Environmental Management Plan

May 2021

People's Republic of China: Guangxi Regional Cooperation and Integration Promotion Investment Program – Tranche 3

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

A. Introduction

1. This Environmental Management Plan (EMP) is developed for Tranche 3 of the Guangxi Regional Cooperation and Integration Promotion Investment Program Multitranche Financing Facility (MFF) (the project). This EMP identifies potential environmental impacts and describes the mitigation measures and monitoring requirements for Tranche 3 during design and pre-construction, construction, and operation. The EMP aims to ensure that environmental activities are effectively implemented during the pre-construction, construction, and operation in order to avoid, reduce or mitigate negative environmental impacts and risks. The EMP draws on the findings of the initial environmental examination (IEE) report; the domestic environmental impact assessment reports (EIRs), feasibility study reports (FSR) and environmental impact tables (EIT) for the six subprojects; the transactional technical assistance (TRTA) reports, and discussions and agreements with relevant government agencies and the Asian Development Bank (ADB).

2. This EMP is based on the project design described in the feasibility study report of six subprojects included in tranche 3 i.e. the feasibility study report of subproject 1 (August 2020); subproject 2 (July 2020); subproject 3 (June 2020); subproject 4 (August 2020); subproject 5 (July 2020); and subproject 6 (December 2020) editions. The detailed design of the project is still to be finalized and may require an impact analysis and/or revision of the EMP thereafter. The Government of Guangxi Zhuang Autonomous Region will submit the detailed design report to ADB for review and determination of the need to revise the EMP, which will be published on ADB's public website (www.adb.org) and incorporated into the Project Administration Manual (PAM). The contractor will be informed of his responsibilities for implementing the EMP and the cost of EMP implementation will be included in the tender for the project works. Implementation cost of EMP will be included in the bidding documents of each subproject. EMP describes the primary grievance redress mechanism (GRM) for the project. However, each subproject will have its own set of entry points. All project owners will be made aware of the GRM requirements.

3. This EMP comprises six key components: (i) institutional arrangements and environmental responsibility, (ii) environmental mitigation measures, (iii) environmental monitoring defined in the environmental monitoring plan (EMoP), (iv) institutional strengthening and training, (v) public consultation, and (vi) grievance redress mechanism (GRM). There are two types of environmental monitoring: (a) collection of environmental data and analyses for assessing the extent and severity of impact and (b) compliance monitoring (or auditing) of EMP implementation by an independent third-party agency. The final part of this EMP contains a series of environmental contract clauses to be included in all bidding documents and construction contracts, thus guaranteeing the implementation of environmental protection activities during the construction of the six subprojects.

B. Institutional Arrangements and Responsibilities for EMP Implementation

4. **Executing agency**. The Government of the Guangxi Zhuang Autonomous Region (GZAR) will be the executing agency (EA) responsible for overall implementation and compliance with loan assurances and the EMP.

5. **Project management office**. The EA has established the Guangxi Foreign Loans Project Management Office (GPMO)**,** who will be responsible, on behalf of the EA, for the day-to-day management of the project, supervising the implementation of environment mitigation and monitoring measures and coordinating the project GRM and reporting to ADB. GPMO shall (i) appoint one person on its staff roster as the environmental focal/coordinator to coordinate and manage EMP implementation, (iii) engage the project management and capacity building consultant (PMC) services, and (iii) supervise the procurement process. The GPMO

environmental coordinator shall (i) supervise contractors and their compliance with the EMP; (ii) conduct regular site inspections; (iii) act as local entry point for the project GRM; and (iv) submit environmental monitoring data provided by the implementing agencies (IAs) to the GPMO for verification. GPMO shall prepare quarterly project progress reports and semi-annual environment monitoring reports (EMR) and submit them to ADB. GPMO will also engage an external monitor environment consultant (individual environment consultant) to undertaken compliance audit and verification of EMP implementation and monitoring.

