Environmental Assessment and Review Framework (Draft)

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_2	–	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_x	–	nitrogen oxides
PIE	–	project implementation entity
PM_{10}	–	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.

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

广西利用国外贷款项目工作领导小组办公室
GUANGXI FOREIGN LOAN PROJECTS MANAGEMENT OFFICE
Add: 18th Floor, Guangxi Development Plaza Est. Building, No.111-1 Minzu Ave., Nanning, Guangxi, China
Tel: +86-771-2328608 Fax: +86-771-2328035 Email: GXPMO@163.com

To: Mr. Yuebin Zhang
Senior Regional Cooperation Specialist
Asian Development Bank
6 ADB Avenue
Mandaluyong City
Metro Manila 1550
Philippines

Date: 26 September 2016

Dear Mr. Zhang,

Subject: P50050-PRC Multitranche Financing Facility Guangxi Regional Cooperation and Integration Promotion Investment Program

A consolidated Initial Environmental Examination (CIEE) and Environmental Management Plan (EMP) covering infrastructure project components have been prepared. These reports were prepared based on available information in domestic environmental impact assessment tables (EITs), feasibility study reports and construction scheme reports prepared for the proposed project roads by local environment and local design institutes as well as site reconnaissance by the project preparation technical assistance (PPTA) consultant.

The approval of the two remaining EITs by Pingxiang Environment Protection Bureau is expected prior to ADB Management Review Meeting.

An environmental assessment and review framework (EARF) has been prepared as part of the Facility Administration Manual to select, categorize and provide guidance on environmental safeguards for subsequent tranches.

Three due diligence reports (DDRs) for Fangchenggang Training Centre for Chinese and Vietnamese Workers and SMEs, Developing of Cross-border Labor Cooperation Demonstration Park in Pingxiang Border Economic Zone and Expansion of Pingxiang Border Trade Service Center have been prepared confirming land acquisition was undertaken by local governments in compliance with national laws and regulation with no pending land and resettlement issues. A social development action plan (SDAP) covering all social risks and mitigation measures is prepared for tranche 1 of the MFF.

A resettlement framework (RF) and Ethnic Minority Development Framework (EMDF) has been prepared as part of the Facility Administration Manual to select, categorize and

provide guidance on involuntary resettlement and Indigenous People safeguards for subsequent tranches.

This is to formally advise you that there is no objection to the CIEE, EMP, EARF, DDRs, RF, EMDF and SGAP documents being posted on the ADB website according to ADB disclosure procedures. We further confirm that we will implement all required actions as set out in the CIEE, EMP, EARF, RF, EMDF and SGAP during project processing and implementation and accept ADB's supervision and inspection of CIEE, EMP, EARF, RF, EMDF and SGAP implementation and disclosure of environmental and social monitoring reports during implementation.

Thank you for your support.

Yours sincerely

Wu Tiancheng
Executive Director
Guangxi Foreign Loan
Projects Management Office

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) Sustainable SME development in border areas achieved. 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 sub-projects in Tranche 2.

(ii) Cost-competitive, safe, and expeditious cross-border financial transactions and investments realized. 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) New technologies such as cross-border e-commerce to facilitate access to markets adopted. 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 social- and trade-related services in BEZs 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) Cross-border connectivity 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 Implementation 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 [1] 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

[1] 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_5 and COD_{Cr} 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) insititutional 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

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.

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.

(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
Part I: Buildings			
A. Project Siting 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. Potential Environmental Impacts 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?			
Part II: Roads and Highways			
A. Project Siting 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. Potential Environmental Impacts 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
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?			
▪ 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.			
Part III: Water Supply			
A. Project Siting Is the project are			
▪ 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			

Screening Questions	Yes	No	Remarks
• Bay			
B. Potential Environmental Impacts 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			

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 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?			
Part IV: Wastewater Treatment			
A. Project Siting 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. Potential Environmental Impacts 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?			
Part V: Other Project Types			
A. Project Siting 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			
C. Potential Environmental Impacts 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?			
Part II: Buildings			
A. Project Siting 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. Potential Environmental Impacts 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[2]. 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 13th Five Year Plan (FYP) for 2016-2020[3], 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 21st Century Maritime Silk Road (the Belt and Road Initiative)[4]. 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

[2] 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.
[3] Government of the People's Republic of China. 2016. The 13th Five Year Plan for National Economic and Social Development.
[4] 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 21st 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[5].

