the 2 subprojects in Pingxiang, Project 2 and Project 3 a 10% increase from the national standard should be used in the detailed drainage system design, i.e., the drainage system design should be based on 490 L/(s·ha), instead of national standard of 445 L/(s·ha).** The detailed drainage system design has not started for the 3 subprojects. An approximation was provided by DI that 8% to 10% drainage capacity increase would result in an additional cost of 10%. . Table 8 lists the estimation of additional cost of implementing adaptation by adjusting drainage system design.

**Table 8: Estimation of additional construction cost of adjusting drainage system design**

	<b>Original cost CNY (000)</b>	<b>Additional cost CNY (000)</b>	<b>Additional cost to total cost ratio (%)</b>
Project 1	7786	779	3.7
Project 2	1440	144	4.1
Project 3	1100	110	2.1

49. The heavy storm induced surface runoff is a major cause of soil erosion. If the frequency of heavy storm events increases there is also likely to be a higher risk of landslide. Project 1 is located in a hilly location, with substantial slope-land cutting and levelling. Steep slopes exist in many places inside the subproject area. It was understood from consultation with IA and DIs that engineering measures to stabilize the slopes have been designed. Project 3 is also being constructed on steeply sloping land on the north side, which the IA also indicated would be cut to a gentle slope to reduce landslide risk. The construction of slope stabilization is not include in the scope of the RCI program, but given the future increased landslide risk due to the heightened storm intensity, it is recommended that a higher design standard should be adopted for slope stabilisation.

50. Heatwave is still a rare event for the 3 subproject sites but it will very likely become more frequent and long lasting in the future. Potentially, heatwave may become a big health threat for people living/working in the subproject area. Through a comparison study of heatwaves of 1998

and 2003, Tan et al. (2007) conclude that mortality was strongly associated with the duration of the heatwave when it happens. However, the improvements in living conditions, such as increased use of air conditioning, larger living areas, and increased urban green space, along with higher levels of heat awareness and the implementation of a heat warning system, could significantly reduce the heatwave risk. Clearly, air conditioning is the most effective engineering measure against heatwave risk. According to the FSRs, no centralized air conditioning system was designed for the 3 subprojects. Only the staff living space of Project 1 is equipped with separated air conditioning units. The students or trainees may be required to undertake labor intensive activities; furthermore their dormitory is designed for 6 to 8 people per room, which is relatively crowded. Therefore, even though the air conditioning system may not be necessary for the current climate conditions, the future need should be considered and if necessary provisions included in the design, for example, adequate power supply and air conditioning facility space so a system can be installed easily at a future time when it becomes necessary. Building design should incorporate natural ventilation options and could specify materials for roofs and building envelope that reflect solar radiation rather than absorb it. Covered walkways that provide cover from rain and sun could also be considered. Through discussion with IA and DI, it was agreed that the above air conditioning option will be considered in detailed design, but the system will not be installed at this stage.

## **H.2 “Soft” measures: ecological solutions, management options**

51. Resilience can also be strengthened through non-engineering measures. Good vegetation cover has proven to be effective in preventing soil erosion and landslide hazard. Guangxi has had serious soil erosion since 2000. During the 11 years of 2000 to 2011, the soil erosion area has trebled from 10690.50 km<sup>2</sup> to 50536.78 km<sup>2</sup> (Liang, 2014). Unsustainable agricultural practice and unprecedented infrastructure development have contributed to soil erosion problems, as a result of loss of vegetation cover and lack of management. Human induced soil erosion is still a serious issue in Guangxi (Liang, 2014). Strict soil and water erosion control and management measures should be implemented during the Tranche 1 subproject construction. Ecological restoration by planting native vegetation to create more green space helps stop soil erosion and should be implemented as much as possible in landscape planning and design. Soil and water resource protection through management and ecological restoration has fundamental importance in geological risk reduction such as landslide, and is an effective adaptation option to strengthen the project resilience to climate change impacts.

52. More green space created by good vegetation cover is also an effective option to reduce the heatwave risk to human health, as found by Tan et al (2007). Heatwave risk can also be managed through awareness raising of staff, students and trainees to enable preparedness in the event of a heatwave.

## I. Conclusion

53. The future changing climate will have important implications for Guangxi RCI program. The RCI program area has already observed a warming trend and the temperature will likely continuously increase due to climate change impacts. According to the mid climate change scenario, the annual mean temperature was projected to increase about 1.2°C and 2.3°C by 2050 and 2100, respectively. Similar impacts are also expected for the maximum temperature, which is closely related to heatwave hazard. Climate change will also impact on future rainfall in the program area. For the northwest program area, the annual average rainfall was projected to increase about 2.0% and 4.0% by 2050 and 2100 respectively; and for the southeast, it is 3.8% and 7.4% by 2050 and 2100 respectively. Heavy storm events will likely be even more frequent and intense. For the coastal city of Qinzhou, the storm water amount is projected under a mid-climate change scenario to increase almost 6% and 12% by 2050 and 2100, respectively. The impact effects are more pronounced for the inland city of Longzhou, which is 6.94% and 13.52%, by 2050 and 2100, respectively. The increased storm volume indicates an exacerbated risk of surface flood and landslide hazards. Finally, the mid sea level change scenario projects that the average sea level of Beibu Gulf increases between 25 cm and 64 cm, by 2050 and 2100, respectively.

54. Several 'hard' adaptation options were identified in order to alleviate the climate change impacts. For Project 1, it is recommended that an 8% increase from the current standard is adopted in the detailed drainage system design. For the 2 subprojects in Pingxiang, a 10 % increase from the national standard should be used in the detailed drainage system design. For slope land stabilization engineering measures such as retaining walls and soft measures such as landscape planting are recommended to minimise risk of landslide damage. Heatwave is still a rare event currently, but has the potential to become a major climate hazard in the future. Air conditioning is the most effective engineering measure against the heatwave risk. It is recommended to have the buildings being heatwave ready through providing sufficient power supply and preparing space for future air-conditioning facilities. Provision of natural ventilation opportunities, use of solar reflective non-absorbent material in roof and building envelope specifications and provision of covered walkways should also be considered.

55. 'Soft' adaptation options have also been proven to be effective in reducing impact risk. Landslide risk is closely related with soil erosion. It has been found that human induced soil erosion has become a serious issue in the program area. In Tranche 1 subproject construction, strict soil erosion prevention measures should be implemented. Ecological restoration by planting native vegetation to create more green space helps stop soil erosion; and it also helps reducing heatwave risks. Awareness raising about the knowledge of heatwave, its risk to human health and ways to manage risks should be considered for the future during high heatwave risk periods.

56. This study was constrained by a number of limitations and could be improved if more supporting data was accessible. The following are the lists of some of the major limitations:

- The drainage capacity assessment was conducted on the basis of available data. Because storm drainage system design commonly makes use of sub-daily rainfall data, it would be ideal that the assessment could be conducted based on data that has the same temporal scale.
- The assessment is based on data close to the subproject sites, because climate data was not available for the subproject sites.

- The adaptation options discussed were presented as initial recommendations. No economic data was available to investigate the cost-benefit of implementing such adaptation options. However, we recommend selection of appropriate adaptations and/or their combination to be considered in subproject detailed design wherever feasible.

DRAFT

## J. Reference

- ADB (2010). Sustainable Transport Initiative: Operational Plan. (<http://www.adb.org/documents/sustainable-transport-initiative-operational-plan>; website accessed at June 2013)
- ADB (2012). Proceedings of ADB Sustainable Inland Waterway Transport International Workshop, 11-12 Sept. 2012, Chongqing, PR China.
- ADB (2013). Sustainable Transport for All. (<http://www.adb.org/sectors/transport/overview>. Website accessed at June 2013)
- Andrewartha H. G. and Birch L.C. (1973). The History of Insect Ecology. In History of Entomology, ed. R. F. Smith, T. E. Mittler and C. N. Smith, 229-266. Annual Reviews Inc., Palo Alto, CA
- Cokca E. (2001). Use of Class C Fly Ashes for the stabilization of an expensive soil. J. Geoenviron. Eng., 10.1061/(ASCE)1090-0241(2001)127:7.568-573
- Fangchenggang News, 2016. Summarise of typhoon affected Fangchenggang in recent 5 years. <http://www.v4.cc/News-1012195.html>
- Gasper R., Blohm A. and Ruth M. (2011). Social and economic impacts of climate change on the urban environment. *Current Opinion in Environmental Sustainability*, 3(3), 150-157
- GDRC 2013. The plan of mitigation and adaptation against climate change of Guangxi. <http://max.book118.com/html/2015/0309/13126030.shtm>
- Hallegatte S., Henriot F. and Corfee-Morlot J. (2011): The economics of climate change impacts and policy benefits at city scale: a conceptual framework. *Climatic Change*, 104(1), 51-87
- Huang W. Xie R. Huang R. Li H. Mo L. (2014) The analysis of the June 2014 severe storm and urban flood of Qinzhou. The Chinese Meteorological Annual Conference, S2: Meteorological Hazard, prediction and analysis
- Koetse M.J. and Rietveld P., (2009). The impact of climate change and weather on transport: An overview of empirical findings. *Transportation Research Part D: Transport and Environment*, 14(3), 205-221.
- Li J. (2011) A review survey and analysis of storm hazard of Baise J. *Meteo. Research and Application*. Vol. 32 S1, 31-32
- Love G., Soares A., and Püempel H., (2010). Climate Change, Climate Variability and Transportation. *Procedia Environmental Sciences*, 1(0), 130-145.
- Murphy J.M., Sexton D.M., Barnett D.N., Jones G.S., Webb M.J., Collins M., Stainforth D.A. (2004). Quantification of modelling uncertainties in a large ensemble of climate change simulations. *Nat.*, 430 (7001): 768-772. DOI: 10.1038/nature02771.

Murphy, J.M., Noda A., Raper S.C.B., Watterson I.G., Weaver A.J., and Zhao Z., (2007). Global climate projections. In *Climate Change 2007: The physical science basis. Contribution of working group I to the fourth assessment report of the Intergovernmental Panel on Climate Change* (eds S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Averyt, M. Tignor & H. L. Miller). Cambridge, UK and New York, NY: Cambridge University Press.

Nong B. 1994. *Chronicle of Chongzuo*, Guangxi people's publishing house

Qin W. and Li Y., 2011. Analysis on the Causes of 2010 High Temperature Heat Wave Meteorological Disasters in Guanxi. *J. Metero. Res. Appl.* Vol.32, No.4, 13-16.

Qinzhou Government News, 2015, Summary of the 2014 flood control and drought relief work. <http://www.qzwater.gov.cn/Article.aspx?cid=5&id=1065>

Räisänen, J. (2007). How reliable are climate models? *Tellus*, 59, A(1), S.2-29. DOI: 10.1111/j.1600-0870.2006.00211.x.

Reichler T. and Kim J. (2008). How well do coupled models simulate present day mean climate? *BAMS*, March 2008

Santer, B.D., Wigley T.M.L., Schlesinger M.E., Mitchell J.F.B., (1990). Developing climate scenarios from equilibrium GCM results, MPI Report Number 47, Hamburg

Solomon, S., Qin D., Manning M., Chen Z., Marquis M., Averyt K.B., Tignor M., Miller H.L., (eds.) (2007). *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA. Task Group on Data and Scenario Support

Sorteberg, A. and Kvamsto N.G., (2006). The effect of internal variability on anthropogenic climate projections. *Tellus*, 58A, 565–574. DOI: 10.1111/j.1600-0870.2006.00202.x.

Sterl, A., Severijns C., Van Oldenborgh G.J., Dijkstra H., Hazeleger W., Van den Broeke M., Burgers G., Van den Hurk B., Van Leeuwen P.J., Van Velthoven P., (2007). The ESSENCE project - signal to noise ratio in climate projections. [http://www.knmi.nl/~sterl/Essence/essence\\_1\\_v2.2.pdf](http://www.knmi.nl/~sterl/Essence/essence_1_v2.2.pdf)

Tan C. and Zhu J. (1999), The landslide distribution and risk area classification for the middle and downstream of Lancang River watershed. *J. Geography*, Vol.54: pp84-92. (In Chinese)

Tan J., Zheng Y., Song G., Kalkstein L.S., Kalkstein A.J. and Tang X. 2007, Heat wave impacts on mortality in Shanghai, 1998 and 2003, *Int J Biometeorol* (2007) 51:193–200.

Tan, J, Y Zheng, X Tang and C guo (2010), “The urban heat island and its impact on heat waves and human health in Shanghai”, *Int. J. Biometeorol* Vol 54, pages 75–84.

Wigley, T.M.L., (2003). *MAGICC/SCENGEN 4.1: Technical Manual*. National Center for Atmospheric Research, Boulder, Colorado.

Wilby R.L., J. Troni J., Biot Y., Tedd L., Hewitson B.C., Smith D.M. and Sutton R.T., (2009). A review of climate risk information for adaptation and development planning, *Int. J. Climatol.* 29: 1193–1215

Wuebbles D., Meehl G., Hayhoe K., Karl T.R., Kunkel K., Santer B., Wehner M., Colle B., Fischer E.M., Fu R., Goodman A., Janssen E., Kharin V., Lee H., Li W., Long L.N., Olsen S.C., Pan Z., Seth A., Sheffield J., and Sun L. (2014). CMIP5 CLIMATE MODEL ANALYSES Climate Extremes in the United States, American Meteorological Society, April 2014., p571-583

Ye D, Yiin J. Chen Z. Zheng Y. Wu R. (2013). Spatiotemporal change characteristics of summer heatwave in China in 1961-2010.

Ye W. and Li, Y. (2011). A method of applying daily GCM outputs in assessing climate change impact on multiple day extreme precipitation for Brisbane River Catchment, MODSIM11. In Chan, F., Marinova, D. and Anderssen, R.S. (eds) MODSIM2011, 19th International Congress on Modelling and Simulation. Modelling and Simulation Society of Australia and New Zealand, December 2011, pp. 3678-3683. ISBN: 978-0-9872143-1-7

Yin M., Wang G. and Liu J. ( 2001). GIS Based Risk Assessment of the Debris Flows in the Lower Lancang River Watershed, SCIENTIA GEOGRAPHICA SINICA, Vol. 21 No. 4. Pp334-338

## **Appendix 1: Climate Change Scenario generation**

### ***The uncertainties in climate change scenario generation***

1. The future climate change projection includes uncertainties, particularly at the regional and local level. The major sources of uncertainties come from: 1) the difference of spatial change projections modelled by different GCMs; 2) the uncertainty in future atmospheric GHG concentration; and 3) the uncertainty results from limitations in the scientific understanding of the response of the climate systems to radiative forcing. Different GCM models have different parameterisation due to the unknown or not fully understood mechanism and feedbacks in the climate systems. Consequently, there remain large differences between GCMs in their projections of global-mean temperature change. A thoroughly studied uncertainty by the scientific community is the difference in GCM model parameterisation, or the climate sensitivity. The climate sensitivity is conventionally defined as the equilibrium change in global mean surface temperature following a doubling of the atmospheric (equivalent) CO<sub>2</sub> concentration simulated by a GCM. It has been found that the uncertainty range is between 2.0°C to 4.5°C (Solomon et al., 2007).

2. To reflect the uncertainty of future GHG emission rates, a new process has been used for future global climate change projection since IPCC AR5. In this process, GHG emissions and socioeconomic scenarios are developed in parallel, building on different trajectories of radiative forcing over time to construct pathways (trajectories over time) of radiative forcing levels (or CO<sub>2</sub>-equivalent concentrations) that are both representative of the emissions scenario literature and span a wide space of resulting GHG concentrations that lead to clearly distinguishable climate futures. These radiative forcing trajectories were thus termed “Representative Concentration Pathways” (RCPs). A RCP was simulated in an Integrated Assessment model to provide one internally consistent plausible pathway of GHG emissions and land use change that leads to the specific radiative forcing target. The full set of RCPs spans the complete range of integrated assessment literature on emissions pathways and the radiative forcing targets are distinct enough to result in clearly different climate signals.

3. Thus a combination of different RCPs and climate sensitivities can be used to characterise future scenario that reflect the major uncertainties at the global scale. In this study, three RCPs are used to characterise the possible climate change scenario and uncertainty range, i.e., RCP4.5, RCP6.0 and RCP8.5, which are corresponding to a possible range of radiative forcing values in the year 2100 of 4.5, 6.0, and 8.5 W/m<sup>2</sup>, respectively. RCP6.0 with mid-climate sensitivity represents a middle range future change scenario. Similarly, RCP4.5 with low-climate sensitivity and RCP8.5 with high-climate sensitivity represents the low and high bound of the uncertainty range of future global change scenarios.

4. The General Circulation Model (GCM) is the most reliable tool in generating the future climate change scenarios at large to global scale. The third important uncertainty in climate change scenario generation is the difference between GCM simulations for given regions or locations. At the regional-to-local scale, the uncertainties expend in terms of the spatial patterns of climate changes. Given the current state of scientific understanding and limitations of GCMs in simulating the complex climate system, for any given region in the world, it is still not possible to single out a GCM that outperforms all other GCMs in future climate change projection. Future climate change projection based on the analysis of a large ensemble of GCM outputs is more appropriate than using any individual GCM outputs (Wilby et al. 2009). This is particularly important if such a projection is used for impact assessments; a large ensemble of GCM simulations can provide a reliable specification of the spread of possible regional changes by



including samples covering the widest possible range modelling uncertainties (Murphy et al. 2004, Sortberg and Kvamsto 2006, Murphy et al. 2007, Räisänen 2007). A single GCM projection of future climate made with even the most sophisticated GCM can be of limited use for impact assessment as it lacks the ability to provide information on the range of uncertainties. Within an ensemble approach; provided the members of the ensemble are independent, a larger ensemble size could lead to a more reliable statistical result (Sterl et al. 2007). In this study, the 50 percentile value from the model ensemble sample was used in generating future climate change projections.