6. **Implementing agency.** The municipal governments of Chongzuo, Baise and Fangchenggang, and the Daxin County Government will be the four implementing agencies. They will oversee their respective project implementing entities (PIEs). Each subproject has a separate PIE as project owner as shown in EMP Table 1. The PIEs shall implement subproject components, administer and monitor contractors and suppliers, and be responsible for construction supervision and quality control. To ensure that the contractors comply with the EMP provisions, the PIEs with the help and technical support of a procurement agent and the Environmental Expert under the PMC services, shall prepare and provide the following specification clauses for incorporation into the bidding procedures: (i) a list of environmental management and monitoring requirements to be budgeted by the bidders in their proposals; (ii) environmental clauses for contractual terms and conditions; and (iii) major items in the IEE, and the full EMP. Each PIE shall (i) contract the local Environmental Monitoring Station (EMS) to conduct environmental quality monitoring during the construction stage, and (ii) contract an Environmental Supervision Engineer (ESE) to conduct supervision and verification of EMP implementation during construction of the subproject. Each PIE shall appoint one person on its staff as environmental focal point to (i) supervise contractors and their compliance with the EMP, (ii) conduct regular site inspections following the site inspection checklist (EMP Appendix 1), and (iii) submit environmental quality monitoring data provided by the EMS to the PMO and local Ecology and Environment Bureau (EEB).

Table EMP-1: Tranche 3 subprojects and project implementation entities

No.	Subproject Title	Summary of Subproject Content	Project Implementing Entity
1	Baise University Sino-Viet Nam Cross-border Training Center Project	Based on Baise University, A Sino-Vietnamese economy, culture and education exchange and training center functioned with teaching and training, conference reception, Sino-Vietnamese cultural exhibition, food and commodity trade exhibition will be built.	Baise University
2	Baise Cross-Border Agricultural Products Industry Chain Upgrading Project	This project is the construction content of the first phase of the China-ASEAN (Baise) Agricultural Products Trade Center which includes two major construction works -- the cross-border agricultural product supply chain integrated service center, and the small and medium-sized enterprise green fruit and vegetable deep processing demonstration base.	Guangxi Baise Yihao Agricultural Development Co., Ltd.
3	Chongzuo Cold Chain Logistics Demonstration Project	Build cold storage and bonded warehouse, build an integrated logistics hub information system	Guangxi Chongzuo City Industrial Investment Development Group Co., Ltd.
4	Chongzuo Sino-Viet Nam Border Economic Cooperation Zone Demonstration Project (Phase II)	Through the construction of the road network and the expansion of the water supply project of the sugar circular economy industrial park in Jiangzhou District, the income and living convenience of overseas Chinese residents, relocated poverty households and Vietnamese workers in the cooperation zone will be improved, and the laborers' competitiveness and enthusiasm of planting and breeding will be promoted to promote industrial transfer	Chongzuo Xinghe Investment Development Co., Ltd.
5	Chongzuo Daxin Sino-Viet Nam Cross-border Tourism Project	Improve the road network and connections, facilitate the construction of smart tourism.	Guangxi Daxin Anping Investment Group Co., Ltd.

No.	Subproject Title	Summary of Subproject Content	Project Implementing Entity
6	Fangchenggang Sino-ASEAN Trade and Culture Exchange Center project	Build comprehensive service centers, exhibition centers, friendship Building, cross-border financial settlement centers, cross-border e-commerce logistics operation centers, cross-border experience stores for ASEAN specialty commodities, quarantine inspection stations and infrastructure, to promote the functions of cross-border economic cooperation zones	Fangcheng District Agricultural Tourism Investment Co., Ltd., Fangchenggang City

7. **Construction contractors** for the six subprojects shall be responsible for implementing the mitigation measures during construction stage under the supervision of the PIEs (through the ESE) and GPMO. In the bids, contractors shall be required to respond to the environmental management and monitoring requirements defined in the EMP. Other contractual requirements of the construction contractors are defined in EMP Appendix 2 (Environmental Safeguard Clauses for Civil Works Contracts). Each contractor shall be required to assign a person responsible for environment, health and safety.