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[6].

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[7]. 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.**

[5] Government of the Guangxi Zhuang Autonomous Region. 2016. Recommendations on implementing the initiative of building Silk Road Economic Belt and 21st Century Maritime Silk Road. Nanning.
[6] Asian Development Bank. 2016. Transforming partnership: People's Republic of China and Asian Development Bank, 2016-2020. Manila.
[7] 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

Laws	
1	*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
2	*Wild Animal Protection Law*, 1988 (amended in 2004) 《中華人民共和國野生動物保護法》2004 修订
3	*Environmental Protection Law*, 1989 (amended in 2014) 《中华人民共和国环境保护法》2014 修订
4	*Soil and Water Conservation Law*, 1991 (amended in 2010) 《中华人民共和国水土保持法》2010 修订
5	*Labor Law*, 1994 《中华人民共和国劳动法》1994
6	*Solid Waste 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
7	*Environmental Noise Pollution Prevention and Control Law*, 1996 《中华人民共和国环境噪声污染防治法》1996
8	*Atmospheric Pollution Prevention and Control Law*, 2000 (amended in 2015) 《中华人民共和国大气污染防治法》2015 修订
9	*Occupational Disease Prevention and Control Law*, 2001 《中华人民共和国职业病防治法》2001
10	*Water Law*, 2002《中华人民共和国水法》2002
11	*Environmental Impact Assessment Law*, 2002 《中华人民共和国环境影响评价法》2002
12	*Cultural Relics Protection Law*, 2002 《**中华人民共和国文物保护法》2002**
Regulations	
13	*Natural Reserve Ordinance*, 1994 《中华人民共和国自然保护区条例》1994
14	*Wild Plant Protection Ordinance* 1996 《中华人民共和国**野生植物保**护条例》1996
15	*Construction Project Environmental Protection Management Ordinance*, 1998 《中华人民共和国建设项目环境保护管理条例》1998
16	*Cultural Relics Protection Law Implementation Ordinance*, 2003 《中华人民共和国文物保护法实施条例》2003
17	*Plan Environmental Impact Assessment Ordinance*, 2009 《中华人民共和国规划环境影响评价条例》2009
Decrees and Announcements	
18	*Circular on Strengthening the Management of Environmental Impact Assessment for Construction Projects Financed by International Financial Organizations*, (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	*Management Measures for Inspection and Acceptance of Environmental Protection at Construction Project Completion* (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	*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]139 号
21	*Management Procedures for the Supervision, Inspection and Environmental Acceptance of Construction Projects under the "Three Simultaneities"* (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	*Management Measures for Operation of the Environmental Complaint Hotline* (MEP Decree [2010] No. 15) 《环保举报热线工作管理办法》环令[2010]15 号
23	*Opinion from the State Council on Important Tasks for Strengthening Environmental Protection* (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	*Measures for Environmental Supervision* (MEP Decree [2012] No. 21) 《环境监察办法》环境保护部令[2012]21 号
25	*Requirement for Preparation of Environmental Impact Report Summary* (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	*Announcement on Stepping Up the Strengthening of Environmental Impact Assessment Management for Prevention of Environmental Risk* (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	*Atmospheric Pollution Prevention and Control Action Plan* (State Council Announcement [2013] No. 37) 《大气污染防治行动计划》国发〔2013〕37 号
28	*Policy on Integrated Techniques for Air Pollution Prevention and Control of Small Particulates* (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	*Guideline on Government Information Disclosure of Construction Project Environmental Impact Assessment (on trial)* (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	*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
31	*Measures for Public Participation in Environmental Protection* (MEP Decree [2015] No. 35) 《环境保护公众参与办法》环令[2015]35 号
32	*Management Measures for Environmental Impact Post Assessment of Construction Projects* (on trial) (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