### ***The pattern scaling method***

5. The pattern-scaling method (Santer *et al.*, 1990) is based on the theory that firstly, a simple climate model can accurately represent the global responses of a GCM, even when the response is non-linear (Raper et al. 2001), and secondly, a wide range of climatic variables represented by a GCM are a linear function of the global annual mean temperature change represented by the same GCM at different spatial and/or temporal scales (Mitchell, 2003, Whetton et al. 2005). Constructing climate change scenarios using the pattern-scaling method requires the following information:

- a) regional patterns of changes in climate (e.g. for precipitation) by specified timeframe (e.g. month) from GCM results, which are normalized to give a spatial pattern of change per degree of global-mean temperature change;
- b) time-dependent projections of global-mean temperature change projected by a selected RCP under a selected “climate sensitivities”
- c) baseline climate variables derived from observational records.

6. In generating a “time-slice” scenario for a future year, the normalised pattern (a) is scaled by a time dependent projection of global-mean temperature change (b). The resultant scenario of climate change is then used to perturb the underlying observed spatial climatology (c) to give a “new” climate for the year in question. In this way, the three key uncertainties – the GCM spatial patterns of change, the future GHG emission rates and the climate sensitivity – can be treated independently and combined flexibly and quickly to produce future climate scenarios (as per Wigley, 2003).

7. The advantage of pattern-scaling method is that the three key uncertainties – the future radiative forcing, the climate sensitivity and the GCM projected change – can be treated independently and combined flexibly and quickly to produce future climate scenarios (Wigley, 2003), while the key assumption underline the pattern-scaling method is that, at first the RCPs can accurately represent the global responses of a GCM even when the response is non-linear (Raper et al, 2001); and secondly for a GCM, the change of its climatic variables are a linear function of its global annual mean temperature change at different spatial and/or temporal scales. The GCM models of the couple model intercomparison project phase 5 (CMIP5) results, which was the data supporting the IPCC AR5, were included in in the model ensemble (see Appendix 2 for the GCM included). All 40 GCMs with monthly data outputs were used in spatial GCM scenario generation. The 20 GCMs that has daily GCM outputs were used in extreme rainfall value scenario construction. As pointed by Reichler and Kim (2008), the average of models’ simulation of changes for a climate variable is normally used to capture the middle conditions, as that the average often agrees better with observed climate than any individual model estimates. However, it was found that, though all GCMs has reasonable agreement in climate simulation at global or large regional scale, the difference of GCMs results could be significantly large at local or small regional scale indicating a huge uncertainty at such spatial

scales. Furthermore, such uncertainty is not consistent; hence it is difficult to identify and eliminate certain GCMs from model ensemble. The one or two 'outlier' GCM results could generate very biased projection for the average value of the ensemble. In this study, the median of the model ensemble, instead of the average, was used in order to provide a "best estimate" scenario of future change. It is worthwhile to note that we only use the median value in this study, mainly due to the relative small ensemble size. Ideally top and bottom percentiles should also be used to determine the high and low uncertainty range bounds, but for practical purposes of guidance for policy and action this often tends to expand the scenarios to the point of being unmanageable and/or unusable. Again this is particularly true given the relative small size of ensemble that is 40 monthly GCMs and 20 daily GCMs.

8. The pattern scaling method is also extended to analyse the climate change impact on climate variability, such as the extreme precipitation event. A general extreme value (GEV) function was applied to the daily precipitation data from historical observations and GCM outputs to derive precipitation intensity values. Similar to a normalised pattern for monthly precipitation, normalised patterns of a series of precipitation intensities, such as 20 year ARI maximum daily precipitation, are calculated for a GCM following the steps discussed previously. In generating the normalised patterns, the GCM simulated period of 1975 to 2005 was used as GCM baseline.

9. Out of the 40 GCMs 22 have their daily simulation outputs publically available (see Appendix 2). For the GCM with available daily data, a linear regression method was used to process them in order to derive the normalised pattern for the precipitation intensity series. A more detail discussion of the extreme precipitation change scenario generation can be found from Ye and Li (2011).

**Appendix 2: IPCC AR5 GCMs used in this scenario generation and their horizontal and vertical resolutions. Models with daily data available are used for extreme rainfall event scenario generation, with sea level are used for sea level change scenario generation**

<b>Model label</b>	<b>Resolution (longitude°× latitude°)</b>	<b>Daily</b>	<b>Sea level</b>	<b>Institution</b>
ACCESS1.0	1.875×1.25	No	No	Commonwealth Scientific and Industrial Research Organisation/Bureau of Meteorology (CSIRO-BOM) Australia
ACCESS1.3	1.875×1.25	Yes	No	Commonwealth Scientific and Industrial Research Organisation/Bureau of Meteorology (CSIRO-BOM) Australia
BCC-CSM1.1	2.8125×2.8125	No	Yes	Beijing Climate Center (BCC) China
BCC-CSM1.1(m)	2.8125×2.8125	No	Yes	Beijing Climate Center (BCC) China
BNU-ESM	2.8125×2.8125	No		Beijing Normal University (BNU) China
CanESM2	2.8125×2.8125	Yes	Yes	Canadian Centre for Climate Modelling and Analysis (CCCma) Canada
CCSM4	1.25×0.9375	Yes	Yes	National Center for Atmospheric Research (NCAR) USA
CESM1(BGC)	1.25×0.9375	Yes	No	National Center for Atmospheric Research (NCAR) USA
CESM1(CAM5)	1.25×0.9375	No	No	National Center for Atmospheric Research (NCAR) USA
CMCC-CM	0.75×0.75	Yes	Yes	Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC) Italy
CMCC-CMS	1.875×1.875	Yes	Yes	Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC) Italy
CNRM-CM5	1.4×1.4	Yes	Yes	Centre National de Recherches Météorologiques (CNRM-CERFACS) France
CSIRO-Mk3.6.0	1.875×1.875	Yes	Yes	Commonwealth Scientific and Industrial Research Organisation (CSIRO) Australia
EC-EARTH	1.125×1.125	No	No	EC-EARTH consortium published at Irish Centre for High-End Computing (ICHEC) Netherlands/Ireland
FGOALS-g2	2.81×1.66	No	No	Institute of Atmospheric Physics, Chinese Academy of Sciences(LSAG-CESS) China
FGOALS-s2	2.81×1.66	No	No	Institute of Atmospheric Physics, Chinese Academy of Sciences(LSAG-IAP) China
GFDL-CM3	2.5 × 2.0	No	Yes	Geophysical Fluid Dynamics Laboratory (GFDL) USA
GFDL-ESM2G	2.5×2.0	Yes	Yes	Geophysical Fluid Dynamics Laboratory (GFDL) USA
GFDL-ESM2M	2.5×2.0	Yes	Yes	Geophysical Fluid Dynamics Laboratory (GFDL)

				USA
GISS-E2-H	2.5x2xL40	No	Yes	NASA Goddard Institute for Space Studies (NASA-GISS) USA
GISS-E2-H-CC	2.5x2xL40	No	No	NASA Goddard Institute for Space Studies (NASA-GISS) USA
GISS-E2-R	2.5x2xL40	No	Yes	NASA Goddard Institute for Space Studies (NASA-GISS) USA
GISS-E2-R-CC	2.5x2xL40	No	Yes	NASA Goddard Institute for Space Studies (NASA-GISS) USA
HadCM3	3.75x2.5	No	No	Met Office Hadley Centre (MOHC) UK
HadGEM2-AO	1.875 × 1.2413	No	No	National Institute of Meteorological Research, Korea Meteorological Administration (NIMR-KMA) South Korea
HadGEM2-CC	1.875 × 1.2413	No	Yes	Met Office Hadley Centre (MOHC) UK
HadGEM2-AO	1.875 × 1.2413	No	No	National Institute of Meteorological Research, Korea Meteorological Administration (NIMR-KMA) South Korea
HadGEM2-CC	1.875 × 1.2413	No	No	Met Office Hadley Centre (MOHC) UK
HadGEM2-ES	1.875 × 1.2413	Yes	Yes	Met Office Hadley Centre (MOHC) UK
INM-CM4	2x1.5	Yes	Yes	Russian Academy of Sciences, Institute of Numerical Mathematics (INM) Russia
IPSL-CM5A-LR	3.75x1.875	Yes	No	Institut Pierre Simon Laplace (IPSL) France
IPSL-CM5A-MR	2.5x1.25874	Yes	No	Institut Pierre Simon Laplace (IPSL) France
IPSL-CM5B-LR	3.75x1.875	Yes	No	Institut Pierre Simon Laplace (IPSL) France
MIROC-ESM	2.8125x2.8125	Yes	Yes	Atmosphere and Ocean Research Institute (The University of Tokyo), National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology (MIROC) Japan
MIROC-ESM-CHEM	2.8125x2.8125	Yes	Yes	Atmosphere and Ocean Research Institute (The University of Tokyo), National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology (MIROC) Japan
MIROC4h	0.5625x0.5625	No	No	Atmosphere and Ocean Research Institute (The University of Tokyo), National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology (MIROC) Japan
MIROC5	1.40625 × 1.40625	Yes	Yes	Atmosphere and Ocean Research Institute (The University of Tokyo), National Institute for Environmental Studies, and Japan Agency for Marine-Earth Science and Technology (MIROC) Japan

MPI-ESM-LR	1.875x1.875	Yes	Yes	Max Planck Institute for Meteorology (MPI-M) Germany
MPI-ESM-MR	1.875 × 1.875	Yes	Yes	Max Planck Institute for Meteorology (MPI-M) Germany
MRI-CGCM3	1.125x1.125	Yes	Yes	Meteorological Research Institute (MRI) Japan
NorESM1-M	2.5x1.875	Yes	Yes	Bjerknes Centre for Climate Research, Norwegian Meteorological Institute (NCC) Norway
NorESM1-ME	2x2	No	Yes	Bjerknes Centre for Climate Research, Norwegian Meteorological Institute (NCC) Norway

DRAFT

## Report on the Wildlife Trafficking Assessment of the Guangxi Zhuang Autonomous Region

Li Zhang  
(Beijing Normal University)  
September 8, 2016

1. Border regions are widely considered to be a hotbed of illegal wildlife trade. Interviews and research in border regions of Guangxi Autonomous Region at the ports of Fangchenggang, Dongxing, Pingxiang and Longbang were carried out by ADB National Wildlife Trafficking Consultant in August 2016 to understand potential wildlife trafficking issues in the program area.

### Key findings:

2. Firstly, no store or vendor was found to be engaging in public sale of wild animals and plants or associated products; however, there was sale of wild ducks and small sharks in the "Ronggu Supermarket", which vendors claimed to be commercially bred.

3. Secondly, during the investigation in Dongxing, it was established that the Beilun River is the most important smuggling route in Dongxing. It is a boundary river between the cities of Dongxing in PRC and Moncay in Viet Nam. The region along the Beilun River has become an important doorway for smuggling activities. Although the entire region of the Beilun River is surrounded by guardrails, there are still a few places which allow people to pass or climb over, and there are a lot of people that travel back and forth along the river by boat after climbing over the guardrails, as shown in picture 1, which shows an area where 20 to 30 people had crossed the guardrail back and forth in an hour. Some people from Viet Nam, wearing baseball caps, carrying snakeskin bags, quickly ran away after going ashore, and then were picked up by someone else and left by a motorbike. Given the rampant smuggling activities during the day, we believe that the condition would be worse at night.



**Picture 1. An Illegal Exit and Entry Site along the Beilun River at Dongxing**

4. In addition, along the Beilun River, there are many handicraft shops and redwood furniture stores. After investigating, it was found that there are 6 stores engaging in display and public sale of ivory products, and that they just display one or two products at the corner, but after asking the vendors, they can show you much more than those on display; besides, the prices of the ivory products here are generally slightly lower than those in the illegal markets of other cities in China. Besides, there are also water deer (*Rusa unicolor*, 2<sup>nd</sup> class national protected

species/CITES Appendix I) heads, Tibetan antelope (*Pantholops hodgsonii*, 1<sup>st</sup> class national protected species/CITES Appendix I) horns sold in the market (Picture 2).

5. In the Dongxing International Trade Market, we have also found some vendors selling live wild animals, most of them being wild birds (like Reded Feet *Amaurornis phoenicurus*, IUCN LC), Testudinates, frogs and snakes (like mud snakes, species unknown, IUCN LC). According to these vendors, there were mainly Elongated tortoises (*Indotestudo elongate*, CITES Appendix II), golden head tortoises (*Cuora* spp, CITES Appendix II), forest tortoises (species unknown), chelydra serpentine (IUCN, LC) and so forth. (Picture 3)

6. Not far from the port of Dongxing, stores along the street are mainly engaging in selling redwood furniture, which is a protected species *Dalbergia cochinchinensis* (Siam Rosewood), as well as *Pterocarpus santalinus* (Red Sandalwood). Given that the size of redwood furniture markets in Dongxing are far smaller than those in Pingxiang, further investigations on wood focused on markets in Pingxiang.





**Picture 2. Wild Animal and Plant Products**



**Picture 3. Live Wild Animals for Sale**



7. Thirdly, focused investigation was carried out of redwood markets in the urban area of Pingxiang and in Puzhai port. In terms of those in the urban area of Pingxiang, their business is relatively slow with a few customers and a lot of shops closed. Through interview and investigation, it was determined that the panels for sale in the redwood markets of Pingxiang, range from high to lower end quality and originate from a number of species, including Fragrant rosewood (*Dalbergia odorifera*), Red sandalwood (*Pterocarpus santalinus lobular*) Siamese rosewood (*Dalbergia cochinchinensis*), and Myanmar padauk (*Pterocarpus macrocarpus*). There was also some redwood furniture which was not made from national protected species. Further detailed research on them. Fragrant rosewood (*Dalbergia odorifera*) is a Class 2 wild plant under national protection. Red Sandalwood and Siamese Rosewood are listed on CITES Appendix II<sup>1</sup>; and the Myanmar chrysanthemum (*pterocarpus macrocarpus*) is temporarily not on the list of the protected species. In term of quantity, the chrysanthemum (*dalbergia odorifera*) is so fewer that it is the most expensive one; the *pterocarpus santalinuslobular* rosewood is seldom used to make large furniture, and is mainly used to make crafts and strings; at present, the relatively popular material is the Siam rosewood (*dalbergia cochinchinensis*), with rising price; however, according to the research, this material is in short supply in the market, because Viet Nam has put a restriction on the export of Siamese rosewood (*dalbergia cochinchinensis*). Some vendors told us that they cannot get the material from Viet Nam even if they already put in orders.

8. It is found that furniture made from Siamese rosewood and *Pterocarpus santalinus* have no CITES certificate either, with local governmental agency issued "three yellow certificates" only (namely, product specification, product quality inspection book and product certification).

9. The markets along the Zhaiyu Port are primarily engaging in crafts, mainly involves such protected species as the chrysanthemum (*dalbergia odorifera*) and the *pterocarpus santalinuslobular* rosewood. In addition, there are at least four other stores displaying and selling ivory products, and one displaying five pieces of hawksbill specimen.



**Picture 4. Some Protected Species are Publicly Sold**

---

<sup>1</sup> CITES Appendix II lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled. International trade in specimens of Appendix-II species may be authorized by the granting of an export permit or re-export certificate. Permits or certificates should only be granted if the relevant authorities are satisfied that certain conditions are met, above all that trade will not be detrimental to the survival of the species in the wild. <https://cites.org/eng/app/index.php>



**Picture 5 Specimens of Hawksbill Turtle**

10. Fourthly, because of some reason, the port of Longbang kept closing, and there were no vendors around the port, so no relevant information was available there.

**Recommendations:**

11. According to our rapid assessment in the region, Guangxi is a major wildlife trafficking destination between China and Viet Nam. The following recommendations are made based on our findings:

- (i) ADB and its PRC partners should consider investing funding to provide cross-boundary wildlife enforcement training courses in the region alongside the ADB project to build capacity and enforcement to address wildlife trafficking issues.
- (ii) Wildlife law enforcement authorities should be incorporated into the joint-agency checkpoints along the border between China and Viet Nam to enable checking of wildlife products at the ports. Awareness of domestic (e.g. China Wildlife Protected Law) and international (e.g. CITES) wildlife laws and punishments should also be directed to related governmental agencies and private sectors in the project region.
- (iii) Joint efforts between China and Viet Nam should be facilitated by ADB and its parties in the province to set up periodic dialogue and a collaboration mechanism on combating illegal wildlife trade in the region;
- (iv) Various organizations including CITES Management Authority Nanning Office, Guangxi Customs, Forest Police and Provincial Anti-smuggling Office etc., governmental enforcement agencies, as well as civil society including Wildlife Conservation Society-PRC Office, International Fund for Animal Welfare-PRC Office, Beijing Normal University, those who have been working on combating illegal wildlife trade and wildlife enforcement capacity building could be potential partners for ADB and its PRC counterparts to address wildlife trafficking issues in the region during/after the project period.

# Environmental and Social Management System (Draft)

---

Project Number: 49408  
September 2016

## People's Republic of China: Guangxi Regional Cooperation and Integration Promotion Investment Program

Prepared by the Guangxi Branch of the Bank of Communications for the Asian Development Bank.