8. **Startup Environment Consultant.** An individual environment safeguards consultant (3 person months) will be hired as project startup environment consultant (SEC) intermittently to assist and support GPMO to ensure the EMP obligations are fully considered in the tendering documents and construction contracts and the environmental management mechanism are well established within the GPMO and IAs. The SEC will:

- support GPMO in meaningful consultation and information disclosure on project activities prior to construction works, including (but not limited to) implementation schedule; construction scope; contact information of PIEs, contractor, and GPMO; grievance redress mechanism; health and safety issues;
- support GPMO in updating the EMP including environmental monitoring plan as necessary to revise or incorporate additional environmental mitigation and monitoring measures, budget, institutional arrangements, etc., that may be required based on the detailed design; submit to ADB for approval and disclosure; ensure compliance with the PRC's environmental laws and regulations, ADB's Safeguard Policy Statement (2009) and Public Communications Policy (2011);
- assess the project components' environmental readiness prior to implementation based on the readiness indicators defined in the EMP;
- update the IEE and EMP including mitigation measures, monitoring program, institutional arrangements, and training plan as necessary, to reflect the final project scope and detailed design, submit to ADB for review and disclosure;
- support the EA, IAs, PIEs to ensure that the bidding documents and civil works contracts contain provisions requiring contractors to comply with the mitigation measures in the EMP and that relevant sections of the project EMP are incorporated in the bidding and contract documents;
- support GPMO and PIEs in reviewing and approving contractors' site-EMPs and conducting periodic environmental site inspection;
- Assist the GPMO and PIEs to establish a GRM, and provide training for the GRM and GRM access points.

9. **PMC Environment Safeguards Specialist.** Under the project management and capacity building consulting services, one national environment consultant (30 person months) will be recruited to support the effective implementation of EMP. The expert will be responsible for overall project implementation support and capacity building on environment management and

safeguards for all subprojects, including:

- assess the project's environmental readiness prior to implementation based on the readiness indicators defined in Table -3 in the EMP;
- review, advise and monitor implementation of IEE, EMP and ESMS, including assisting staff of the EA, IAs and PIEs to conduct environmental monitoring and reporting in accordance with the environmental management plans;
- provide training to GPMO, PIEs and contractors on environmental laws, regulations and policies, SPS 2009, EMP implementation, and GRM in accordance with the training plan defined in the EMP (Table EMP-7);
- undertake site visits as required, identify any environment-related implementation issues, and propose and oversee implementation of necessary corrective actions;
- assist the PIEs in preparing the semi-annual report on the implementation of environmental management plans to be submitted to ADB;
- undertake quarterly reviews of the list of subproject components proposed for financing and carry out spot checks of environment safeguard documentation to ensure requirements are being met;
- if required, update the IEE and EMP reports for changes in the subprojects during detailed design or subproject implementation (for example if there is a minor or major scope change) that would result in adverse environmental impacts not within the scope of the approved IEE/EMP;
- identify if there is any additional need for prior review and capacity building support based on performance of ESU;
- report environmental performance issues to GPMO;
- assist GPMO to prepare quarterly project progress reports and semi-annual EMRs for submission to ADB;

10. **Environmental supervision engineer (ESE)** Each PIE shall contract an ESE to supervise the day-to-day implementation of the EMP and verify environmental performance during construction and whether the implementation of EMP items complies with the plan. The ESE will review EMP implementation and monitoring activities and results, assess EMP implementation performance, to visit the project sites and consult potentially affected people, discuss assessment with the GPMO and the respective PIE; and suggest corrective actions. The ESE will prepare monthly reports for submission to the PIE which will be submitted to and reviewed by GPMO during the preparation of the quarterly project progress reports for ADB and by the EEM during the preparation of the semi-annual EMRs for ADB.

11. **External Monitor Environment Consultant.** One national external environment monitoring consultant (EMEC, 10 person-months) will be recruited to verify internal monitoring findings and the progress in implementation of environmental safeguards to check compliance with SPS. The EMEC will be responsible for:

- review IEE report (including the EMP and EMoP) and all monitoring reports prepared for the project to understand the environmental issues in the subproject areas and mitigation and monitoring requirements of the project;
- review EMP for inclusion of all site-specific issues and make necessary amendments if any issues are not covered.
- review the EMoP and ensure that the location and timing of checking/testing all environmental parameters are in accordance with the site conditions.