Guidelines	
33	HJ 2.1-2011 *Technical Guidelines for Environmental Impact Assessment – General Program*《环境影响评价技术导则 总纲》
34	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》
35	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》
36	HJ 2.4-2009 *Technical Guidelines for Noise Impact Assessment*《环境影响评价技术导则 声环境》
37	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》
38	HJ 130-2014 *Technical Guidelines for Plan Environmental Impact Assessment - General Principles*《规划环境影响评价技术导则 总纲》
39	HJ 192-2015 *Technical Criterion for Ecosystem Status Evaluation*《生态环境状况评价技术规范》
40	HJ/T 393-2007 *Technical Specifications for Urban Fugitive Dust Pollution Prevention and Control*《防治城市扬尘污染技术规范》
41	HJ 610-2011 *Technical Guidelines for Environmental Impact Assessment – Groundwater Environment*《环境影响评价技术导则 地下水环境》
42	HJ 616-2011 *Guidelines for Technical Review of Environmental Impact Assessment on Construction Projects*《建设项目环境影响技术评估导则》
43	HJ 623-2011 *Standard for the Assessment of Regional Biodiversity*《区域生物多样性评价标准》
44	HJ 630-2011 *Technical Guideline on Environmental Monitoring Quality Management*《环境监测质量管理技术导则》
45	HJ 663-2013 *Technical Regulation for Ambient Air Quality Assessment* (on trial)《环境空气质量评价技术规范（试行）》
46	HJ 710.1-2014 *Technical Guidelines on Biodiversity Monitoring - Terrestrial Vascular Plants*《生物多样性观测技术导则-陆生维管植物》
47	HJ 710.2-2014 *Technical Guidelines on Biodiversity Monitoring - Lichens and Bryophytes*《生物多样性观测技术导则-地衣和苔藓》
48	HJ 710.3-2014 *Technical Guidelines on Biodiversity Monitoring - Terrestrial Mammals*《生物多样性观测技术导则-陆生哺乳动物》
49	HJ 710.4-2014 *Technical Guidelines on Biodiversity Monitoring - Birds*《生物多样性观测技术导则-鸟类》
50	HJ 710.5-2014 *Technical Guidelines on Biodiversity Monitoring - Reptiles*《生物多样性观测技术导则-爬行动物》
51	HJ 710.6-2014 *Technical Guidelines on Biodiversity Monitoring - Amphibians*《生物多样性观测技术导则-两栖动物》
52	HJ 710.7-2014 *Technical Guidelines on Biodiversity Monitoring - Inland Water Fish*《生物多样性观测技术导则-内陆水域鱼类》
53	HJ 710.8-2014 *Technical Guidelines on Biodiversity Monitoring - Freshwater Benthic Macroinvertebrates*《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 *Technical Guidelines on Biodiversity Monitoring - Butterflies*《生物多样性观测技术导则-蝴蝶》
55	JG/J 146-2004 *Environmental and Hygiene Standards for Construction Sites*《建筑施工现场环境与卫生标准》
56	*Technical Guidelines for Environmental Impact Assessment - Public Participation (public comment version)*, (January 2011)《环境影响评价技术导则 公众参与》(征求意见稿)2011
Standards	
57	GB 3095-2012 *Ambient Air Quality Standards*《环境空气质量标准》
58	GB 3096-2008 *Environmental Quality Standard for Noise*《声环境质量标准》
59	GB 3838-2002 *Environmental Quality Standards for Surface Water*《地表水环境质量标准》
60	GB 8978-1996 *Integrated Wastewater Discharge Standard*《污水综合排放标准》
61	GB 10070-88 *Standard of Environmental Vibration in Urban Area*《城市区域环境振动标准》
62	GB 12523-2011 *Emission Standard of Environmental Noise for Boundary of Construction Site*《建筑施工场界环境噪声排放标准》
63	GB/T 14529-93 *Principle for Categories and Grades of Nature Reserves*《自然保护区类型与级别划分原则》
64	GB 14554-93 *Emission Standards for Odor Pollutants*《恶臭污染物排放标准》
65	GB/T 14848-93 *Quality Standard for Ground Water*《地下水质量标准》
66	GB/T 15190-2014 *Technical Specifications for Regionalizing Environmental Noise Function*《声环境功能区划分技术规范》
67	GB 15618-1995 *Environmental Quality Standard for Soils*《土壤环境质量标准》
68	GB 16297-1996 *Air Pollutant Integrated Emission Standards*《大气污染物综合排放标准》
69	GB 22337-2008 *Emission Standard for Community Noise*《社会生活环境噪声排放标准》
70	GB 50118-2010 *Design Specifications for Noise Insulation of Buildings for Civil Use*《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,[8]" 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