## CURRENCY EQUIVALENTS

(as of 12 September 2016)

Currency Unit	–	yuan (CNY)
CNY1.00	=	\$0.1586
\$1.00	=	CNY6.3014

## ABBREVIATIONS

ADB	–	Asian Development Bank
BEZ	–	border economic zone
BOCOM	–	Guangxi Branch of the Bank of Communications
CSS	–	country safeguard system
EHS	–	environment, health and safety
EIA	–	environmental impact assessment
EIR	–	environmental impact report 环境影响报告书
EIRF	–	environmental impact registration form 环境影响登记表
EIT	–	environmental impact table 环境影响报告表
EMP	–	environmental management plan
EMS	–	environmental management system
EPB	–	Environmental Protection Bureau
EPD	–	Environmental Protection Department
ESMS	–	environment and social management system
ESU	–	environmental and social unit
FI	–	financial intermediary
GAP	–	gender action plan
GMS	–	Greater Mekong Subregion
GRM	–	grievance redress mechanism
GZAR	–	Guangxi Zhuang Autonomous Region
IPP	–	indigenous peoples plan
IR	–	involuntary resettlement
LA	–	land acquisition
MEP	–	Ministry of Environmental Protection
MFF	–	multi-tranche financing facility
PRC	–	People's Republic of China
PSIA	–	poverty and social impact assessment
REA	–	rapid environmental assessment
RP	–	resettlement plan
SME	–	small and medium enterprise
SMS	–	social management system
SPS	–	safeguard policy statement
TA	–	technical assistance

## NOTE

In this report, "\$" refers to US dollars.

This environmental and social management system is a document of the Financial Intermediary. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any Project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## Table of Contents

<b>I. Introduction.....</b>	<b>1</b>
<b>A. Project Description.....</b>	<b>1</b>
<b>B. Need for Environmental Management System .....</b>	<b>2</b>
<b>C. Need for Social Management System .....</b>	<b>3</b>
<b>II. Environmental Management System .....</b>	<b>4</b>
<b>A. Environmental Policies .....</b>	<b>4</b>
1. ADB’s Environmental Safeguard Policy Principles .....	4
2. Country Safeguard System (CSS) and Legal Framework .....	6
3. Guangxi Branch of the Bank of Communications Environmental Policy and Practices.	7
<b>B. Screening, Categorization and Review Procedure.....</b>	<b>9</b>
<b>C. Environmental Compliance and Reporting.....</b>	<b>12</b>
<b>III. Social Management System .....</b>	<b>13</b>
<b>A. Legal Framework.....</b>	<b>13</b>
1. ADB Policy on Involuntary Resettlement.....	13
2. PRC Laws and Regulations .....	15
3. ADB policy on Indigenous Peoples .....	16
4. PRC’s laws and regulations: .....	18
<b>B. Criteria for Selection of Subproject Components .....</b>	<b>19</b>
<b>C. Operationalization of SMS within the Subproject Cycle .....</b>	<b>20</b>
<b>IV. Organizational Structure and Staffing FOR IMPLEMENTATION .....</b>	<b>24</b>
<b>V. Capacity Building and Training .....</b>	<b>25</b>
<b>VI. ESMS Monitoring and REPORTING .....</b>	<b>26</b>
<b>VII. Grievance Redress Mechanism .....</b>	<b>26</b>

**Appendix 1:** Asian Development Bank prohibited investment activities list

**Appendix 2:** Rapid environmental assessment checklist

**Appendix 3:** Social safeguard system workbook for screening and categorizing subproject components

**Appendix 4:** MFF Program Grievance Redress Mechanism

## I. INTRODUCTION

### A. Project Description

1. The Greater Mekong Subregion (GMS) Cooperation Program envisions a subregion that is more integrated, prosperous, and equitable. This vision is being pursued through a "3C" strategy of enhancing connectivity, improving competitiveness, and promoting a greater sense of community. To implement this strategy, the GMS countries have adopted an economic corridor approach, whereby transport corridors will be expanded, trade and investment promoted, and economic growth stimulated. The People's Republic of China (PRC) and Viet Nam are active participants in development of the GMS North-South Economic Corridor.

2. The PRC government has requested ADB to provide a \$450 million multi-tranche financing facility (MFF) to fund a portion of the long-term investment needs for implementing Guangxi's strategies and action plans for both the GMS and the Belt and Road Initiative. The proposed **Guangxi Regional Cooperation and Integration Promotion Investment Program** will enhance cooperation between the PRC and Viet Nam under the GMS framework, and is expected to have high regional economic cooperation and integration spill-overs, benefitting also Viet Nam's northern border provinces including Quang Ninh, Lang Son, and Cao Bang.

3. The proposed investment program will stimulate economic corridor development between the Guangxi Zhuang Autonomous Region (GZAR) and the northern border provinces of Viet Nam by (i) supporting the expansion of small and medium-sized enterprises (SME) in border areas; (ii) facilitating efficient cross-border financial transactions and investments; (iii) facilitating the development of an integrated and interoperable cross-border e-commerce platforms for the PRC and Viet Nam; (iv) providing key infrastructure and trade-related services in border economic zones; and (v) improving physical and informational connectivity and policy coordination.

4. Under the first tranche of the MFF, the Government has requested a \$63.2 million Financial Intermediary Loan to the Guangxi Branch of the Bank of Communications (BOCOM) for *Expansion of SME Financing in Guangxi* (sub-project 4). BOCOM as a financial intermediary (FI) will provide finance to SMEs in the GZAR to promote cross-border trade and investment, with a focus in the prefecture-level cities of Fangchenggang, Chongzuo and Baise.

5. ADB is committed to ensuring the social and environmental sustainability of the projects it supports. ADB's Safeguard Policy Statement (SPS, 2009) consists of three policies on Environment, Involuntary Resettlement and Indigenous Peoples. The goal of SPS is to promote the sustainability of project outcomes by protecting the environment and people from projects' potential adverse impacts. The objectives of ADB's safeguards are to: (i) avoid adverse impacts of projects on the environment and affected people, where possible; (ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and (iii) help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

6. This Environmental and Social Management System (ESMS) is prepared by BOCOM. It consists of two parts: an environmental management system (EMS) and a social management system (SMS). It has been developed to ensure adequate due diligence, assessment and reporting in accordance with ADB's *Safeguard Policy Statement* (SPS, 2009). The ESMS incorporates the following key elements:

- (i) applicable ADB safeguard policies and relevant PRC laws and regulations (hereinafter, referred to as country safeguard systems CSS);
- (ii) screening and review procedure;
- (iii) organizational structure and staffing, including skills and competencies in environmental and social issues;
- (iv) capacity development and training requirements; and
- (v) monitoring and reporting.

7. This ESMS will become effective prior to ADB's first disbursement for the financing of subproject components. BOCOM will establish an Environmental and Social Unit who will be responsible for reviewing and monitoring the performance of the ESMS, and submitting consolidated annual reports to ADB and on subproject completion.

## B. Need for Environmental Management System

8. Subproject 4 for Expansion of SME Financing in Guangxi has been classified by ADB as environment category FI. Table 1 shows the environmental safeguard requirements for FI specified in SPS (2009). Since the SME subproject components to be financed by BOCOM could involve various sectors which cannot be determined at present, there is no guarantee that all the SME projects would be environment category C (which need not apply any other specific requirement). Subproject components that would be classified as Category A would be excluded from financing. This EMS is prepared to meet SPS environmental requirements for implementation by BOCOM for environment Category B subproject components in line with ADB SPS as set out in Table 1.

**Table 1: Relevant Requirements in ADB's Safeguard Policy Statement (2009) for Environment Category FI**

ADB SPS Requirement for Environment Category FI		ESMS Response to SPS Requirements
Paragraph	Requirement	
50	A proposed project is classified as category FI if it involves investment of ADB funds to or through a FI	Tranche 1, subproject 4 involves investment of ADB funds through BOCOM and is classified as FI.
65	ADB conducts safeguard due diligence to assess the potential environmental and social impacts and risks associated with the FI's existing and likely future portfolio, and its commitment and capacity in social and environmental management	Environmental due diligence conducted at BOCOM included site meetings with relevant bank staff in August 2016 and review of relevant documents provided by the bank.
65	Where the FI's investments have minimal or no adverse environmental or social risks, the FI project will be treated as category C project and need not apply any other specific requirements.	The subproject involves the provision of loans to SMEs in the border areas of Guangxi. There is no guarantee that all the sub-loans would have minimal or no adverse environmental impact, however, Category A subproject components would be excluded.
65	All other FIs will be required to have in place or establish an appropriate ESMS commensurate with the nature and risks of the FI's likely future portfolio to be maintained as part of the FI's overall system.	This ESMS is prepared to satisfy this requirement.
65	All FIs will ensure that their investments are in compliance with applicable national laws and regulations and will apply the prohibited investment activities list to subprojects financed by ADB	ADB's prohibited investment activities list is included in Appendix 1 to this ESMS.
66	The ESMS will incorporate the following elements: (i) environmental and social policies; (ii) screening, categorization and review procedure; (iii) organizational structure and staffing; (iv) training	The ESMS incorporates all these elements.



ADB SPS Requirement for Environment Category FI		ESMS Response to SPS Requirements
Paragraph	Requirement	
	requirements; and (v) monitoring and reporting.	

Notes: ADB = Asian Development Bank; BOCOM = Guangxi Branch of the Bank of Communications; ESMS = environmental and social management system; FI = financial intermediary; SME = small and medium enterprise; SPS = safeguard policy statement

9. The ESMS blends BOCOM's existing environmental safeguard systems and procedures, CSS and ADB SPS. ADB is committed to strengthening developing member country's CSS with a focus on capacity development of borrowers<sup>1</sup>. The PRC CSS covers all 11 environmental safeguard policy principles in the SPS to a varying extent, subject to effective application, implementation and monitoring. Environmental due diligence was conducted at BOCOM in August 2016, which included interviews with relevant bank staff and review of relevant documents relating to the bank's existing system and procedures on environmental safeguard to assess current capacity, systems and needs.

### C. Need for Social Management System

10. The social management system (SMS) has been prepared to address unavoidable impacts that may arise from: (i) loss of structures; (ii) loss of livelihood systems/income opportunity (due to the loss of productive land or impact to a structure where a livelihood activity is being carried out); and (iii) loss of community property resources (religious structures, grazing land). The system guides the compensation payment for lost assets, livelihoods, community property and resettlement and rehabilitation of project affected people in accordance with the ADB's SPS 2009.

11. The SMS provides relevant social policies, guidelines, codes of practice and procedures to be integrated into the implementation of the ADB-supported projects. The purpose is to outline a framework for social management, providing details of potential social issues typically associated with the planning and implementation of the subproject and guidelines on how to carry out Poverty and Social Impact Assessments (PSIAs), Indigenous Peoples Plan (IPP), Gender Action Plan (GAP) and Resettlement Plans (RPs) where necessary to mitigate project induced negative social impacts and enhance positive social impacts of the subproject interventions. Stakeholder consultations and social screening during the feasibility stage of each activity will identify and categorize the level of impacts and the type of modality that needs to be followed for defined losses resulting from the subproject.

12. The SMS presents the review of relevant PRC's land acquisition laws and legislation and operational guidelines including ethnic minority laws and regulations, likely social issues due to potential subproject activities, strategies and measures to minimize or mitigate these issues, necessary institutional arrangements and mechanisms for monitoring and evaluation to be taken into consideration for integration of social aspects into the design and implementation of subproject components. Adhering to the principles and procedures laid out in this SMS, and using the checklist of potential social issues, will help the implementing agencies to ensure compliance with the ADB SPS 2009 and the relevant provisions under the related policies of the PRC. This SMS will serve as a guidance for the designated staff of the implementing agencies in overseeing and monitoring the social safeguards compliance of the respective subproject components. Therefore, this SMS must be used as the template and guideline to ensure social compliance of the planning and implementation of the activities envisaged under the subproject.

<sup>1</sup> Asian Development Bank. 2009. Safeguard Policy Statement. Paragraph 68.

13. The main **objective** of the SMS is to ensure that activities under the proposed operations address the following issues:

- (i) Minimize potential negative social impacts as a result of either individual subproject components or their cumulative effects;
- (ii) Enhance positive social outcomes;
- (iii) Provide a mechanism for consultation and disclosure of information;
- (iv) Ensure that social issues are thoroughly evaluated and necessary interventions are incorporated in planning, decision making and implementation of subproject activities;
- (v) Protect human health and rights of people if affected; and
- (vi) Ensure compliance and due diligence with ADB SPS 2009 as well as relevant government policies, laws and regulations, guidelines and procedures as applicable to the type of subproject activities financed by the investment program.

## II. ENVIRONMENTAL MANAGEMENT SYSTEM

### A. Environmental Policies

#### 1. ADB's Environmental Safeguard Policy Principles

14. The environmental safeguard principles as set out in SPS are to ensure environmental soundness and sustainability of projects and to support the integration of environmental considerations into the project decision-making process. Environmental safeguards are required if a project is likely to have potential environmental risks and impacts. SPS includes 11 environmental safeguard policy principles as shown in Table 2. This EMS is prepared to facilitate compliance of BOCOM ESMS with these 11 principles.

**Table 2: ADB Safeguard Policy Statement (2009) Environmental Safeguard Policy Principles**

No.	Environmental Safeguard Policy Principles
1	Use a screening process for each proposed project, as early as possible, to determine the appropriate extent and type of environmental assessment so that appropriate studies are undertaken commensurate with the significance of potential impacts and risks.
2	Conduct an environmental impact assessment for each proposed project to identify potential, direct, indirect, cumulative, and induced impacts and risks to physical, biological, socioeconomic (including impacts on livelihood through environmental media, health and safety, vulnerable groups, and gender issues), and physical cultural resources in the context of the project's area of influence. Assess potential transboundary and global impacts, including climate change. Use strategic environmental assessment where appropriate.
3	Examine alternatives to the project's location, design, technology, and components and their potential environmental and social impacts and document the rationale for selecting the particular alternative proposed. Also consider the no project alternative.
4	Avoid, and where avoidance is not possible, minimize, mitigate and/or off set adverse impacts and enhance positive impacts by means of environmental planning and management. Prepare an environmental management plan (EMP) that includes the proposed mitigation measures, environmental monitoring and reporting requirements, related institutional or organizational arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators. Key considerations for EMP preparation include mitigation of potential adverse impacts to the level of no significant harm to third parties, and the polluter pays principle.

No.	Environmental Safeguard Policy Principles
5	Carry out meaningful consultation <sup>2</sup> with affected people and facilitate their informed participation. Ensure women's participation in consultation. Involve stakeholders, including affected people and concerned nongovernment organizations, early in the project preparation process and ensure that their views and concerns are made known to and understood by decision makers and taken into account. Continue consultations with stakeholders throughout project implementation as necessary to address issues related to environmental assessment. Establish a grievance redress mechanism to receive and facilitate resolution of the affected people's concerns and grievances regarding the project's environmental performance.
6	Disclose a draft environmental assessment (including the EMP) in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected people and other stakeholders. Disclose the final environmental assessment, and its updates if any, to affected people and other stakeholders.
7	Implement the EMP and monitor its effectiveness. Document monitoring results, including the development and implementation of corrective actions, and disclose monitoring reports.
8	Do not implement project activities in areas of critical habitats, unless (i) there are no measurable adverse impacts on the critical habitat that could impair its ability to function, (ii) there is no reduction in the population of any recognized endangered or critically endangered species, and (iii) any lesser impacts are mitigated. If a project is located within a legally protected area, implement additional programs to promote and enhance the conservation aims of the protected area. In an area of natural habitats, there must be no significant conversion or degradation, unless (i) alternatives are not available, (ii) the overall benefits from the project substantially outweigh the environmental costs, and (iii) any conversion or degradation is appropriately mitigated. Use a precautionary approach to the use, development, and management of renewable natural resources.
9	Apply pollution prevention and control technologies and practices consistent with international good practices as reflected in internationally recognized standards such as the World Bank Group's Environmental, Health and Safety Guidelines. Adopt cleaner production processes and good energy efficiency practices. Avoid pollution, or, when avoidance is not possible, minimize or control the intensity or load of pollutant emissions and discharges, including direct and indirect greenhouse gases emissions, waste generation, and release of hazardous materials from their production, transportation, handling, and storage. Avoid the use of hazardous materials subject to international bans or phase outs. Purchase, use, and manage pesticides based on integrated pest management approaches and reduce reliance on synthetic chemical pesticides.
10	Provide workers with safe and healthy working conditions and prevent accidents, injuries, and disease. Establish preventive and emergency preparedness and response measures to avoid, and where avoidance is not possible, to minimize, adverse impacts and risks to the health and safety of local communities.
11	Conserve physical cultural resources and avoid destroying or damaging them by using field-based surveys that employ qualified and experienced experts during environmental assessment. Provide for the use of "chance find" procedures that include a pre-approved management and conservation approach for materials that may be discovered during

<sup>2</sup> Meaningful consultation is a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

No.	Environmental Safeguard Policy Principles
	project implementation.

## 2. Country Safeguard System (CSS) and Legal Framework

15. PRC has established a comprehensive legal and regulatory framework for safeguarding the environment. It consists of laws, regulations, and administrative decrees issued by the State Council and the Ministry of Environmental Protection (MEP); environmental guidelines and standards promulgated by MEP; sector-specific guidelines and standards established by the respective administrative authorities, provincial legislation and regulation, and international agreements. The PRC legal framework and CSS address all 11 SPS environmental safeguard principles likely to be triggered by the subproject components to varying degrees. Some of the key relevant national legislation are described below.