- monitoring of environmental quality data related to the project;
- conducting independent monitoring on environmental management plan (EMP) implementation status and additional environmental monitoring, if necessary, to verify that issues reported in the semi-annual internal environmental monitoring report, quarterly progress report and project progress reports are in compliance with ADB's safeguards and other relevant policies;
- include test results of environment monitoring carried out in the external environmental monitoring reports and advise/support the contractor in taking remedial actions if any of the test results are not within the required limits. Recommend corrective actions for any non-compliance;
- making recommendations and due diligence to resolve any issues or problems on implementing the EMP and providing advice to the subprojects in Tranche 3 as reasonably requested by PMOs and PIEs; and
- submitting English and Chinese external environmental monitoring report to the GZAR and ADB with quality acceptable to ADB on semi-annual basis during project implementation period.

12. Table EMP-2 outlines the overall environmental responsibilities.

C. Summary of Potential Impacts and Mitigation Measures

13. Table 3 of the EMP summarizes the potential environmental issues and impacts and their corresponding mitigation measures during pre-construction, construction, and operation of the six subprojects, divided into generic and specific measures for each of the six subprojects. Mitigation measures are divided into two categories: (i) measures that will permanently become part of the infrastructure such as engineering measures for energy efficiency, green building features and barrier-free accessibility, etc. should be included within the main civil work contract costs, and not double-counted as part of the EMP costs; and (ii) temporary measures during the construction stage (e.g. dust suppression by watering, use of quiet / low noise powered mechanical equipment (PME), flocculants used to facilitate sedimentation of suspended solids in construction site runoff, etc.) will need to be included in the tender documents to ensure that contractors budget these items in their bids.

Table EMP-2: Environmental Responsibility

Responsible Entity	Project Stage and Environmental				
	Project Preparation	**Engineering Detailed**	**Tendering & Pre-construction**	**Construction**	**Operation**
GZAR Government	The Executing Agency (EA) for the project responsible for overall implementation and compliance with loan assurances and the EMP.				
GPMO (Guangxi Foreign Loans Project Management Office)	Established by the EA to be responsible for the day-to-day management of the project. GPMO has overall responsibility delegated by the EA for supervising the implementation of environmental mitigation measures, coordinating the project level GRM and reporting to ADB.				
	1. Engage LDIs to prepare FSR, EIT and RP	1. Engage LDIs 2. Engage project start up consultant 3. Update IEE/EMP if needed 4. Review updated EMP 5. Confirm that mitigation measures have been included in engineering detailed design	1. Appoint one environmental focal point on staff 2. Incorporate IEE/EMP clauses in tender documents and contracts 3. Manage the procurement process 4. Establish the project complaint center with hot line 5. Engage PMC services and EMEC services	1. Supervise EMP implementation to ensure effectiveness 2. Operate the project complaint center and coordinate the project environment GRM records and reporting. 3. Prepare quarterly project progress reports and semi-annual IEMRs and submit them to ADB 4. Conduct information disclosure and public consultation 5. Inspect implementation of mitigation measures.	1. Instruct the PIEs on environmental management requirements 2. Prepare quarterly project progress reports and semi-annual IEMRs until a PCR is issued
1. Baise University 2. Guangxi Baise No. 1 Agricultural Development Co., Ltd 3. Guangxi Chongzuo City Industrial Investment Development Group Co., Ltd. 4. Chongzuo Xinghe Investment and Development Co., Ltd. 5. Daxin County People's government 6. Fangchenggang City Fangcheng District Agricultural Tourism Investment Co., Ltd.	The project implementing entities (PIEs) will implement subproject components, administer and monitor contractors and suppliers, and take responsibility for construction supervision and quality control. IAs/PIEs will ensure that the EMP is implemented proactively and will respond to any adverse impact beyond those foreseen in the IEE and ensure that if there are any changes in scope the IEE/EMP will be updated, as needed. IAs/PIEs will also attend to requests from relevant agencies and ADB regarding the mitigation measures and environmental monitoring program.				
			1. Incorporate IEE/EMP clauses in tender documents and contracts 2. Appoint an environmental focal point on staff 3. Engage local EMS for environmental monitoring 4. Engage ESE for day-to-day supervision and monitoring of implementation of EMP.	1. Supervise contractors and ensure compliance with the EMP 2. Coordinate construction supervision and quality control 3. Coordinate environmental monitoring according to the environmental monitoring program in the approved EMP 4. Act as a local entry point for the project GRM, collate records and report monthly to GPMO on GRM 5. Submit monthly monitoring results to GPMO and local EEBs	1. Coordinate environmental monitoring according to the approved EMP until a PCR is issued 2. Ensure proper operation of subproject facilities according to design standards