[8] 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	*Ramsar Convention on Wetlands of International Importance Especially as Waterfowl Habitat*	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	*Montreal Protocol on Substances That Deplete the Ozone Layer*	1989.01.01	To protect the ozone layer by controlling emissions of substances that deplete it
3	*Convention on Biological Diversity*	1993.12.29	To develop national strategies for the conservation and sustainable use of biological diversity
4	*United Nations Framework Convention on Climate Change*	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	*United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification*	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	*Kyoto Protocol to the United Nations Framework Convention on Climate Change*	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[9] (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.

[9] 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_{10} emissions in prefecture level cities by more than 10%; $PM_{2.5}$ emissions by approximately 25%, 20% and 15% in Beijing-Tianjin-Hebei region, Yangtze River Delta, and Pearl River Delta respectively; and controlling annual average $PM_{2.5}$ levels in Beijing at around 60 μg/m^3. 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_2, NO_x, 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^3)		WHO/World Bank Group EHS[10] (μg/m^3)	
		Class I	Class II	Interim Targets	AQG
SO_2	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

[10] World Bank Group 2007, ibid.

Air Quality Parameter	Averaging Period	PRC GB 3095-2012 (μg/m^3)		WHO/World Bank Group EHS[10] (μg/m^3)	
		Class I	Class II	Interim Targets	AQG
PM_{10}	1-year	40	70	30 - 70	20
	24-hour	50	150	75 - 150	50
$PM_{2.5}$	1-year	15	35	15 - 35	10
	24-hr	35	75	37.5 - 75	25
NO_2	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_2: upper limit of EHS interim target (125 μg/m^3) is more stringent than GB Class II standard (150 μg/m^3);
(ii) 24-hour PM_{10}: the upper limit of the EHS interim target (125 μg/m^3) is the same as GB Class II standard;
(iii) 24-hr $PM_{2.5}$: the upper limit of the EHS interim target (75 μg/m^3) is the same as GB Class II standard; and
(iv) 24-hour NO_2: the EHS AQG (200 μg/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 mg/m^3 and the concentration limit at the boundary of construction sites is ≤ 1.0 mg/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[11] 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 ≥7.5	≥6	≥5	≥3	≥2
Permanganate index (I_{Mn}) [mg/L]	≤2	≤4	≤6	≤10	≤15
Chemical oxygen demand (COD) [mg/L]	≤15	≤15	≤20	≤30	≤40
5-day Biochemical oxygen demand (BOD_5) [mg/L]	≤3	≤3	≤4	≤6	≤10
Ammonia nitrogen (NH_3-N) [mg/L]	≤0.15	≤0.5	≤1.0	≤1.5	≤2.0
Total phosphorus (as P) [mg/L]	≤0.02	≤0.1	≤0.2	≤0.3	≤0.4
Lakes & reservoirs	≤0.01	≤0.025	≤0.05	≤0.1	≤0.2
Total nitrogen (lakes, reservoirs, as N) [mg/L]	≤0.2	≤0.5	≤1.0	≤1.5	≤2.0
Copper (Cu) [mg/L]	≤0.01	≤1.0	≤1.0	≤1.0	≤1.0
Zinc (Zn) [mg/L]	≤0.05	≤1.0	≤1.0	≤2.0	≤2.0
Fluoride (as F^-) [mg/L]	≤1.0	≤1.0	≤1.0	≤1.5	≤1.5
Selenium (Se) [mg/L]	≤0.01	≤0.01	≤0.01	≤0.02	≤0.02
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