16. The most far-reaching law is the **Environmental Protection Law (EPL)** of 1989, amended in 2014. When promulgated in 1989, it set out key principles for the nation's pollution control system, including the policy known as the "Three Simultaneities"<sup>3</sup> and requirements for environmental impact assessment (EIA). The EPL was amended in 2014 and took effect on January 1, 2015. Public participation and environmental information disclosure provisions are among the significant changes introduced in the amended EPL, further supported by the decrees on the preparation of EIA summaries for the purpose of public disclosure, and methods for public participation in environmental management. For grievance redress, a hotline number 12369 has been established at each level of environmental protection authority throughout the nation since March 2011 for receiving and resolving environmental complaints in accordance with the *Management Measures for Operation of the Environmental Complaint Hotline* (MEP Decree [2010] No. 15).

17. Environmental impact assessment is governed by the **Environmental Impact Assessment Law** (2002), covering EIAs for development planning and construction projects. The two regulations pertaining to this law are: the *Construction Project Environmental Protection Management Ordinance* (1998) and the *Plan Environmental Impact Assessment Ordinance* (2009), which requires an early screening and environmental categorization, environmental impact assessments for construction projects, environmental monitoring, and public consultation.

18. MEP has issued a series of **technical guidelines** for preparing EIAs. These include impact assessment guidelines on general EIA program, atmospheric environment, ambient air quality, surface water, ground water, noise, and ecology. The requirements specified in the technical guideline on general EIA program cover all 11 SPS environmental safeguard principles to varying degrees.

19. MEP issues two types of **environmental standards**: environmental quality standards and pollutant emission/discharge standards. The former sets quality standards for ambient air, environmental noise and vibration, surface water, ground water, soil and environmental and hygiene standards for construction sites. The latter controls noise from construction sites, community noise, air pollutant emission and wastewater discharge.

<sup>3</sup> The "Three Simultaneities Policy" requires the design, construction and operation of pollution control and treatment facilities to occur simultaneously with the project design, construction and operation.

20. **Institutional Arrangement for Environmental Safeguard Implementation and Enforcement.** In the PRC, the enforcement of environmental laws and regulations rests with the environmental protection authorities within each level of government. MEP is the regulatory, enforcement and supervision authority at the national level. MEP promulgates laws, regulations, environmental standards and technical guidelines on environmental impact assessment and pollution prevention and control. Each province has an Environmental Protection Department (EPD). The EPD acts as the gate-keeper for environmental impact assessment and pollution prevention and control in the province. The provincial EPD is often delegated the authority by MEP to approve environmental impact assessment reports for development planning and construction projects in the province, except those with national interest and those that cross provincial boundaries that would need MEP approval. The environmental management authority at the municipal or county level is the Environmental Protection Bureau (EPB). The EPB enforces environmental laws and conducts environmental monitoring within city or county limits. The EPB could be delegated the authority to approve environmental impact assessments by the provincial EPD. The EPD and EPBs are supported by environmental monitoring stations (who are the qualified entities to carry out environmental monitoring). The PRC has a qualification and registration system for environmental impact assessment and only qualified and registered institutes and individuals are allowed to undertake environmental impact assessment. Under the recently issued *Management Measures for the Qualification of Environmental Impact Assessment for Construction Projects* (MEP decree [2015] No. 36), qualified institutes who prepare environmental impact reports or tables for construction projects in the PRC can no longer be a subsidiary of an environmental authority responsible for approving domestic environmental impact reports or tables as of 1 November 2015.

### 3. Guangxi Branch of the Bank of Communications Environmental Policy and Practices

21. An environmental due diligence audit conducted in August 2016 identified that BOCOM is not a member of the Equator Principles and does not have a written environmental policy. All policies must come from the headquarters, and branch offices cannot issue policies. However, some of the national policies are quite progressive. BOCOM issued a *Proposal on Energy Conservation and Environmental Protection* 《节能环保倡议书》 and a *Low Carbon Office Electronic Handbook* 《低碳办公电子手册》 to its employees in June 2015, urging the employees to be ambassadors and provided examples of low carbon living principles that could be adopted at home and in the office, energy and water conservation, and pollution reduction measures.

22. In addition, BOCOM has been operating a Green Credit Policy System (绿色信贷政策体系) with guidelines on green credit management 《绿色信贷管理指引, credit granting and risk 《授信与风险指引》. “Green Credit” has been a long term strategy for BOCOM to promote and implement energy conservation, environmental protection, low carbon and safety, in its banking business; and to influence other enterprises and individuals in changing their environmental and social behavior. This system consists of the following key components:

- (i) A tri-color (green, yellow and red) system for the classification of potential and existing borrowers based on their performance in environmental protection and safety. Green represents those with no environmental and safety issue. Yellow represents those with environmental and safety concerns. Red represents those with environmental and safety risks.

- (ii) An A, B, C categorization for managing borrowers with environmental and safety risks has been established. Those receiving negative category A rating in the environmental and social risk audit shall be excluded from going through the credit approval process. Loan (project or fixed asset) approval for category A clients shall be by the headquarters. Loan approval for category B clients shall be by the provincial level branches or higher.
- (iii) Two checklists have been set up to assist in environmental and social risks management. The *Environmental and Social Risk Due Diligence Audit Checklist and Specifications* 《环境和社会风险尽职调查清单及规范》 consists of 11 items covering 58 business sectors. These items consist of labor and work conditions, management of explosives and chemicals, pollution prevention and control, community health and safety, land acquisition and involuntary resettlement, biodiversity and management of sustainable natural resources, respect for ethnic minorities, protection of cultural heritage, environmental and social risks of the supply chain, the client's environmental and social risk assessment and management system, and international good practice. The *Environmental and Social Risk Compliance Audit Checklist* 《环境和社会合规风险点审查清单》 includes audit items on compliance with the policy on excessive capacity, project approval conditions, environmental impact assessment approval including compliance with the "Three Simultaneities", land use pre-approval or approval, social stability risk assessment, energy conservation assessment and monitoring, implementation of health and health standards, urban planning, and other relevant requirements. Audit results will be included in the *Credit Granting Analysis Report* 《授信分析报告》 during the loan application stage or the *Project Assessment Report* 《项目评估报告》 during loan implementation stage.

23. Environmental due diligence audit indicates that BOCOM has quite progressive national policies that support sustainable development, however, within regional branches there is no department nor designated person responsible for environment, health and safety. Relevant staff would from time to time receive training either organized by the local authorities or by the bank on environmental issues relevant to different business sectors and construction projects. A review of training conducted in the first quarter of 2016 indicates that the focus was on guidelines and case studies related to credit granting, loan implementation management, and credit granting risks. There was one training session on the analysis of project design and feasibility study. No training on environmental management, environmental impact assessment or pollution control and prevention was conducted in the first quarter of 2016.

24. Overall, BOCOM has demonstrated strong commitment to environmental protection, low carbon practices, green credit and green procurement. Its headquarters publishes a *Corporate Social Responsibility Report* 《社会责任报告》 annually. BOCOM received the Green Contribution Award (绿色贡献奖) in 2015, the only bank receiving the award in the banking sector in Guangxi.

25. There is evidently reasonable environment capacity at the national level but not at the regional and local branch level. Section IV. Organizational Structure and Staffing of this ESMS, describes the proposed measures to strengthen environmental capacity within BOCOM. There is an agreed commitment to establish an Environmental and Social Unit (ESU) within the Credit Granting Department or the Small Enterprise Finance Department which will be responsible for implementation of the ESMS.

## B. Screening, Categorization and Review Procedure

26. **Screening and Categorization.** As described above, BOCOM has already established a Borrower screening and categorization (A, B, C) process. For screening and categorization of components to be funded by ADB under the subproject, this process shall take account of ADB's prohibited investment activities list shown in Appendix 1 and rapid environmental assessment (REA) checklist for environment categorization as shown in Appendix 2.

27. For components seeking ADB funding under this subproject, those with prohibited investment activities or environment category A shall be excluded. Any subproject component involving investment activities on the list shown in Appendix 1 shall receive a BOCOM negative A categorization and shall be denied ADB funding. According to ADB's SPS 2009, a classification system (environment categories A, B and C) is used to reflect the significance of a project's potential environmental impacts:

<p><b>Category A.</b> A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works.</p>
--

<p><b>Category B.</b> A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects.</p>
--

<p><b>Category C.</b> A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts.</p>
---

28. ADB uses the REA checklist for environmental categorization. The types of subproject 4 components proposed for investment may involve civil works or facility expansion or upgrade to (i) buildings, (ii) roads, (iii) water supply and, (iv) wastewater treatment. Appendix 2 provides the REA checklist for these four project types as well as a general checklist for other project types. Table 3 presents the actions for the screening and environment categorization of subproject components.

**Table 3: Screening and Environmental Categorization of Subproject Components**

<b>Action 1: Project screening, categorization and the need to undertake environmental impact assessment</b>
<ol style="list-style-type: none"> <li>1. Incorporate ADB's prohibited investment activities list (see Appendix 1) and the rapid environmental assessment (REA) checklist (see Appendix 2) in BOCOM's <i>Bank of Communication Sector Green Credit Management Guideline</i> 《交通银行行业绿色信贷管理指引》 for screening and environmental categorization of proposed subproject components seeking ADB funding.</li> <li>2. Proposed subproject components with investment activities listed in Appendix 1 shall receive a BOCOM negative A categorization and shall be excluded from ADB funding.</li> <li>3. For proposed subproject components not on the prohibited investment activities list, BOCOM shall undertake screening using the REA checklist provided in Appendix 2 and shall determine the environment category (A, B, or C) for each proposed subproject component.</li> <li>4. Proposed subproject components that are environment category A will be excluded from ADB funding. Environment category B subproject components shall undertake environmental impact assessment described under action 2 (see Table 4: Environmental Impact Assessment Reporting). Environment category C subproject components do not have any specific environmental requirements.</li> <li>5. GPMO Environment Specialist will carry out prior review of the first two subprojects of each sector that are classified as Environment Category B.</li> <li>6. The completed REA checklists for each proposed subproject component shall be made available to GPMO Program Environment Specialist and ADB, on request and will be subject to quarterly spot checks.</li> </ol>

29. **Environmental Impact Assessment.** Environmental impact assessment for subprojects classified as environment category B shall adopt procedures and requirements in the CSS. The *Directory for the Management of Construction Project Environmental Impact Assessment Categorization* (MEP Decree [2015] No. 33) 《建设项目环境影响评价分类管理名录》 环令【2015】第 33 号, classifies environmental impact assessments for 199 construction project types/items into 3 categories with different reporting requirements, based on the 'significance' of potential environmental impact due to the project and the environmental sensitivity of the project site as described in the Directory. An Environmental Impact Report (EIR) 环境影响报告书 is required for construction projects with potential significant environmental impacts. An Environmental Impact Table (EIT) 环境影响报告表 is required for construction projects with less significant environmental impacts. An Environmental Impact Registration Form (EIRF) 环境影响登记表 is required for construction projects with the least significant environmental impacts.

30. However, EIRFs will not be able to address the environmental safeguard policy principles set out in SPS 2009 because (i) preparation does not require any specific qualification, meaning that the project proponent, who might not have any expertise or experience in environmental safeguard, could prepare the EIRF; and (ii) the contents are too simplified to adequately cover ADB's environmental safeguard policy principles. Therefore, environmental impact assessment for subproject components shall be either an EIR or an EIT.

31. EITs have no requirement for alternative analysis, information disclosure, public consultation, and environmental management plan and therefore are unable to address all ADB environmental safeguard policy principles. Additional requirements for these items shall be included in the Terms of Reference for EITs so that they can adequately address all ADB environmental safeguard policy principles.



32. Table 4 describes the environmental impact assessment reporting for subproject components.

**Table 4: Environmental Impact Assessment Reporting**

<b>Action 2: Environmental impact assessment reporting</b>
<ol style="list-style-type: none"> <li>1. For subproject components that are environment category B, the proponent shall prepare either an environmental impact report (EIR 环境影响报告书) or an environmental impact table (EIT 环境影响报告表). Environmental impact registration form (EIRF 环境影响登记表) shall not be adopted.</li> <li>2. If potentially sensitive environmental issues are identified in the REA checklist, the need for more detailed environmental assessment surveys in relation to a particular topic area may need to be included in the Terms of Reference for the EIR or EIT.</li> <li>3. The EIR or EIT shall be prepared by an institute with Class A or Class B qualification in the PRC, as specified in Articles II and III of the <i>Management Measures for the Qualification of Environmental Impact Assessment for Construction Projects</i> (MEP decree [2015] No. 36) 《建设项目环境影响评价资质管理办法》(环令【2015】36号) .</li> <li>4. BOCOM ESU to ensure that the Terms of Reference for the EIR and EIT is prepared in accordance with the following requirements:</li> <li>5. The EIR and EIT shall contain all the contents listed in Article 3 to Article 15 of HJ 2.1-2011 <i>Technical guidelines for environmental impact assessment – general program</i> 《环境影响评价技术导则 总纲》</li> <li>6. Air quality impact assessment shall be in accordance with the requirements and procedures in HJ 2.2-2008 <i>Guidelines for environmental impact assessment – atmospheric environment</i> 《环境影响评价技术导则 大气环境》</li> <li>7. Noise impact assessment shall be in accordance with HJ 2.4-2009 <i>Technical guidelines for noise impact assessment</i> 《环境影响评价技术导则 声环境》</li> <li>8. Surface water quality assessment shall be in accordance with HJ/T 2.3-93 <i>Technical guidelines for environmental impact assessment – surface water environment</i> 《环境影响评价技术导则 地面水环境》 and the discharge of wastewater during construction and operation shall comply with the <i>Water Pollution Prevention and Control Law, 1984</i> (amended in 2008) 《中华人民共和国水污染防治法》2008 修订 and GB 8978-1996 <i>Integrated wastewater discharge standard</i> 《污水综合排放标准》</li> <li>9. Ecological impact assessment shall be in accordance with HJ 19-2011 <i>Technical guidelines for environmental impact assessment – ecological impact</i> 《环境影响评价技术导则 生态影响》</li> <li>10. Solid waste impact assessment and management during construction and operation shall be in accordance with the <i>Solid Waste Environmental Pollution Prevention and Control Law, 1995</i> (amended in 2004) 《中华人民共和国固体废物污染防治法》2004 修订 and <i>Specifications on the management of urban construction and demolition waste</i> (Ministry of Construction Decree [2005] No. 139) 《城市建筑垃圾管理规定》建设部令 2005 年第 139 号</li> <li>11. Alternative analysis shall be in accordance with the requirements in Article 14 of the HJ 2.1-2011 <i>Technical guidelines for environmental impact assessment – general program</i> 《环境影响评价技术导则 总纲》</li> <li>12. Pollution prevention and control shall be in accordance with the “Three Simultaneity” (三同时) specified in Article 41 of the <i>Environmental Protection Law, 1989</i> (amended in 2014) 《中华人民共和国环境保护法》2014 修订; and Article 16 of the <i>Construction Project Environmental Protection Management Ordinance, 1998</i> 《建设项目环境保护管理条例》1998</li> <li>13. An environmental management plan (EMP) shall be prepared in accordance with Article 17 of the <i>Environmental Impact Assessment Law, 2002</i> 《中华人民共和国环境影响评价法》2002 ; Article 8 of the <i>Construction Project Environmental Protection Management Ordinance,</i></li> </ol>

<b>Action 2: Environmental impact assessment reporting</b>	
	1998 《建设项目环境保护管理条例》1998; and Article 10 of HJ 2.1-2011 <i>Technical guidelines for environmental impact assessment – general program</i> 《环境影响评价技术导则 总纲》 to include environmental management/protection measures and environmental monitoring during subproject component implementation.
14.	BOCOM ESU will review the subproject component EIRs or EITs are prepared in line with the Terms of Reference and will ensure that the identified gaps between CSS and ADB safeguard requirements are fulfilled in relation to alternative analysis, information disclosure, public consultation and environmental management plan.
15.	Meaningful public consultation shall be conducted during EIR and EIT preparation in accordance with Articles 53 and 56 of the <i>Environmental Protection Law, 1989</i> (amended in 2014) 《中华人民共和国环境保护法》2014 修订; Article 21 of the <i>Environmental Impact Assessment Law, 2002</i> 《中华人民共和国环境影响评价法》2002; <i>Method for public participation in environmental protection</i> {MEP Decree [2015] No. 35} 《环境保护公众参与办法》环境保护部令 [2015]第 35 号; and Article 8 of HJ 2.1-2011 <i>Technical guidelines for environmental impact assessment – general program</i> 《环境影响评价技术导则 总纲》
16.	BOCOM shall review and ensure that the EIR or EIT is approved by the relevant environmental authority in accordance with its <i>Environmental and Social Risk Due Diligence Audit Checklist and Specifications</i> 《环境和社会风险尽职调查清单及规范》.
17.	BOCOM shall disclose a summary of the EIR or EIT on its web-site as a means of information disclosure.
18.	BOCOM will provide to ADB annual ESMS performance reports with details of environmental screening, assessment and reporting for all subproject components.
19.	The annual ESMS performance reports will include specific details of the first two environment category B subproject components for each sector that were subject to prior review by the program Environment Specialist.

### C. Environmental Compliance and Reporting

33. During sub-loan implementation, BOCOM shall monitor the subproject 4 components' environmental performance and compliance with legal and other requirements, and shall submit annual reports to ADB as described in Table 5.