Responsible Entity	Project Stage and Environmental				
	Project Preparation	**Engineering Detailed**	**Tendering & Pre-construction**	**Construction**	**Operation**
Local design institutes (LDIs)	1. Prepare subproject FSRs, EITs, RPs 2. Conduct public consultation	1. Incorporate mitigation measures defined in the approved EITs and this EMP into engineering detailed designs 2. Update the EMP in cooperation with the EEM 3. Incorporate agreed climate adaptation measures into engineering detailed designs.			
Local EEBs	1. Review and approve the subproject EITs			1. Review subproject environmental monitoring results 2. Conduct mandated inspection and monitoring 3. Conduct the “Three Simultaneity” acceptance inspections on completion of the subprojects	
PPTA consultant	1. Provide technical assistance 2. Review EITs and other relevant documents 3. Prepare IEE report and EMP				
Startup consultant		1. Update IEE and EMP 2. Review updated EMP, confirm that mitigation measures have been included in engineering detailed design	1. Review bidding documents to ensure that the IEE/EMP clauses are incorporated 2. Confirm project’s readiness in respect of environmental management.		
PMC Environment Consultant				1. Advise on mitigation measures 2. Provide technical support to GPMO, PIEs and contractors for environmental management 3. Conduct environmental training 4. Conduct EMP compliance audit 5. Support GPMO in preparing quarterly project progress reports and semi-annual IEMRs. 6. Review domestic environmental inspection acceptance reports 7. Provide environmental input to the PCR.	1. Conduct EMP compliance audit 2. Support PMO in instructing PIEs on environmental management requirements 3. Support PMO in preparing quarterly project progress reports and semi-annual IEMRs until a PCR is issued 4. Coordinate environmental monitoring until a PCR is issued

Responsible Entity	Project Stage and Environmental				
	Project Preparation	Engineering Detailed	Tendering & Pre-construction	Construction	Operation
Contractors			1. Ensure sufficient funding and human resources for proper and timely implementation of required mitigation and monitoring measures in the EMP throughout construction	1. Appoint an environment, health and safety (EHS) officer to oversee EMP implementation related to environment, occupational health and safety on construction site 2. Ensure health and safety 3. Implement mitigation measures 4. Act as a local entry point for the project GRM	
Local EMS				1. Undertake environmental monitoring according to the environmental monitoring program in the approved EMP (contracted by PIEs) 2. Report monitoring data to ESE, PIEs and GPMO	1. Undertake environmental quality monitoring until a PCR is issued (contracted by PIEs) 2. Submit monitoring results to the PIEs
ESE				1. Supervise and monitor data to day implementation of EMP 2. Conduct independent verification of subproject's environment performance and compliance with the EMP (contracted by PIEs) 3. Review monthly monitoring data submitted by EMS, and conduct compliance checking against applicable environmental standards and report to EMEC. 3. Provide advice to contractors to resolve on-site environmental problems when monitoring data shows non-compliance and any environmental complaints raised. 4. Submit monthly compliance auditing results to PMO and PIEs	