[11] 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 (for discharging into Category III water body)	Class 2 (for discharging into Categories IV and V water body)	Class 3 (for discharging into municipal sewer)
pH	no unit	6 ~ 9	6 ~ 9	6 ~ 9
SS	mg/L	70	150	400
BOD_5	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_3-N	mg/L	15	25	---
PO_4^{2-} (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		Maximum Allowable Concentration (mg/kg dry weight)				
		Class 1	Class 2			Class 3
	Soil pH	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)				
	Class 1	Class 2			Class 3
Soil pH	Back ground	<6.5	6.5~7.5	>7.5	>6.5
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 *Ambient Air Quality Standard* (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 *Environmental Quality Standard for Noise* (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 *Environmental Quality Standards for Surface Water* (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 *Technical Guidelines for Environmental Impact Assessment – Ecological Impact* (HJ 19-2011)	"Footprint" of the permanent and temporary land take areas
	Physical cultural resources	No numerical standard but controlled under PRC's *Cultural Relics Protection Law* and *Cultural Relics Protection Law Implementation Ordinance.*	"Footprint" of the permanent and temporary land take areas
	Occupational health and safety	No numerical standard but controlled under PRC's *Labor Law* and *Environmental and Hygiene Standards for Construction Sites* (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	*Air Pollutant Integrated Emission Standard* (GB 16297-1996), Class II and fugitive emission standards	Construction sites within the "footprint" of the permanent and temporary land take areas
	Noise	*Emission Standard of Environmental Noise for Boundary of Construction Site* (GB 12523-2011)	Construction sites within the "footprint" of the permanent and temporary land take areas
	Wastewater	*Integrated Wastewater Discharge Standard* (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_2 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_2 and H_2S, 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_3 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*
Ambient Air Quality	**GB-3095-2012**	**WHO Air Quality Guidelines Global Update (2005); USEPA**	
TSP	0.12 mg/m^3 (Class I, 24h) 0.30 mg/m^3 (Class II, 24h)	WHO: No standard USEPA: No standard	*No comparison possible*
CO	4.0 mg/m^3 (Class I, 24h) 4.0 mg/m^3 (Class II, 24h)	WHO: No standard USEPA: 10 mg/m^3	*PRC standard is more stringent than USEPA*
NO_2	0.08 mg/m^3 (Class I, 24h) 0.08 mg/m^3 (Class II, 24h) 0.20 mg/m^3 (Class I, 1h) 0.20 mg/m^3 (Class II, 1h)	WHO: 0.04 mg/m^3 (365d); 0.20 mg/m3 (1h) USEPA: 0.14 mg/m^3 (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_{10}	0.05 mg/m^3 (Class I, 24h) 0.15 mg/m^3 (Class II, 24h)	WHO: 0.05 mg/m^3 (24h) USEPA: 0.15 mg/m^3 (24h)	*PRC standards are comparable to EPA standard.*
Ambient Acoustic Quality Standard	**GB-3096-2008**	**World Health Organization (1999)**	
L_{Aeq} (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*
Surface Water Quality Standard	**GB-3838-2002**		*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_3-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)		
Sea Water Quality Standard	**GB-3097-1997**		*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)		
Noise Standards for Industrial Enterprise Boundary	**GB 12348-2008**	**World Health Organization (1999)**	*WHO Class I: Residential, institutional, educational* *WHO Class II: Industrial, commercial*
L_{Aeq} (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)	
Noise Limits for Construction Sites	**GB 12523-1990**	**USEPA**	
L_{Aeq} (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.