**Table 5: Monitoring and Reporting**

<b>Action 5: Monitoring and Reporting</b>	
1.	The REA checklist, assessment reports, domestic approvals and any other relevant safeguard documentation and records should be maintained in good order for review on request.
2.	BOCOM shall require the subproject 4 components to implement the environmental management plan (EMP) described in the EIR or EIT during the sub-loan implementation period.
3.	BOCOM ESU shall monitor and audit the subproject 4 components environmental performance and compliance based on the <i>Environmental and Social Risk Compliance Audit Checklist</i> 《环境和社会合规风险点审查清单》, at a frequency of at least once every six months.
4.	All audit findings shall be presented in the BOCOM <i>Project Assessment Report</i> 《项目评估报告》 in accordance with BOCOM requirement.
5.	BOCOM shall submit an annual ESMS performance report to ADB annually. Relevant audit findings and recommendations from BOCOM's <i>Project Assessment Report</i> 《项目评估报告》 could provide input to the report.

### III. SOCIAL MANAGEMENT SYSTEM

#### A. Legal Framework

34. The SMS has been prepared based on the applicable laws and regulations of the PRC and ADB's *Safeguards Policy Statement* (SPS, 2009).

#### 1. ADB Policy on Involuntary Resettlement

35. **Relevant ADB policies** include:

- (i) *Safeguard Policy Statement* (SPS), June 2009; safeguard requirement # 2 for involuntary resettlement and safeguard requirement # 3 for ethnic minority;
- (ii) *Public Communications Policy*, 2011; and
- (iii) *Accountability Mechanism Policy*, 2012.

36. The objectives of ADB's SPS (2009) on involuntary resettlement are (i) to avoid involuntary resettlement wherever possible; (ii) to minimize involuntary resettlement by exploring project and design alternatives; (iii) to enhance, or at least restore, the livelihoods of all displaced persons in real terms relative to pre-project levels; and (iv) to improve the standards of living of the displaced poor and other vulnerable groups.

37. The involuntary resettlement safeguards covers physical displacement (relocation, loss of residential land, or loss of shelter) and economic displacement (loss of land, assets, access to assets, income sources, or means of livelihoods) as a result of (i) Involuntary acquisition of land, or (ii) Involuntary restrictions on land use or on access to legally designated parks and protected areas. It covers them whether such losses and involuntary restrictions are full or partial, permanent or temporary.

38. The three important elements of ADB's SPS (2009) are: (i) compensation at replacement cost for lost assets, livelihood, and income prior to displacement; (ii) assistance for relocation, including provision of relocation sites with appropriate facilities and services; and (iii) assistance for rehabilitation to enhance, or at least restore, the livelihoods of all displaced persons relative to pre-project levels and to improve the standard of living of displaced, poor and other vulnerable groups.

**Table 6: ADB Safeguard Policy Statement (2009) Involuntary Resettlement Safeguard Policy Principles**

No.	Involuntary Resettlement Safeguard Policy Principle
1	Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.
2	Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to

No.	Involuntary Resettlement Safeguard Policy Principle
	receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.
3	Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.
4	Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.
5	Improve the standards of living of the displaced poor and other vulnerable groups, including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.
6	Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement.
7	Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.
8	Prepare a resettlement plan (RP) elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.
9	Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.
10	Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.
11	Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.
12	Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the results of resettlement monitoring. Disclose monitoring reports.

## 2. PRC Laws and Regulations

### 39. Laws, regulations and policies of the PRC include:

- (i) *Land Administration Law* of the PRC (January 1, 1999, amended on August 28, 2004)
- (ii) *The Implementation Rules for The Land Administration Law of the People's Republic of China* (effective as of January, 1, 1999, amended on July 29, 2014);
- (iii) *The Administrative Measures for the Pre-Review of Land Use for Construction Projects of the Local Government* (No.42 Order of The Ministry of Land and Resources, effective as of January 1, 2009);
- (iv) *Guidelines on Improving the System of Land Acquisition Compensation and Resettlement* (the Ministry of Land and Resources made) (effective as of November 3, 2004);
- (v) *Real Property Rights Law of the People's Republic of China* (No. 62 order of the President of the People's Republic of China, and effective as of October 1, 2007);
- (vi) September, 2004 the Ministry of Land Resources promulgated *Guidelines on Improving the System of LA Compensation and Resettlement* (the Ministry of Land and Resources [2004] number 238);
- (vii) *The Decision of the State Council on Deepening the Reform and Rigidly Enforcing Land Administration* (SC [2004] No.28); and
- (viii) *Expropriation and Compensation of the Housing on the State-owned Land* (Decree 590 of State Council, (effective from January 21, 2011).

### 40. GZAR Laws and regulations, if any details required:

- (i) *Implementation Method of Guangxi Zhuang Autonomous Region for Land Administration Law* (effective from September 1, 2001);
- (ii) *Notification on Announcement for Average Annual Output Value for Land* issued by Land Resource Department of Guangxi Zhuang Autonomous Region (effective from January 1, 2016); and
- (iii) *Guidelines on Improving and Managing Land Acquisition in Guangxi Zhuang Autonomous Region* (effective from November 21, 2014)

41. The ***Land Administration Law of the PRC*** is the main policy basis for the subproject. It was passed at the 16th session of the Sixth Standing Committee Meeting of the National People's Congress on June 25, 1986. It was subsequently amended at the Fourth Session of the Ninth Standing Committee Meeting of the National People's Congress. The newly amended law was brought into force on January 1, 1999, according to the *Decision on the Amendment to the Land Administration Law of the PRC* that was adopted at the Fifth Session of the Seventh Standing Committee Meeting of the National People's Congress.

42. The Ministry of Land and Resources and the GZAR government have promulgated policies and regulations on the same basis. The *Decision of the State Council on Deepening the Reform and Rigidly Enforcing Land Administration* (SC [2004] No.28) promulgated in October 2004 defines the principles and rates of compensation and resettlement for LA, and LA procedures and monitoring system. These legal documents constitute the legal basis for resettlement in the subproject.

43. Article 12 in ***Document 28: State Council Decision to Deepen Reform and Strictly Enforce Land Administration***, issued by State Council, October 2004, specifies improving land acquisition compensation practice. People's Governments at the county level and above

shall adopt practical measures to ensure that the farmers whose land is acquired shall not be made worse off. It should be ensured that land compensation fees, resettlement subsidies and compensation for ground attachments and standing crops shall be provided in accordance with applicable laws and regulation in full and in time. If the land compensation fees and resettlement subsidies as stipulated by law are not able to maintain the original standards of the land-losing farmers and are not adequate to cover the social insurance costs of the landless farmers, the provincial government shall approve an increase in the resettlement subsidies. If the sum of the land compensation fees and resettlement subsidies has reached the legal upper limit but still cannot maintain the original living standards of the farmers, the local government can provide additional subsidies with the use of revenues from the sales for the use of state land. The provincial government shall formulate and publicize the standard annual output or regional land prices for land acquisition in the cities and counties under the provincial jurisdiction. Land acquisition compensation shall be kept identical for identical quality of land in same locality. The full costs of land acquisition for national key development projects shall be included in the overall project budget.

44. Article 7 of the ***Implementation Method of Guangxi Zhuang Autonomous Region for Land Administration Law*** specifies that the ownership of the state-owned and rural collective-owned land shall be determined by the *Land Administration Law*, the implementation regulation of the *Land Administration Law* and other laws and statutes. Article 8 further specifies that the rural collective-owned land is legally owned by the farmer's collectives and managed and administrated by the village collective economic bodies. If the village collective economic body is not complete, the villager committee shall manage and administer the land. If the land in a village is owned by more than two rural collective economic bodies, each of the bodies or village group shall manage and administer the land. If the land is owned by town or township, the rural collective economic bodies of the town or township shall manage and administer the land. If the rural collective economic body of the town or township is not complete, the town or township government shall manage and administer the land.

### **3. ADB policy on Indigenous Peoples**

45. The objectives of ADB Policy on Indigenous Peoples are to ensure that project are designed and implemented in a way that fosters full respect for Indigenous Peoples' identity, dignity, human rights, livelihood systems, and cultural uniqueness as defined by the Indigenous Peoples themselves so that they (i) receive culturally appropriate social and economic benefits; (ii) do not suffer adverse impacts as a result of projects; and (iii) can participate actively in projects that affect them. The term "Indigenous Peoples" is used by the SPS in a generic sense to refer to a distinct, vulnerable, social, and cultural group possessing the following four characteristics in varying degrees:

- (i) self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
- (ii) collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
- (iii) customary, cultural, economic, social, or political institutions that are
- (iv) separate from those of the dominant society and culture; and
- (v) a distinct language, often different from the official language of the country or region.

**Table 7: ADB Safeguard Policy Statement (2009) Indigenous Peoples Safeguard Policy Principles**

No.	Indigenous Peoples Safeguard Policy Principle
1	Screen early on to determine (a) whether Indigenous Peoples are present in, or have collective attachment to, the project area; and (b) whether project impacts on Indigenous Peoples are likely
2	Undertake a culturally appropriate and gender-sensitive social impact assessment or use similar methods to assess potential project impacts, both positive and adverse, on Indigenous Peoples. Give full consideration to options the affected Indigenous Peoples prefer in relation to the provision of project benefits and the design of mitigation measures. Identify social and economic benefits for affected Indigenous Peoples that are culturally appropriate and gender and intergenerationally inclusive and develop measures to avoid, minimize, and/or mitigate adverse impacts on Indigenous Peoples;
3	Undertake meaningful consultations with affected Indigenous Peoples communities and concerned Indigenous Peoples organizations to solicit their participation (a) in designing, implementing, and monitoring measures to avoid adverse impacts or, when avoidance is not possible, to minimize, mitigate, or compensate for such effects; and (b) in tailoring project benefits for affected Indigenous Peoples communities in a culturally appropriate manner. To enhance Indigenous Peoples' active participation, projects affecting them will provide for culturally appropriate and gender inclusive capacity development. Establish a culturally appropriate and gender inclusive grievance mechanism to receive and facilitate resolution of the Indigenous Peoples' concerns.
4	Ascertain the consent of affected Indigenous Peoples communities to the following project activities: (a) commercial development of the cultural resources and knowledge of Indigenous Peoples; (b) physical displacement from traditional or customary lands; and (c) commercial development of natural resources within customary lands under use that would impact the livelihoods or the cultural, ceremonial, or spiritual uses that define the identity and community of Indigenous Peoples. For the purposes of policy application, the consent of affected Indigenous Peoples communities refers to a collective expression by the affected Indigenous Peoples communities, through individuals and/or their recognized representatives, of broad community support for such project activities. Broad community support may exist even if some individuals or groups object to the project activities
5	Avoid, to the maximum extent possible, any restricted access to and physical displacement from protected areas and natural resources. Where avoidance is not possible, ensure that the affected Indigenous Peoples communities participate in the design, implementation, and monitoring and evaluation of management arrangements for such areas and natural resources and that their benefits are equitably shared
6	Prepare an Indigenous Peoples Plan (IPP) that is based on the social impact assessment with the assistance of qualified and experienced experts and that draw on indigenous knowledge and participation by the affected Indigenous Peoples communities. The IPP includes a framework for continued consultation with the affected Indigenous Peoples communities during project implementation; specifies measures to ensure that Indigenous Peoples receive culturally appropriate benefits; identifies measures to avoid, minimize, mitigate, or compensate for any adverse

No.	Indigenous Peoples Safeguard Policy Principle
	project impacts; and includes culturally appropriate grievance procedures, monitoring and evaluation arrangements, and a budget and time-bound actions for implementing the planned measures
7	Disclose a draft IPP, including documentation of the consultation process and the results of the social impact assessment in a timely manner, before project appraisal, in an accessible place and in a form and language(s) understandable to affected Indigenous Peoples communities and other stakeholders. The final IPP and its updates will also be disclosed to the affected Indigenous Peoples communities and other stakeholders
8	Prepare an action plan for legal recognition of customary rights to lands and territories or ancestral domains when the project involves (a) activities that are contingent on establishing legally recognized rights to lands and territories that Indigenous Peoples have traditionally owned or customarily used or occupied, or (b) involuntary acquisition of such lands
9	Monitor implementation of the IPP using qualified and experienced experts; adopt a participatory monitoring approach, wherever possible; and assess whether the IPP's objective and desired outcome have been achieved, taking into account the baseline conditions and the results of IPP monitoring. Disclose monitoring reports

**4. PRC’s laws and regulations:**

46. A unified multi-ethnic country is defined as the fundamental realities of the People’s Republic of China (PRC), which highlights “safeguarding national unification and ethnic unity” as its overarching goal of ethnic minority affairs management and policies. The Common Program adopted by the Chinese People’s Political Consultative Conference (CPPCC) in September 1949 clearly stipulated that “all the ethnic groups within Chinese territory were equal. PRC, as a unified multi-ethnic state, instituted EM Regional Autonomy in areas where EM people lived in compact communities, establishing various levels of regional EM autonomous organs according to the population and scope of these areas. The state takes various measures to guarantee that ethnic minorities can participate equally in the administration of state affairs and autonomously manage their internal affairs.

47. According to China’s Constitution (adopted in 1954, and revised in 1982), Regional Autonomy of Ethnic Minorities (RAEM) is one of the fundamental national policies. The key principles include:

- Principle of ethnic equality and unity;
- Principle of equal opportunities for each ethnic minority to participate in the management of state affairs; and
- Principle of regional autonomy of ethnic minorities.

48. The key guiding principles of managing ethnic affairs in the PRC include: (i) insisting on socialist system; (ii) insisting on the leadership of the Chinese Communist Party (CCP); and (iii) insisting on the system of regional autonomy of ethnic minorities;” (iv) “safeguarding the unity of all ethnic groups; and (v) national unity is the supreme interest of all ethnic groups”. Thus “equality and unity” are on the priority of PRC’s EM policies which are further elaborated as:

- Policy of speeding up economic development in ethnic minority areas



- Favorable policy for ethnic minority family planning (2-3 children for each couple is permitted for ethnic minority people)
- Policy of developing ethnic minority education
- Policy of respecting and developing ethnic minority languages,
- Policy of respecting ethnic minorities' freedom in religious belief
- Policy of protecting ethnic minorities' cultural heritages
- Policy of respecting ethnic minorities' customs and traditions.

49. The new target of governmental effort in PRC rural development is to improve the living conditions and social safeguards in villages, and is elaborated as: "Five Connections, Eight Haves". Five connections refers to (i) connection of road; (ii) connection of electricity; (iii) connection of water supply; (iv) connection of TV cables; (v) connection of internet and telephone. The Eight haves include: (i) have qualified public space for organized activities; (ii) have qualified clinic and village doctors; (iii) each natural village has comfortable living conditions; (iv) each household has descent creditable house which is anti-seismic; (v) each person has at least one mu stable high yield paddy field or other farming land; (vi) each person has at least one mu cash crop land; (vii) each person has at least one livestock to sell each year; (viii) each member of the labor force has one skill to increase his/her income.

50. Since 2000, a series of national programs have been launched to speed up the overall development of ethnic minority areas. "West Development Program", "Vitalizing Border Areas and Enriching the People Living There", "Supporting Smaller Ethnic Minorities", "the Reconstruction of Villages with Outstanding Ethnic Cultural Features", "Poverty Alleviation Focusing on Contiguous Poor Areas", "Water Cellar for Mothers" and many other local-level programs have had significant impact on the rural living conditions and socioeconomic development for both ethnic minority villages, Han villages and the mixed villages

51. The key ADB SPS requirements which are relevant in this project due to the differences between ADB approaches and Chinese strategies include: (i) an early screening be conducted by qualified expert to identify IP in the Project areas and the potential impact on IPs. (ii) social impact assessment is conducted ensure that positive or adverse impacts of the Project are identified and the benefit has to be culturally appropriate and does not create gender differences; (iii) meaningful consultation with various IP organizations and communities is done to make sure people can participate actively in project design and implementation; (iv) an IPP/EMDP is prepared by qualified experts to ensure that positive impact on IPs are maximized and adverse impact is minimized or avoided; (v) project information to be adequately and timely disclosed so that IPs know clearly what the project is going to do in relation to their property and life; (vi) impact during and after the Project implementation is monitored both internally and externally, and (vii) proper grievance redress system is established so that the general goal of the project, the positive impacts on IP are realized and adverse impacts are mitigated or avoided.

## **B. Criteria for Selection of Subproject Components**

52. BOCOM has taken a policy decision that only category 'C' subproject components both for involuntary resettlement and ethnic minority will be financed through ADB line of credit by BOCOM. No category A or B subproject component will be financed with ADB line of credit. A selection and screening criteria will be established at BOCOM to ensure that there is (i) no physical or economic displacement, and (ii) proportional representation of subproject component borrowers or employees under the financed subproject component among ethnic minorities.

53. The subproject components to be financed by BOCOM **will only support** activities which:

- (i) have no adverse impacts on land, structure, livelihoods of any title or non-title holders in subproject component area;
- (ii) any land acquired not in anticipation of ADB finance and has a history of land acquisition of past 5 years or more;
- (iii) do not result in changes to land ownership (e.g. from village land to other categories) or official land use category (e.g. from agricultural to other land use);
- (iv) demonstrate compliance with the project ethnic minority and/or social and gender targets; and
- (v) in compliance with relevant domestic occupational health and safety standards.

54. BOCOM **will not finance** any subproject component which:

- (i) are listed in the ADB prohibited investment activity list (see Appendix 1);
- (ii) involve land acquisition;
- (iii) involve demolition of residential or private commercial buildings;
- (iv) involve involuntary resettlement, and which meet the definition of ADB “Category A” or “Category B” for resettlement; and
- (v) have significant direct or indirect negative impacts on vulnerable ethnic minorities (“Category A” and “Category B”).