Responsible Entity	Project Stage and Environmental				
	Project Preparation	**Engineering Detailed**	**Tendering & Pre-construction**	**Construction**	**Operation**
EMEC				1. Monitor and check the validity and credibility of internal environment monitoring reports; 2. Provide technical guidance and monitor the implementation and effectiveness of all the environmental safeguards activities; 3. review the environment monitoring and inspection plan; 4. recommend corrective actions for any non-compliance; and 5. prepare semi-annual external environmental monitoring reports.	1. Monitor and check the validity and credibility of internal environment monitoring reports; 2. Prepare semi-annual external environmental monitoring reports.
ADB	1. Review and approve the IEE and EMP and disclose on ADB website	1. Approve updated IEE/EMP if appropriate and disclose on ADB website	1. Review bidding documents 2. Review proposed candidates for PMC and EMEC to ensure suitably qualified. 3. Confirm project's readiness	1. Review quarterly project progress reports, semi-annual IEMRs and PCR 2. Undertake review missions 3. Advise on compliance issues, as required 4. Review and disclose semi-annual IEMRs, EEMRs on ADB website.	1. Review and approve IEMRs, EEMRs and disclose on ADB website 2. Undertake project completion review mission and prepare PCR for approval by Board and disclosure on ADB website.

Notes:

ADB = Asian Development Bank; **EA** = executing agency; **EMEC** = external monitor environmental consultant; **EHS** = environment, health & safety; **EIT** = environmental impact table; **EMP** = environmental management plan; **EMR** = environmental monitoring report; **EMS** = Environmental Monitoring Station; **EEB** = Ecology and Environmental Bureau; **ESE** = environmental supervision engineer; **FSR** = feasibility study report; **GPMO** = Guangxi project management office; **GRM** = grievance redress mechanism; **GZAR** =Guangxi Zhuang Autonomous Region; **IA** = implementing agency; **IEE** = initial environmental examination **LDI** = local design institute; **PCR** = project completion report; **PIE** = project implementing entity; **PMC** = project management consultant; **PPTA** = project preparation technical assistance; **RP** = resettlement plan

Table EMP-3: Summary of Potential Impacts and Mitigation Measures

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
A. Mitigation measures applicable to all subprojects						
A.1: Detailed Design						
Green building design	Materials and fixtures, carbon emission	Efficient use of resources and energy	• Technical design of buildings and facilities shall include barrier-free universal access • Technical design of buildings and facilities shall include energy saving features in terms of building envelope/roofing materials, electrical system and automation, water heating, air conditioning and ventilation, and lighting, etc. as recommended in the FSRs • Technical design of buildings and facilities shall consider other "green building" features besides energy saving.	LDI	GPMO	Included in design contract
Slope stability	Climate change	Extreme rainfall causing landslide	• A high design standard shall be adopted for slope stabilization design to improve climate resilience.	LDI	GPMO	Included in design contract
Cold storage warehouse design	Climate change	Use of refrigerant causing emissions of GHG	• Selection and use of zero or low global warming potential (GWP) refrigerant in the cold chain and cold storage facilities.	LDI	GPMO / PIE	Included in design contract
A.2: Pre-construction						
Institutional strengthening	--	Lack of environmental management capacities within PMO and PIEs	• Appoint qualified staff as the environmental focal point to oversee EMP implementation.	GPMO, PIEs	ADB	GPMO, PIEs
			• Contract start up environment consultant for updating the IEE and EMP. • Contract loan implementation environment consultant within PMC services • Appoint an external monitor environment consultant responsible for the environmental audit and compliance monitoring. • Conduct environment management training.	GPMO	ADB	GPMO
	--	Lack of environmental monitoring and supervision capability and qualification	• Contract local EMS to conduct environmental quality monitoring during construction and operation. • Appoint an environmental supervision engineer (ESE) responsible for the environmental supervision of contractors and environmental monitoring of construction sites.	PIEs	GPMO	PIEs
Meaningful Consultations and Grievance redress mechanism	--	Consult people, establish a system for receiving and resolving complaints	• Hold a public meetings (with due considerations to COVID-19 SOP) prior to construction to discuss the EMP, project activities, and issues associated with the safety of students and staff, as well as nearby communities in vicinity of the construction site; • Establish a project-specific grievance redress mechanism (GRM) including a complaint hotline. • Brief and provide training to other GRM access points (PIEs, contractors).	GPMO, IAs, SEC	ADB	GPMO, PMC Service, SEC
EMP Update	-	-	• Review mitigation measures defined in this EMP, update as required to reflect detailed design and Develop CEMPs, responding to all clauses and requirements of this EMP, disclose updated EMP on project website.	GPMO, SEC, PMC	ADB	GPMO, PMC, SEC