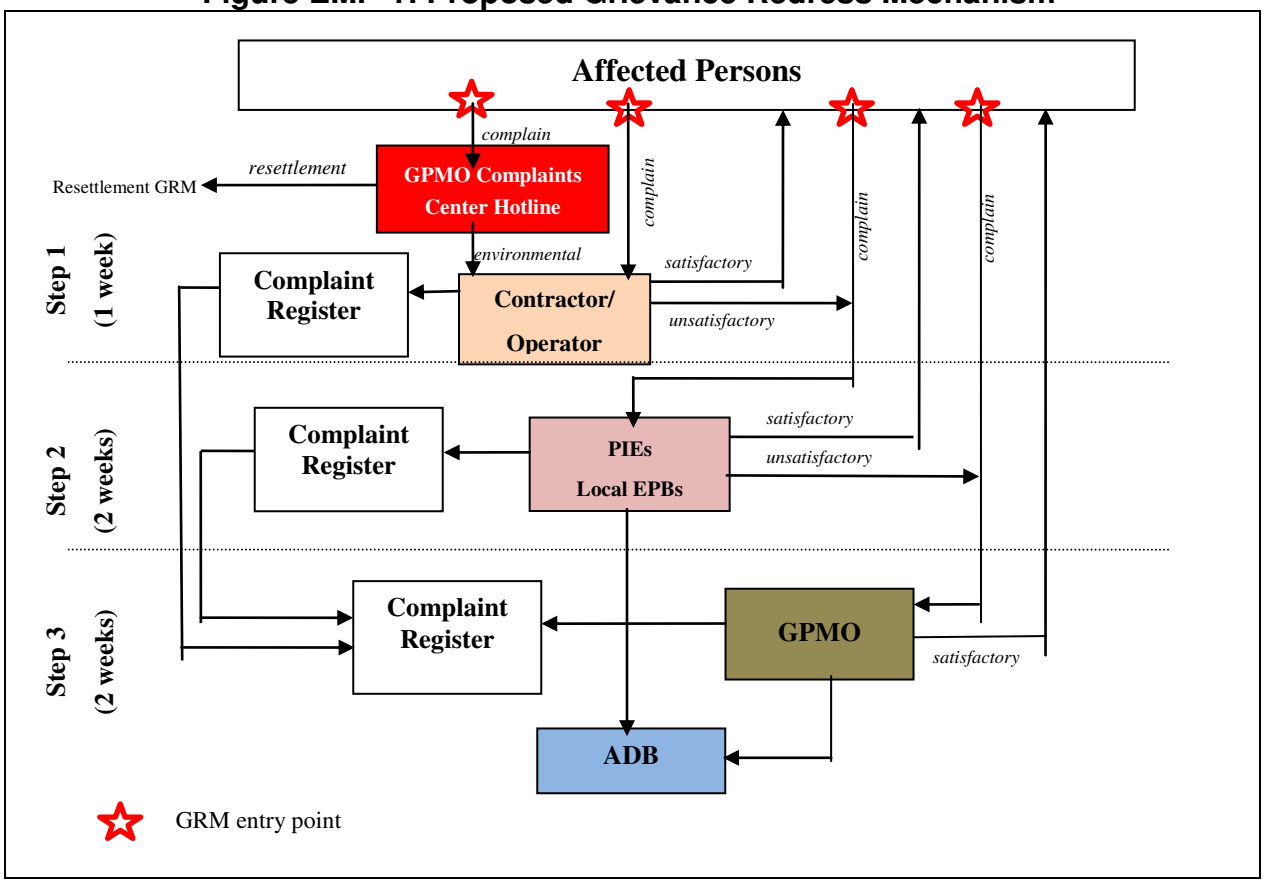
5. The tracking and documenting of grievance resolutions by GPMO will include the following elements: (i) tracking forms and procedures for gathering information from project personnel and complainant(s); (ii) regular updating of the GRM database by the GPMO environmental focal point; (iii) processes 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.[12]

[12] 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

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
						Total estimated cost:	**$15,000**

Notes: **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.