### **C. Operationalization of SMS within the Subproject Cycle**

55. The SMS will become effective prior to ADB's first disbursement for the financing of subprojects. For any subproject component holding agency who wants to apply for a sub-loan, BOCOM will orient the subproject component borrower on SMS implementation procedures and checklists filling and categorization, and others if necessary, to ensure the sub-loan is eligible to the subproject. Furthermore, on-site due diligence will be undertaken by BOCOM and the subproject component borrower to reconfirm the categorization. After the due diligence conducted by BOCOM, it will decide if the sub-loan application is acceptable and eligible. BOCOM will submit a list of all subproject components to ADB for no-objection, using a pre-agreed format.<sup>4</sup>

56. BOCOM will follow the four steps for Screening; Categorization; Assessment and Monitoring and Reporting as shown below. The first 3 steps from Steps A to C will be conducted as part of the due diligence before a sub-loan is approved by BOCOM. Step D will be conducted during implementation of the subproject component. All steps are conducted by the BOCOM working with the subproject component borrower. Information disclosure, public consultation, and participation of affected persons, are key requirements under PRC laws and the ADB SPS (2009). Information disclosure and public consultation are included under Step C.

---

<sup>4</sup> ADB will conduct detailed review of the first batch of subproject components submitted by BOCOM to ensure that BOCOM has adequate capability in selecting and evaluation right subproject components.

## **STEP A: Screen to Identify Potential Impacts<sup>5</sup>**

### **First filter – Compliance with national and international laws and regulations**

- A.1. Does the sub-loan application include any activities prohibited under PRC laws?
- A.2. Does the sub-loan application include any activities on the ADB prohibited investment activity list (Appendix 1)?
- A.3. Does the subproject component borrower have existing or pending lawsuits for violation of PRC laws related to environment or land?
- A.4. Do the relevant domestic occupational health and safety standards apply?
- A.5. If any of the above does not meet the compliance: reject the application, or, invite the subproject component borrower to re-apply after the application has been re-designed to meet compliance.
- A.6. If the answer is 'No' to all of the above, continue with the next steps.

### **Second filter – Social screening**

- A.7. Meet with the sub-loan applicant and conduct a site visit.
- A.8. Complete Worksheets 1 - 4 in Appendix 3 (land acquisition and resettlement, ethnic minorities and land use right transfer impact).
- A.9. Document all applications, whether they pass Step A or not. Include them in the progress reports to the BOCOM.

## **STEP B: Categorize the Level of Potential Impacts**

- B.1. Use the information in Step A to identify the level of potential social impacts and the resultant 'impact category' of the subproject component, according to ADB and PRC criteria.

### **Categorization – Involuntary Resettlement**

- B.2. ADB applies three impact categories to projects: A, B, or C. Screening and categorization standards are defined in Worksheets 2 and 3 in Appendix 3<sup>6</sup>. Use these worksheets to assess the subproject component category as A, B, or C.
- B.3. Reject all sub-loan applications for sub-projects which are Category A or B. These include those which cause physical displacement and/or economic displacement/losses which result from involuntary acquisition of land or involuntary restriction of land use.

<sup>5</sup> Do not proceed to next step until last step is fully completed.

<sup>6</sup> See also: <http://www.adb.org/site/safeguards/safeguard-categories>.

### **Categorization – Indigenous Peoples (Ethnic Minorities)**

- B.4. ADB applies three impact categories to projects: A, B, or C. Screening and categorization standards are defined in Worksheet 4 in Appendix 3.<sup>7</sup> Use these worksheets to assess the subproject component category as A, B, or C. Reject all applications for subproject component loans which are Category A and B.

### **Categorization – Land Use Rights Transfer<sup>8</sup> issues**

- B.5. Any subproject component that involves land with an existing or proposed land use rights transfer agreement will be reviewed by the BOCOM and checked with township agricultural station. Use Worksheet 4 in Appendix 3 to determine whether there are any issues or pending disputes. If the answer is “Yes”, reject the application.
- B.6. Document all applications, whether they pass Step B or not. Include them in the progress reports to BOCOM.

## **STEP C: Sub-loan Approval**

### **Information Disclosure and Public Consultation and Participation**

- C.1. If the subproject component borrower is applying for an identified subproject component, regardless of impact category, check with the subproject component borrower if they have publicized the proposed subproject component within the project area.
- C.2. If the answer is “No”, then inform the subproject component borrower that he or she must:
- publicize the basic subproject component details – location, activities, potential impacts, contact details for the subproject component borrower and BOCOM personnel responsible for safeguards;
  - publicize these details for at least 10 days to enable the general public sufficient time to submit any verbal or written comments;
  - use disclosure materials and media which local communities, near the project area, can access e.g. signboard or poster in the village, website.
  - At the end of the disclosure period, summarize any public comments received (by the BOCOM and/or sub-borrower)
- C.3. For the sub-loan contract with the subproject component borrower, prepare a Safeguard Commitment Letter, which lists all measures to be implemented by the subproject component borrower for mitigation, monitoring and reporting as relevant.<sup>9</sup>

## **STEP D: MONITORING AND REPORTING**

- D.1. Monitor whether the subproject component borrower is implementing the measures in the Safeguards Commitment Letter.

<sup>7</sup> See also: <http://www.adb.org/site/safeguards/safeguard-categories>.

<sup>8</sup> Land use rights transfer. Leasing or renting land use rights without any change in the land ownership and/or the land purpose.

<sup>9</sup> Environmental impact mitigation measures are found in the EMP under the EMS. Social actions for inclusion as loan conditions are identified in Step B (paragraphs B.5–D.8).

D.2. Develop and maintain an internal recording system for the results of Steps A - D for each sub-loan application and approved subproject component.

D.3. BOCOM will submit the annual progress report to ADB.

57. **SMS Information Dissemination.** The ESMS will be made available on the BOCOM website for the purpose of sharing and receiving any comments or suggestions on the same. The social aspects of ESMS will be reviewed every year, especially after the results of annual social audit. Based on the experience gained, the SMS will be appropriately reviewed and updated.

#### IV. ORGANIZATIONAL STRUCTURE AND STAFFING FOR IMPLEMENTATION

58. BOCOM shall establish an Environmental and Social Unit (ESU) within its Credit Granting Department (授信部) or the Small Enterprise Finance Department (小企业金融部) for the implementation of all actions described in this ESMS. The ESU shall be staffed with one full time safeguards manager, at least one environment, health and safety (EHS) officer and at least one social assessment specialist. The safeguards manager shall have required qualifications and at least 10 years of experience in the implementation of environmental and/or social safeguards, corporate environmental policies and environmental management system, and conducting and reviewing social assessments. Familiarity with PRC and ADB regulations and procedures will be an essential requirement. The EHS officer and social assessment specialists shall have a Master's degree in relevant fields with at least five years of experience in the preparation of environmental impact assessment and social safeguard documents respectively, and in conducting audits for compliance with applicable environmental and social safeguard regulations and requirements.

59. Key tasks of ESU will comprise of:

- (i) Screening all sub-loan applications for subproject components seeking ADB finance
- (ii) Determining environment, resettlement and indigenous people categorization for subproject components
- (iii) Ensuring the rejection of subproject components with investment activities on ADB's prohibited investment activities list, that are environment category A, or with scope of involuntary resettlement and land acquisition for ADB finance as described in this ESMS
- (iv) Auditing the timely and effective implementation of the safeguard components as per Safeguard Commitment Letter and EIR or EIT for environmental safeguards during sub-sub-loan implementation of subproject 4 components.
- (v) Formulating and implementing corrective actions for non-compliance with safeguard requirements
- (vi) Updating the ESMS if needed
- (vii) Undertaking assessment on training needs, and developing and implementing training programs on environmental and social safeguards for relevant BOCOM departments and divisions, as well as for subproject component borrowers. Suitable experts shall be identified for providing training, as and when required.
- (viii) Monitoring of contractors performance and implementation of site specific EMPs.

60. Table 8 shows the key institutional arrangement and specific roles and responsibilities for this subproject.

**Table 8: Institutional Arrangement and Roles and Responsibilities**

No.	Institution	Roles and Responsibilities
1	BOCOM	<ul style="list-style-type: none"> <li>• Implement the ESMS</li> <li>• Integrate the ESMS into BOCOM business model</li> <li>• Establish an ESU with adequate staffing to ensure effective ESMS implementation</li> <li>• Appoint specialist to undertake a safeguards training needs assessment and implement safeguards training program.</li> <li>• Screen subproject components to ensure that they are eligible to receive ADB funds</li> <li>• Monitor, audit and report compliance with safeguard conditions of each subproject component that receives financing</li> <li>• Submit annual ESMS performance reports to ADB</li> </ul>

No.	Institution	Roles and Responsibilities
		<ul style="list-style-type: none"> <li>• Update ESMS, if required</li> <li>• Implement safeguard corrective action plans, if required.</li> <li>• Prepare completion report for ADB</li> </ul>
2	Subproject component borrower	<ul style="list-style-type: none"> <li>• Sign safeguard commitment letter</li> <li>• Work with BOCOM to complete the screening, categorization and design of subproject component</li> <li>• Provide BOCOM with access to subproject component design and sites</li> <li>• Implement environmental and social safeguard requirements as part of the subproject component.</li> <li>• Identify and manage subproject component entry points into the GRM</li> </ul>
3	GPMO	<ul style="list-style-type: none"> <li>• Manage program GRM</li> <li>• Co-ordinate with BOCOM on implementation, GRM and reporting issues, as needed.</li> </ul>
4	GPMO Program Environment Specialist	<ul style="list-style-type: none"> <li>• Undertake review of first two subproject components for each sector classified as Category B to confirm screening is appropriate.</li> <li>• Undertake quarterly reviews of the list of subproject components proposed for financing and carry out spot checks of environment safeguard documentation to ensure requirements are being met.</li> <li>• Identify if there is any additional need for prior review and capacity building support based on performance of ESU.</li> <li>• Report environmental performance issues to GPMO.</li> </ul>
5	GPMO Program Social Development Specialist	<ul style="list-style-type: none"> <li>• Undertake review of first two subproject components for each sector to confirm screening is appropriate.</li> <li>• Undertake quarterly review of the list of subproject subcomponents proposed for financing and carry out spot checks of IR and IP safeguard documentation to ensure requirements are being met.</li> <li>• Identify if there is any additional need for prior review and capacity building support based on performance of ESU.</li> <li>• Report social performance issues to GPMO.</li> </ul>
6	ADB	<ul style="list-style-type: none"> <li>• Oversee and provide guidance on subproject component screening and categorization, and implementation of ESMS</li> <li>• Request for corrective action plan if requirements are not met</li> <li>• Conduct missions to review subproject progress and effectiveness of ESMS implementation</li> </ul>
7	Contractor	<ul style="list-style-type: none"> <li>• Implement subproject component in line with EIR/EIT and EMP</li> <li>• Develop and implement site specific EMPs, as needed.</li> </ul>

## V. CAPACITY BUILDING AND TRAINING

61. The PMC services include program safeguards specialists to support the implementation of all subprojects under Tranche 1. These specialists will support BOCOM with establishing the ESU and integrating ESMS in BOCOM business process and carry out initial in-house training for ESU and other key staff.

62. BOCOM shall undertake a training needs assessment (TNA) in collaboration with PMC consultant to understand the training needs of relevant BOCOM staff in environment and social safeguards. BOCOM will engage a national expert to undertake the TNA at the organization level facilitated by the PMC consultant to come up with a specific and time-bound training plan.

This TNA will focus on assessing the subject knowledge and skills to review subprojects on social safeguard aspects, monitoring and documentation and Management Information System (MIS). TNA will be undertaken for all category of staff related to safeguard management. Based on the TNA, a comprehensive training program shall be designed and implemented, aimed at enhancing the capacity of relevant departments and divisions. Suitable experts (national and international) shall be identified for providing these trainings, as and when required. BOCOM will update ADB on these capacity building activities and ensuing results in the annual ESMS performance report.

63. The capacity of concessionaires to carry out the associated design, planning, approval and implementation work, in accordance with ESMS, largely depends on their capacity, skills and understanding of the safeguard issues. Hence, it is important for BOCOM to build the capacity of various concessionaires. The training program shall include:

- (i) Orientation program on the ESMS
- (ii) How to undertake environment and social impact assessment
- (iii) How to categorize subproject components
- (iv) Safeguards as integral part of project management

## **VI. ESMS MONITORING AND REPORTING**

64. **Monitoring.** Before approval of the lending, BOCOM and subproject component borrower shall sign a safeguard commitment letter, to ensure subproject component borrower will adopt the ESMS, and will apply the mitigation measures as set out in the ESMS. Monitoring will be undertaken at three levels: The first level monitoring will comprise of internal monitoring at subproject component borrower level to ensure compliance with ESMS. The subproject component borrower will submit these findings in form of a quarterly monitoring report to BOCOM's ESU. Second level monitoring will be undertaken by BOCOM of all its subproject component borrowers on a semi-annual basis to ensure that the subproject component borrowers are in compliance with the ESMS. This monitoring will be undertaken by the ESU. The third level monitoring will be conducted by GPMSO safeguard specialists and ADB. GPMSO safeguard specialist will undertake quarterly spotchecks. ADB will undertake missions (at least once a year) to review ESMS implementation.

65. For environment Category B projects, the first two subproject components for each sector will be subject to prior review. Unless issues are identified during the prior review, subsequent subproject components will be subject to post review via the annual ESMS performance report

66. **Reporting.** The subproject component borrowers will submit quarterly monitoring reports to BOCOM. BOCOM shall submit annual ESMS performance monitoring reports on ESMS compliance for all subproject components to ADB. In case any compliance issues are identified at subproject component borrower level, BOCOM will develop a time bound corrective action plan to rectify it and shall also report to ADB. In case a subproject component borrower wants to change the scope and categorization of a subproject component, then this also needs to be approved by BOCOM and ADB.

## **VII. GRIEVANCE REDRESS MECHANISM**

67. **Grievance Redress Mechanism.** BOCOM shall operate within the framework of the MFF program specific grievance redress mechanism (GRM) under the Guangxi Foreign Loans

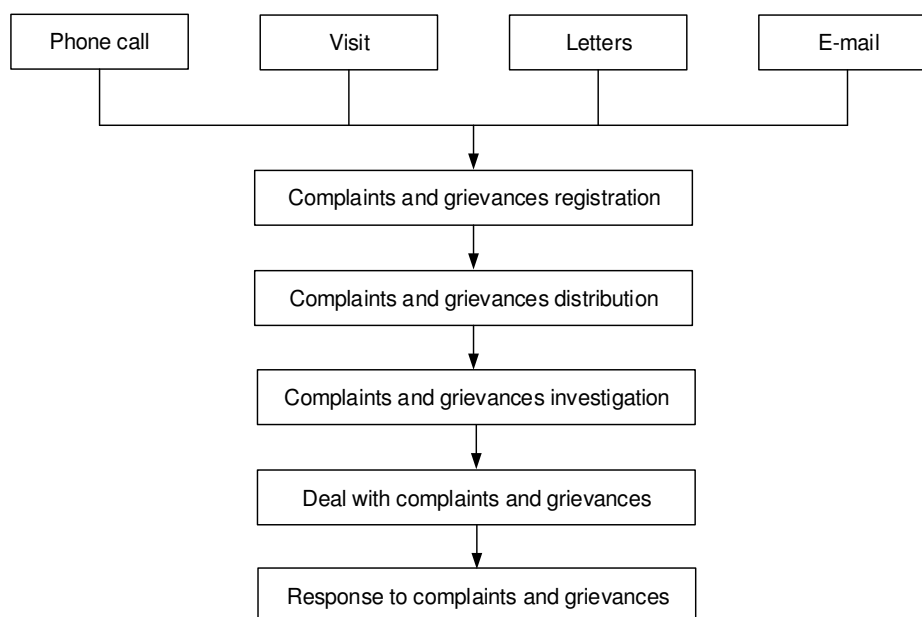


Project Management Office (GPMO). The program GRM has been established to receive and manage any public concerns or issues which may arise due to the Tranche 1 subprojects. The GRM comprises: (i) a set of clear procedures developed by GPMO to receive, record, address and report any concerns which are raised; (ii) specific contact details for individuals at the GPMO, PIEs and the contractors, and (iii) the local EPBs. The GPMO complaint hotline number for the program shall be advertised on BOCOM web site as well as posted on construction sites during construction of subproject 4 component projects funded by ADB. The program GRM is included in Appendix 4.

68. In addition to the program GRM, BOCOM will develop formal web-based platform to provide a systematic, transparent, and timely process for receiving, evaluating, and addressing affected peoples subproject-related complaints and grievances. The program and existing BOCOM GRM will be open to all subproject affected people, regardless of the nature of their complaint and would be gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution.

69. Once the subproject becomes effective, BOCOM will provide details of GRM system to all subproject component borrowers and affected people. BOCOM can receive oral or written complaints through a 24-hour hotline, or letter or email. The GRM procedures for complaints related to social issues are represented in Figure 1 below.