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
Tender and contract documents	-	Environmental contract clauses-	• Put the environmental contract clauses listed in Appendix 2 of this EMP into all civil works tender documents and contracts and ensure adequate cost provision.	GPMO, IAs, Tendering Agent	SEC, PMC, ADB	Included in tendering agency contract
Health and Safety	-	Health and Safety risk to the People and workers	• The health and safety plan should include aspects to deal with COVID-19 Health and Safety issues. This should have minimum COVID-19 safety management requirement in compliance with PRC and WHO guidelines which include – prescreening ahead of works. Establish early screening measures and procedures to ensure that all new project personnel are tested negative before commencing on-site work. See also requirements under occupational health and safety (Construction Phase, below and see Attachment 3) for preparation of a COVID-19 health and safety plan.	Contractor, SEC, PMC	GPMO, PIEs	Included in tendering agency contract
Estimated cost for Design and Pre-construction: Included in detailed design and contract tender fees						
A.3: Construction						
Construction site good practice	Air quality	Dust (TSP) during construction	• Spray water at least twice each day on unpaved areas and exposed dust-prone stockpiles except on rainy days. • Store dust-prone materials in areas with shelters on four sides and on top. If such materials have to be stored in open area, cover with strong tarpaulin. • Control vehicle speed to ≤ 8 km/h in unpaved areas. Post the speed limit signs in these areas. • Pave construction site exits with gravel or asphalt. • Install wheel washing equipment or conduct wheel washing manually at each construction site exit to prevent trucks from carrying muddy or dusty substances onto public roads. • Vehicles with open load-carrying trays, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards and shall always be covered with a strong tarpaulin. • Provide personal protective equipment (PPE) such as goggles, gloves and respirators to construction workers doing interior fit-out to minimize skin exposure to chemicals and inhalation of VOC. • Regularly maintain construction vehicles and machinery to minimize exhaust emissions from these sources. • Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor and withholding of payment.	Contractor	PIEs, ESE, PMC	$80,000 (contractor bid)

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
	Noise and vibration	Noise from PME and vehicles	• No construction works shall be conducted between 22:00 to 06:00 hours. Piling works shall also be prohibited between 12:00 to 14:30 hours. • Carry out consultation with local communities to discuss/agree the timing of noisy construction activities. • During construction, the contractor shall: – ensure regular equipment repair and maintenance to keep them in good working condition to minimize noise – deploy low noise machinery or the equipment with sound insulation – erect temporary noise barriers or hoardings around noisy equipment to shield the noise from equipment provide the construction workers with suitable hearing protection (earmuffs) when working near noisy machinery such as during piling – forbid the use of horns unless absolutely necessary, minimize the use of whistles	Contractor	PIEs, ESE, PMC	$20,00 (contractor bid)
	Water quality	Construction site runoff and wastewater discharge	• Collect runoff from construction sites with drainage ditches to prevent runoff containing muddy water from polluting nearby roads, land and water bodies. • Install and operate oily-water separators and sedimentation tanks on construction sites to treat process water and muddy runoff with high concentrations of total petroleum hydrocarbon and suspended solids. If necessary, use flocculants such as polyacryl amide to facilitate sedimentation. • Provide portable toilets and small package wastewater treatment plants and/or septic tanks on construction sites for the workers. If there are nearby public sewers, install interim storage tanks and pipelines to convey wastewater to public sewers. • Store fuels, oil, and other hazardous materials on construction sites within secured areas on impermeable surfaces protected by bunds and provided with cleanup kits. • Clean up any chemical spills into drains and water bodies according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the GPMO and local EEB.	Contractor	PIEs, ESE, PMC	$2,000 (contractor bid)
	Solid waste	Construction site refuse and C&D waste	• Maximize the re-use of C&D wastes on the project. • Store all refuse and C&D waste generated on construction sites in designated areas and remove them from these locations for disposal or reuse regularly.	Contractor	PIEs, ESE, PMC	$3,000 (contractor bid)
	Ecology	Destruction of vegetation and wildlife	• Construction workers are prohibited from capturing any wildlife during construction. • Where a tree must be removed or an area of grassland disturbed, replant trees and re-vegetate the area after construction. • Tree planting shall be done by planting 5 new trees for each tree removed for the project. The location for planting the trees shall be identified during implementation stage. • Tree planting shall use local species with local provenance. Planting of exotic or invasive species shall be prohibited.	Contractor	PIEs, ESE, PMC	$10,000 (contractor bid)