**Figure 1: Grievance Redress Mechanism for ESMS**



## APPENDIX 1: ASIAN DEVELOPMENT BANK PROHIBITED INVESTMENT ACTIVITIES LIST

The following do not qualify for Asian Development Bank (ADB) financing:<sup>1</sup>

- (i) production or activities involving harmful or exploitative forms of forced labor<sup>2</sup> or child labor;<sup>3</sup>
- (ii) production of or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements or subject to international phaseouts or bans, such as (a) pharmaceuticals,<sup>4</sup> pesticides,<sup>5</sup> and herbicides,<sup>5</sup> (b) ozone-depleting substances,<sup>6</sup> (c) polychlorinated biphenyls<sup>7</sup> and other hazardous chemicals,<sup>8</sup> (d) wildlife or wildlife products regulated under the Convention on International Trade in Endangered Species of Wild Fauna and Flora,<sup>9</sup> and (e) transboundary trade in waste or waste products;<sup>10</sup>
- (iii) production of or trade in weapons and munitions, including paramilitary materials;
- (iv) production of or trade in alcoholic beverages, excluding beer and wine;<sup>11</sup>
- (v) production of or trade in tobacco;
- (vi) gambling, casinos, and equivalent enterprises;
- (vii) production of or trade in radioactive materials,<sup>12</sup> including nuclear reactors and components thereof;
- (viii) production of, trade in, or use of unbonded asbestos fibers;<sup>13</sup>
- (ix) commercial logging operations or the purchase of logging equipment for use in primary tropical moist forests or old-growth forests; and
- (x) marine and coastal fishing practices, such as large-scale pelagic drift net fishing and fine mesh net fishing, harmful to vulnerable and protected species in large numbers and damaging to marine biodiversity and habitats.

<sup>1</sup> ADB. 2009. *Safeguard Policy Statement*. Manila.

<sup>2</sup> Forced labor means all work or services not voluntarily performed, that is, extracted from individuals under threat of force or penalty.

<sup>3</sup> Child labor means the employment of children whose age is below the host country's statutory minimum age of employment or employment of children in contravention of International Labor Organization Convention No. 138 "Minimum Age Convention." [www.ilo.org](http://www.ilo.org).

<sup>4</sup> A list of pharmaceutical products subject to phaseouts or bans is available at <http://www.who.int>.

<sup>5</sup> A list of pesticides and herbicides subject to phaseouts or bans is available at <http://www.pic.int>.

<sup>6</sup> A list of the chemical compounds that react with and deplete stratospheric ozone resulting in the widely publicized ozone holes is listed in the Montreal Protocol, together with target reduction and phaseout dates. Information is available at <http://www.unep.org/ozone/montreal.shtml>.

<sup>7</sup> A group of highly toxic chemicals, polychlorinated biphenyls are likely to be found in oil-filled electrical transformers, capacitors, and switchgear dating from 1950 to 1985.

<sup>8</sup> A list of hazardous chemicals is available at <http://www.pic.int>.

<sup>9</sup> A list is available at <http://www.cites.org>.

<sup>10</sup> As defined by the Basel Convention; see <http://www.basel.int>.

<sup>11</sup> This does not apply to project sponsors who are not substantially involved in these activities. Not substantially involved means that the activity concerned is ancillary to a project sponsor's primary operations.

<sup>12</sup> This does not apply to the purchase of medical equipment, quality control (measurement) equipment, and any equipment for which Asian Development Bank considers the radioactive source to be trivial and adequately shielded.

<sup>13</sup> This does not apply to the purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.

## APPENDIX 2: RAPID ENVIRONMENTAL ASSESSMENT CHECKLIST

### Instructions:

- (i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES), for endorsement by Director, RSES and for approval by the Chief Compliance Officer.
- (ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.
- (iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

Sector Division:

Screening Questions	Yes	No	Remarks
<b>Part I: Buildings</b>			
<b>A. Project Siting</b> Is the project area adjacent to or within any of the following areas:			
▪ Underground utilities			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
▪ Bay			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ Encroachment on historical/cultural areas?			
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?			

Screening Questions	Yes	No	Remarks
▪ Dislocation or involuntary resettlement of people?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?			
▪ Increased noise and air pollution resulting from increased traffic volume?			
▪ Occupational and community health and safety risks?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ Generation of dust in sensitive areas during construction?			
▪ Requirements for disposal of fill, excavation, and/or spoil materials?			
▪ Noise and vibration due to blasting and other civil works?			
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?			
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?			
▪ Risks to community health and safety caused by management and disposal of waste?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
<b>Part II: Roads and Highways</b>			
<b>A. Project Siting</b>			
Is the project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			

Screening Questions	Yes	No	Remarks
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?			
▪ encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?			
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?			
▪ increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation during project construction and operation?			
▪ noise and vibration due to blasting and other civil works?			
▪ dislocation or involuntary resettlement of people?			
▪ dislocation and compulsory resettlement of people living in right-of-way?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?			
▪ hazardous driving conditions where construction interferes with pre-existing roads?			
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS)			

Screening Questions	Yes	No	Remarks
from workers to local populations?			
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?			
▪ accident risks associated with increased vehicular traffic, leading to accidental spills of toxic materials?			
▪ increased noise and air pollution resulting from traffic volume?			
▪ increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicles using the road?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.			
<b>Part III: Water Supply</b>			
<b>A. Project Siting</b>			
Is the project area...			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			

Screening Questions	Yes	No	Remarks
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ pollution of raw water supply from upstream wastewater discharge from communities, industries, agriculture, and soil erosion runoff?			
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ hazard of land subsidence caused by excessive ground water pumping?			
▪ social conflicts arising from displacement of communities ?			
▪ conflicts in abstraction of raw water for water supply with other beneficial water uses for surface and ground waters?			
▪ unsatisfactory raw water supply (e.g. excessive pathogens or mineral constituents)?			
▪ delivery of unsafe water to distribution system?			
▪ inadequate protection of intake works or wells, leading to pollution of water supply?			
▪ over pumping of ground water, leading to salinization and ground subsidence?			
▪ excessive algal growth in storage reservoir?			
▪ increase in production of sewage beyond capabilities of community facilities?			
▪ inadequate disposal of sludge from water treatment plants?			
▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances and protect facilities?			
▪ impairments associated with transmission lines and access roads?			
▪ health hazards arising from inadequate design of facilities for receiving, storing, and handling of chlorine and other hazardous chemicals.			
▪ health and safety hazards to workers from handling and management of chlorine used for disinfection, other contaminants, and biological and physical hazards during project construction and operation?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			

Screening Questions	Yes	No	Remarks
▪ noise and dust from construction activities?			
▪ increased road traffic due to interference of construction activities?			
▪ continuing soil erosion/silt runoff from construction operations?			
▪ delivery of unsafe water due to poor O&M treatment processes (especially mud accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
▪ delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals?			
▪ accidental leakage of chlorine gas?			
▪ excessive abstraction of water affecting downstream water users?			
▪ competing uses of water?			
▪ increased sewage flow due to increased water supply			
▪ increased volume of sullage (wastewater from cooking and washing) and sludge from wastewater treatment plant			
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ social conflicts if workers from other regions or countries are hired?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
<b>Part IV: Wastewater Treatment</b>			
<b>A. Project Siting</b>			
Is the project area...			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			



Screening Questions	Yes	No	Remarks
• Protected Area			
• Wetland			
• Mangrove			
• Estuarine			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
<b>B. Potential Environmental Impacts</b> Will the Project cause...			
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ interference with other utilities and blocking of access to buildings; nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.?			
▪ dislocation or involuntary resettlement of people?			
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?			
▪ overflows and flooding of neighboring properties with raw sewage?			
▪ environmental pollution due to inadequate sludge disposal or industrial waste discharges illegally disposed in sewers?			
▪ noise and vibration due to blasting and other civil works?			
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?			
▪ discharge of hazardous materials into sewers, resulting in damage to sewer system and danger to workers?			
▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances, and protect facilities?			
▪ road blocking and temporary flooding due to land excavation during the rainy season?			
▪ noise and dust from construction activities?			

Screening Questions	Yes	No	Remarks
▪ traffic disturbances due to construction material transport and wastes?			
▪ temporary silt runoff due to construction?			
▪ hazards to public health due to overflow flooding, and groundwater pollution due to failure of sewerage system?			
▪ deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water?			
▪ contamination of surface and ground waters due to sludge disposal on land?			
▪ health and safety hazards to workers from toxic gases and hazardous materials which maybe contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?			
▪ large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?			
▪ social conflicts between construction workers from other areas and community workers?			
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
<b>Part V: Other Project Types</b>			
<b>A. Project Siting</b> Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site			
▪ Legally protected Area (core zone or buffer zone)			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Special area for protecting biodiversity			
<b>C. Potential Environmental Impacts</b> Will the Project cause...			
▪ impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural resources?			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> <li>▪ disturbance to precious ecology (e.g. sensitive or protected areas)?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ increased air pollution due to project construction and operation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ noise and vibration due to project construction or operation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ involuntary resettlement of people? (physical displacement and/or economic displacement)</li> </ul>			
<ul style="list-style-type: none"> <li>▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ social conflicts if workers from other regions or countries are hired?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?</li> </ul>			
<ul style="list-style-type: none"> <li>▪ generation of solid waste and/or hazardous waste?</li> </ul>			

Screening Questions	Yes	No	Remarks
▪ use of chemicals?			
▪ generation of wastewater during construction or operation?			
<b>Part II: Buildings</b>			
<b>A. Project Siting</b>			
Is the project area adjacent to or within any of the following areas:			
▪ Underground utilities			
▪ Cultural heritage site			
▪ Protected Area			
▪ Wetland			
▪ Mangrove			
▪ Estuarine			
▪ Buffer zone of protected area			
▪ Special area for protecting biodiversity			
▪ Bay			
<b>B. Potential Environmental Impacts</b>			
Will the Project cause...			
▪ Encroachment on historical/cultural areas?			
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?			
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?			
▪ Dislocation or involuntary resettlement of people?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?			
▪ Increased noise and air pollution resulting from increased traffic volume?			
▪ Occupational and community health and safety risks?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ Generation of dust in sensitive areas during construction?			

Screening Questions	Yes	No	Remarks
▪ Requirements for disposal of fill, excavation, and/or spoil materials?			
▪ Noise and vibration due to blasting and other civil works?			
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?			
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation?			
▪ Risks to community health and safety caused by management and disposal of waste?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

**APPENDIX 3: SOCIAL SAFEGUARD SYSTEM WORKBOOK FOR SCREENING AND  
CATEGORIZING SUBPROJECT COMPONENTS**

**This workbook comprises three worksheets. The worksheets are to be filled out by borrower, with support from BOCOM's ESU safeguards manager.**

Each sub-loan is recorded in a separate workbook. Complete the details below.

<b>Name of SME</b>			
<b>Gender</b>	<input type="checkbox"/> Male	<input type="checkbox"/> Female	
<b>Nationality</b>			
<b>Information on the proposed sub-project</b>			
<b>Sub-loan amount</b>			
<b>Subproject name</b>			
<b>Sub-loan purpose</b>	<input type="checkbox"/> Civil works; <input type="checkbox"/> Goods; <input type="checkbox"/> Materials; <input type="checkbox"/> Others, please specify		
<b>Proposed sub-project activity</b>			
<b>Project location</b>	Municipality:	County:	
	Town/Township:	Village:	
Sub-project land Area			
No. of employee			
No. of female employee			
No. of ethnic minority employee			
<b>Environment Category</b>	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C
<b>Involuntary Resettlement Category</b>	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C
<b>Indigenous Peoples Category</b>	<input type="checkbox"/> A	<input type="checkbox"/> B	<input type="checkbox"/> C
<b>Land Use Right Transfer Impact</b>	<input type="checkbox"/> Agreement is in place and acceptable (in accordance with domestic laws and regulations); <input type="checkbox"/> Agreement requires further due diligence; <input type="checkbox"/> Agreement requires resolution of outstanding issues; <input type="checkbox"/> Agreement is not acceptable (not in accordance with domestic laws and regulations).		
<b>Notes:</b>			

**Prepared by:**

**Date for preparation:**

**Approved by:**

**Date for Approval:**

## WORKSHEET 2. Land Acquisition and Involuntary Resettlement Impact Screening Checklist

Probable Involuntary Resettlement Effects	Yes	No	Not Applicable	Remarks
<b>Involuntary Acquisition of Land</b>				
Will there be land acquisition for this sub-project?*				
Will there be loss of land use rights due to change in land use resulting from the sub-project (e.g., expanded village road)?				
Has the land for the sub-project been acquired in the past 5 years?**. If so, provide results of due diligence in the "Notes" section				
Will there be residential house demolition causing loss of shelter to people due to land acquisition or construction activities?				
Will there be any temporary occupation of land that affects the land, housing, assets or livelihoods/business of people?				

\* Check if there will be land acquisition per local development planning (especially urban development planning).

\*\*If "yes", due diligence is required to determine if the sub-project should be excluded e.g. if there are outstanding land acquisition and/or resettlement issues. If there is temporary land occupation with insignificant impact, a "due diligence" assessment shall be prepared.

### Overall conclusion on Involuntary Resettlement Category:

A       B       C

**WORKSHEET 3. Ethnic Minorities Impact Checklist**

**Will sub-project involve any ethnic minorities? (Y/N) If yes, complete form. If no, leave blank.**

<b>KEY CONCERNS</b> (Please provide elaborations on the Remarks column, if necessary)	<b>Yes</b>	<b>No</b>	<b>Not Applicable</b>	<b>Remarks</b>
<b>Ethnic Minorities Identification</b>				
1. Are there “minorities” (ethnic or national minorities) communities or groups in the project area? If, yes, specify which groups?				Group:
2. If yes to question 1, will such minorities be adversely affected by the proposed microfinance lending? If yes, please explain.				Explanation:
3.a Is the micro-borrower an ethnic minority?				
3.b Does the enterprise employ any ethnic minority workers. If so, state the number and the total number of workers.				Total workers: EM workers:
4. Is there potential to engage more workers?				Total:
4.a If yes to question 4, would they include women or ethnic minority workers? Specify.				Women: EM:
5. Does this enterprise adhere to national labor standards?				

**Overall conclusion on Indigenous Peoples Category:**

**A**       **B**       **C**



**WORKSHEET 4: Land Use Rights Transfer Impact Checklist**

Will sub-project require land use rights transfer or is there a pre-existing land use rights transfer agreement? (Y/N) If yes, complete form. If no, leave form blank.

No.	Types of activity*	Land Area involved	HHs involved	Type of land	Contract starting date	Contract completion date	Rent
	<b>Total</b>						

\*Type of sector. HH=household.

Land use rights transfer agreement	Yes	No	If no, explain
Has the agreement been prepared in accordance with the domestic laws and regulations?			
Has the agreement been endorsed by the Township Agriculture Station or higher authority?			
Has the agreement been signed by all affected households?			
Are there any outstanding issues? If yes, give details in the "Notes" section.			

**Overall conclusion on LURT Agreement**

- Agreement is in place and acceptable (in accordance with domestic laws and regulations)
- Agreement requires further due diligence
- Agreement requires resolution of outstanding issues
- Agreement is not acceptable (not in accordance with domestic laws and regulations)

**Reason for conclusion:**

**Notes:**

## APPENDIX 4: MFF PROGRAM – GRIEVANCE REDRESS MECHANISM

1. A Grievance Redress Mechanism (GRM) will be established as part of this EMP to receive and manage any public concerns or issues which may arise due to the subprojects. The GRM comprises: (i) a set of clear procedures developed by GPMO to receive, record, and address any concerns which are raised; (ii) specific contact details for individuals at the GPMO, PIEs and the contractors, and (iii) the local EPBs.
2. All contractors and work staff will be briefed by the GPMO on the GRM. Contractors and workers will be instructed to be courteous to local residents and, in the event they are approached by the general public with an issue, to immediately halt their work and report the issue to the foreman. The foreman will immediately report the issue to the PIEs or GPMO for action.
3. There are multiple entry points to the GRM, including face-to-face meetings, written complaints, hotline number and telephone conversations, anonymous drop-boxes for written comments, and/or e-mail. All concerns received will be treated confidentially and professionally. The identity of individuals will not be circulated among subproject agencies or staff and will only be shared with senior staff, and then only when there is clear justification. In the construction period and the initial operational period covered by loan covenants, GPMO will report on GRM to ADB, including complaints and their resolution in the quarterly project progress reports and annual environmental monitoring reports up to the project completion report.
4. Basic steps for resolving complaints are as follows and illustrated in Figure EMP-1.

Step 1: For environmental problems during the construction and operational stages, the affected person (AP) can register his/her complaint directly with the contractors or with the GPMO complaint center via its hotline. A joint hotline for resettlement and environment issues will be established within GPMO. Complaints related to land acquisition and resettlement issues will be directed to the GPMO and relevant agencies in accordance with the RP. Contractors are required to set up a complaint hotline and designate a person in charge of handling complaints, and advertise the hotline number at the main entrance to each construction site, together with the hotline number of the GPMO complaint center. The contractors are required to maintain and update a Complaint Register to document all complaints. The contractors are also required to respond to the complainant in writing within 7 calendar days on their proposed solution and how it will be implemented. If the problem is resolved and the complainant is satisfied with the solution, this can be recorded by the GPMO complaint center and follow-up should be carried out during a next project site visit by the EEM. The contractors are required to report complaints received, handled, resolved and unresolved to the GPMO complaint center immediately, and to the IAs and GPMO monthly (through progress reporting).

Step 2: If no appropriate solution can be found during step 1, the contractor has the obligation to forward the complaint to the GPMO complaint center, the PIEs and local EPBs. The PIEs and local EPBs shall immediately notify GPMO upon receiving the complaint. For an oral complaint, proper written records shall be made. Once a complaint is registered and put on file, the GPMO complaints center will immediately notify ADB and others concerned to discuss acceptable solutions. The GPMO complaint center will assess the eligibility of the complaint, identify the solution and provide a clear reply for the complainant within 14 calendar days. The EEM will assist the GPMO

complaint center in addressing the complaint, and follow-up with the AP. The GPMO complaint center will also inform the ADB project team and submit all relevant documents. Meanwhile, the GPMO complaint center will convey the complaint/grievance and suggested solution to the contractors, PIEs, and/or facility operator in a timely manner. The contractors during construction and the facility operator during operation will implement the agreed redress solution and report the outcome to the GPMO complaint center within fifteen (15) working days.

Step 3: In case no solution can be identified by the GPMO complaint center, or the complainant is not satisfied with the proposed solution, the GPMO complaint center will organize, within 14 calendar days, a multi-stakeholder hearing (meeting) involving all relevant stakeholders (including the complainant, PIEs, contractors, facility operator, local EPB, and GPMO). The hearing shall identify a solution acceptable to all, and formulate an action plan.

5. The tracking and documenting of grievance resolutions by GPMO will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s); (ii) regular updating of the GRM database by the GPMO environmental focal point; (iii) processes for informing stakeholders about the status of a case; and (iv) procedures to retrieve data for reporting purposes, including the periodic reports to the ADB.

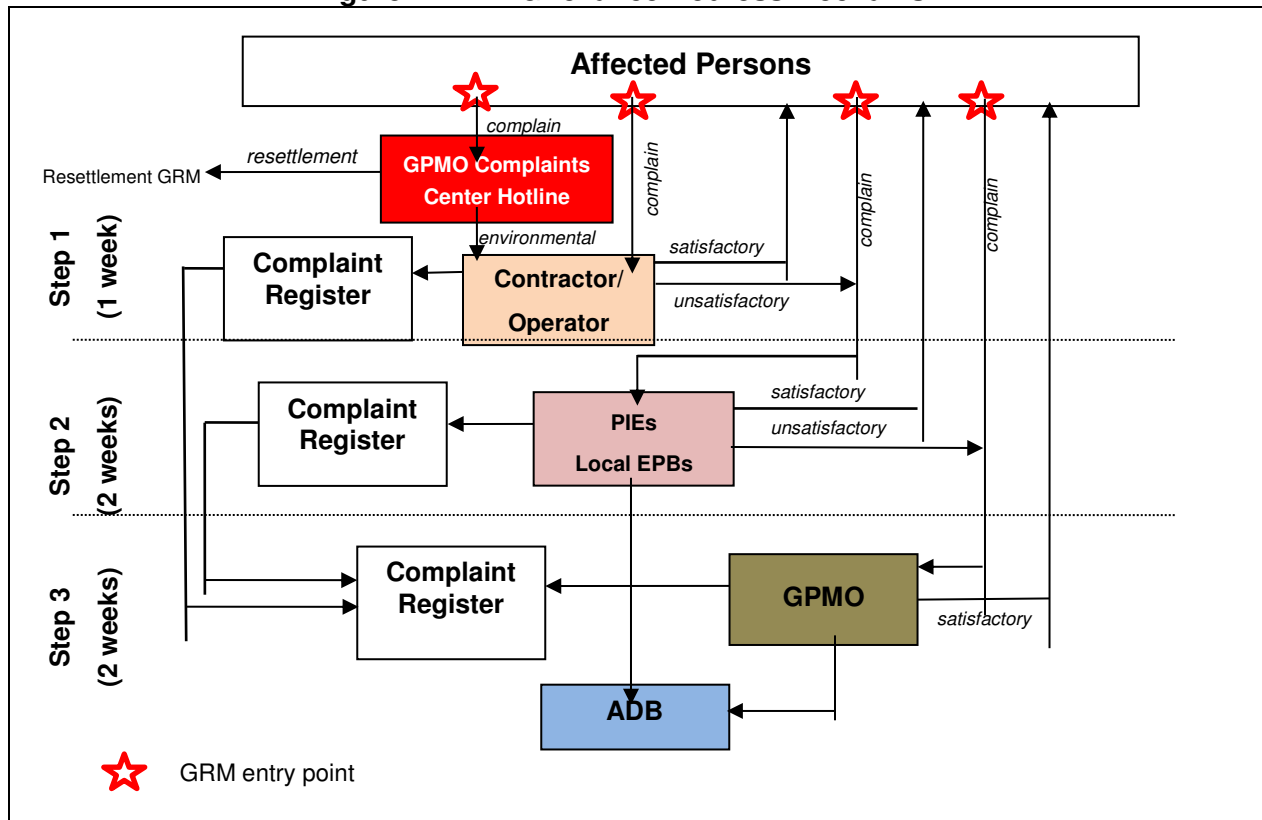
6. At any time, an AP may contact ADB (East Asia Department) directly, including the ADB Resident Mission in the PRC.

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

---

<sup>1</sup> See: <http://compliance.adb.org/>

Figure EMP-1: Grievance Redress Mechanism



## Template for Annual Environmental Monitoring Report

### Guidance on Format and Content for Annual Environmental Monitoring Report

*[The notes in italics are to provide a guide for the content for each section; however, this can be adapted to meet specific Project requirements]*

#### I. INTRODUCTION

##### 1.1 Background

*[Introduction to ADB-Funded Project, overall Project, development context]*

##### 1.2 Description of the Project

*[Brief general Project Summary – Location Map/Plan showing Project components, brief summary of each Project component funded by ADB, Project cost and counterpart funding]*

##### 1.3 Description of the Environment

*[Brief summary of main environmental (physical, biological, socio-economic and cultural heritage) issues, mitigation measures and monitoring requirements as identified in the IEE/EMP, distinguish for each sub-component]*

##### 1.4 Purpose of this Report

*[ADB requirements, loan covenants, time period report covers, previous environmental reports]*

##### 1.5 Report Format

*[Scope of report, identify any missing information/gaps]*

##### 1.6 Report Preparation

*[Who prepared this Report, who else was involve/consulted during preparation, who has reviewed and approved prior to submission to ADB]*

#### II. PROJECT PROGRESS

##### 1.7 Project Implementation Organization

*[Project Organigram identifying roles and responsibilities for Implementation – EA/IA and their Consultants/Contractors and reporting lines]*

##### 1.8 Project Implementation Progress

###### 1.8.1 Overall Project Progress

*[Contract award and engineering works in relation to Project Schedule, projections for next 12 months]*

###### 1.8.2 Project Component Progress

*[Contract award and engineering works for each Project Component in relation to Project Schedule, projections for next 12 months]*

##### 1.9 Updated Implementation Schedule

*[Updated Project Schedule – document any reasons for change]*

#### III. IMPLEMENTATION OF THE EMP and Monitoring Plan

##### 1.10 EMP and Monitoring Plan Objectives

*[Project environmental objectives highlighting protection of any particularly sensitive environmental receptors and value addition components]*

##### 1.11 Roles and Responsibilities for EMP and Monitoring Implementation

*[Appointed and designated environmental management and monitoring staff for each component, term of contracts, allocated person days on site/off-site, roles and responsibilities, lines of communication, reporting structure and frequency (communication flow chart for management of environmental incidents), training and institutional capacity building requirements]*

##### 1.12 Environmental Management and Monitoring Records and Reporting

*[EMP and Monitoring audits carried out and documents and reports that have been produced during the twelve month period that the Environmental Monitoring Report covers]*

## **1.13 EMP and Monitoring Implementation Progress**

### **1.13.1 Project Component xxx**

*[If the Project includes several components, then the following sections should be produced for each component]*

#### **1.13.1.1 Corrective Actions identified during Previous Review**

*[What corrective actions were identified in previous review, what actions have been taken, has compliance been achieved? Any further follow-up?]*

#### **1.13.1.2 Implementation of Mitigation Measures**

*[Key dates, progress of implementation for each environmental mitigation measure, good practice and compliance issues identified during environmental site audits, include photos of good/bad practice from site audits, progress with resolution of compliance issues, reasons for delay in implementation, changes in measures, requirement for additional measures/revision of EMP/Monitoring Plan]*

#### **1.13.1.3 Implementation of Environmental Monitoring Plan**

*[What monitoring has been carried out during 12 month period, include locations, method, review compliance with Monitoring Plan, discussion of monitoring results and compliance with relevant national standards, identify reasons for non-compliance and implications, identify reasons for any delay in implementation, requirement for additional measures/revision of EMP/Monitoring Plan]*

#### **1.13.1.4 Implementation of Environmental Institutional Capacity Building and Training**

##### **1.13.1.4.1 Institutional Requirements**

*[What requirements were set out in the IEE/EMP/Loan Covenants]*

##### **1.13.1.4.2 Implementation Progress**

*[What requirements have been fulfilled during 6 month period, what requirements will be fulfilled in next 6 month period, reasons for any delays in fulfilling requirements, provide details of courses/events/persons attending]*

#### **1.13.1.5 Public Consultation and Disclosure and Grievance Redress Mechanism**

##### **1.13.1.5.1 Public Consultation and Disclosure**

*[Consultation and Disclosure requirements, consultation and disclosure activities during period that report covers]*

##### **1.13.1.5.2 Project Grievance Records and Resolution**

*[Overview of Grievance Redress Mechanism, Detail any complaints, resolution, follow-up]*

## **IV. CONCLUSION AND RECOMMENDATIONS**

### **1.14 Compliance with EMP Requirements**

#### **1.14.1 EMP Implementation**

*[If Project has multiple components, separate review by component]*

*[Review implementation status of each mitigation measure – most applicable method may depend on completion status of Project. For early stages, brief commentary may be enough, during later stages most effective way may be to add two columns to EMP mitigation tables – one for implementation status and one for corrective actions]*

#### **1.14.2 Training and Capacity Building**

*[If Project has multiple components, separate review by component]*

### **1.15 Corrective Actions**

#### **1.15.1 Required Corrective Actions**

*[Corrective actions required to comply with EMP]*

#### **1.15.2 Delivery of Corrective Actions**

*[Agreed course of action to deliver corrective actions, timescales, responsible parties, reporting requirements]*

## **V. APPENDICES**

*[Detailed results of environmental monitoring, environmental training materials, other supporting information that demonstrates compliance with requirements]*

## RISK ASSESSMENT AND RISK MANAGEMENT PLAN

Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
Weak coordination between the governments of the PRC and Viet Nam on border area development	<b>Medium</b>	(i) Institutionalize consultation mechanism between GGZAR and the neighboring Vietnamese border provinces, supported by the ongoing and new ADB regional technical assistance. (ii) Strengthen the bilateral policy and operational coordination under the GMS framework including the relevant sector working groups, Economic Corridor Forum, and Governors' Forum.
Weak institutional and staff capacities to implement the program, particularly for procurement	<b>Medium</b>	(i) Recruit qualified staff and consultants to support the executing agency, implementing agencies, and PIEs. (ii) Provide training on project implementation including procurement, financial management, and safeguards.
Weak capacity of executing agency and financial intermediary in implementing FIL	<b>Medium</b>	(i) Select financial intermediaries carefully based on ADB's <i>Operations Manual</i> <sup>a</sup> and the government's prudential requirements. (ii) Follow best practices for small and medium-sized enterprise lending operations and management. (iii) Allocate special funding to support capacity building for the financial intermediary and hire consultants to support implementation.
Weak capacity of PIEs for internal auditing	<b>Medium</b>	(i) GPMO to share its experience with the PIEs on ADB procedures. (ii) Engage accounting firms to carry out internal audit of PIEs.
Weak financial sustainability of PUCIC	<b>Medium</b>	(i) PUCIC to prepare a financial management road map. (ii) GGZAR to provide adequate support to ensure that the requirements of the road map will be satisfied.
<b>Overall</b>	<b>Medium</b>	

ADB = Asian Development Bank, FIL = financial intermediation loan, GMS = Greater Mekong Subregion, GPMO = Guangxi Foreign Loans Project Management Office, PIE = project implementing entity, PRC = People's Republic of China, PUCIC = Pingxiang Urban Construction and Investment Company, GGZAR = Government of Guangxi Zhuang Autonomous Region.

<sup>a</sup> ADB. 2013. Financial Intermediation Loans. *Operations Manual*. OM D6/BP and D6/OP. Manila.

Sources: Asian Development Bank.

**INDICATIVE PIPELINE OF PROJECTS FOR TRANCHES 2 AND 3  
OF THE INVESTMENT PROGRAM**

1. Tranche 2 of the investment program will be processed from 2017–2018 and will include the following subprojects for which ADB will provide \$200 million:

**(i) Small and Medium-Sized Enterprise (SME) development component**

1. Strengthening SME business development services (BDS) in Guangxi for \$28 million to improve and/or provide comprehensive services to SMEs in Baise, Chongzuo, and Fangchenggang. These include provision of training, human resource, market information, financial and legal advisory services, auditing, project appraisal, and other services.
2. Qinzhou twin park vocational education and training base for \$12.0 million to construct an on-the-job training building, outsourcing service infrastructure facility, an exhibition center, and other auxiliary facilities.

**(ii) Cross-border financial services component**

1. Development of a cross-border financial services center in the Pingxiang border economic zone (BEZ) for \$7.0 million, to build the PRC-ASEAN financial transaction center that will provide currency swap, settlement and payment, and other financial services.

**(iii) Cross-border e-commerce component**

1. Development of a cross-border e-commerce park in Pingxiang BEZ to serve the agriculture trade between the PRC and Viet Nam for \$15.0 million. This covers incubator and related facilitation services, including an information exchange platform, international post and parcel processing system, cross-border trade and logistics information management platform, etc.
2. Development of the Fangchenggang cross-border e-commerce incubation park for \$12.0 million to build infrastructure facilities for research and development, production and operation; develop an integrated ICT and network infrastructure systems; provide training and advisory services related to policy, financing, legal framework and marketing, as well as training of e-commerce operators, including SMEs and individual traders.
3. Development of the PRC-ASEAN agriculture trade facilitation platform in Longbang BEZ, with a total investment cost of \$9.0 million (possibly through a public–private partnership modality), that will include a block train system, quality and sanitary and phytosanitary (SPS) inspection platform, logistics information platform; new cold storage facility; import and export animal and plant quarantine and inspection center, etc.

**(iv) Cross-border connectivity component**



1. Improvement of the Daxin Shuolong-Detian-Renai Road for \$19.0 million, to build an access road connecting the Shuolong border crossing point (BCP), the Detian cross-border waterfall tourism park, and Renai town. The work includes foundation improvement, construction of bridges and tunnels, road surface layers, and transport facilities, etc.
2. Development of cloud computing and big data center in Qinzhou, including an exhibition center and management center, for \$25.0 million.

(v) **BEZ infrastructure and services component**

1. Construction of a comprehensive cargo inspection area in Dongxing BCP Bridge II including customs services, SPS, and auxiliary facilities for \$16.0 million.
2. Road construction in Pingxiang BEZ for \$19.0 million that covers the expansion of road from Kafeng to Nonghuai BCP linking Viet Nam's Coc Nam BCP; and building of a new road from Nonghuai BCP to Puzhai BCP linking Viet Nam's Tan Thanh BCP.
3. Infrastructure development for Longbang BEZ for \$29.0 million to build distribution areas at the cross-border trade bazaar, cross-border tourism zone, regular trade zone, inspection zone, comprehensive services zone and other related functional areas, as well as the construction of a business and administration building.
4. Expansion of the Baise Yuexu border trade service center for \$7.5 million to include the development of storage, parking lot, inspection zone, landscaping, water supply, power supply, and road widening.

(vi) **Project Management**

1. Institutional support for the executing agency (EA) and implementing agencies (IAs), including capacity building and advisory assistance for project management and implementation, and preparation of Tranche 3 projects for \$1.5 million.
2. Tranche 3 of the investment program will be processed in 2018–2019 and will include the following subprojects for which ADB will provide \$120 million:

(i) **Cross-border financial services**

1. Development of the Dongxing BEZ financial service center to provide currency exchange, settlement and payment services for \$15 million.

(ii) **BEZ infrastructure component**

1. Construction of Namushan Avenue in Dongxing BEZ for \$8.0 million to include road, bridge, transport, drainage, lighting, and greening, etc.
2. Dongxing BEZ Integrated Road Network for \$ 35.0 million.

3. Development of a water supply and sewage treatment in Baise Yuexu industrial park for \$10.0 million that will cover the construction of a water supply and wastewater treatment plant.
4. Chongzuo ASEAN food industrial park waste water treatment for \$13 million.

(iii) **Connectivity**

1. Infrastructure improvement for upgrading of Daxin Shuolong BCP for \$22.5 million to comprise of: (i) a BCP service center, (ii) a cargo inspection yard, (iii) bonded warehouses, (iv) an inspection channel, (v) an office building for customs, immigration, inspection and quarantine, border management, etc. (vi) a special smoking and steaming chamber for SPS inspection, (vii) roads within the BCP area, (viii) an open cargo storage yard and parking area, (ix) power and water supply, waste disposal, fences and controlled access for cargo storage yard, (x) fences and front gate for cargo yard, (xi) improvement of access roads to Shuolong BCP and new roads within the BCP area, (xii) other corresponding construction items, and (xiii) construction of an administration building and dormitory for Customs, SPS, and immigration officers in Daxin City.
2. Development of the PRC–ASEAN information harbor cross-border data center for \$15 million that will involve the construction of a big data center, cloud data platform, and related facilities.

(iv) **Project Management Support**

1. Institutional support, capacity building and advisory assistance for the EA and IAs in project management and implementation for \$1.5 million.