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
	Physical cultural resources	Destruction of buried cultural relics	• Comply with PRC's Cultural Relics Protection Law and Cultural Relics Protection Law Implementation Ordinance if such relics are discovered, stop work immediately and notify the local cultural authority, adopt measures to protect the site.	Contractor	PIEs, ESE, PMC	None
	Overall disturbance to communities	Excessive disturbance to communities due to prolonged construction times	• Identify and adhere to strict schedule for completion of civil works and avoid prolonged construction and disturbance. • Keep communities informed of construction activities, in particular those that may result in disruption of access, noisy or dust-generating activities that are likely to result in significant disturbance. Ensure communities are aware of GRM entry points.	Contractor	PIEs, ESE, PMC	Covered in above costs
Health and Safety	Occupational health and safety	Environment, health & safety officer	• Appoint at least one environment, health and safety (EHS) officer to manage occupational health and safety risks on construction sites by applying the following measures.	Contractor	PIEs, ESE, PMC	(contractor staff)
		Construction site sanitation	• Provide adequate and functional systems for sanitary conditions, toilet facilities, waste management with waste separation, labor dormitories and cooking facilities. • Effectively clean and disinfect the site. During site formation, spray with phenolated water for disinfection. Disinfect toilets and refuse bins and ensure timely removal of solid waste. • Exterminate rodents on site at least once every 3 months and exterminate mosquitoes and flies at least twice each year. • Provide public toilets in accordance with the requirements of labor management and sanitation departments in the living areas on construction site, and appoint designated staff responsible for cleaning and disinfection • Discharge construction site domestic wastewater into the municipal sewer system or treated on-site using a portable system.	Contractor	PIEs, ESE, PMC	Included in water quality above (contractor bid)
		Occupational safety	• Provide personal protective equipment (safety hats and shoes, high visibility vests and safety belt and harness for above ground works) to all construction workers and strictly enforce all workers to wear PPE. • Provide safety goggles, gloves and respiratory masks to workers doing interior fit-out works. • Provide ear plugs to workers operating and working near noisy PME.	Contractor	PIEs, ESE, PMC	$50,000 (contractor bid)
		Food safety	• Inspect and supervise food hygiene in canteens on site regularly. Canteen workers must have valid health permits. • If food poisoning is discovered, implement effective control measures immediately to prevent it from spreading.	Contractor	PIEs, ESE, PMC	None

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
		Disease prevention and safety awareness	• Construction workers must have physical examination before starting work on site. If infectious disease is found, the patient must be isolated for treatment to prevent the disease from spreading. From the second year onwards, conduct physical examination on 20% of the workers every year. • Establish health clinic at location where workers are concentrated, which should be equipped with common medical supplies and medication for simple treatment and emergency treatment for accidents. • Provide induction and training by local health departments on prevention and management of communicable diseases. • COVID-19. Prepare and implement a coronavirus (COVID-19) health and safety plan to address COVID-19 health risks. The plan will be prepared in line with WHO and government (national and local) regulations and guidelines on COVID-19 prevention and control, and in consultation with public health agencies in the area. The plan should include (i) measures to record the locations that workers have visited/lived immediately before and during project work; (ii) schedules for disinfecting/cleaning offices, yards, stores and labor camps; (iii) measures to implement temperature checks and other health checks on site; (iii) physical distancing measures, particularly in worker camps; (iv) requirements for mandatory use of personal protective equipment such as facemasks, and provision of handwashing stations, hand sanitizers, and other appropriate protective measures; (v) how workers and residents living near project sites will be provided with information to protect themselves from COVID-19; (vi) procedures to be adopted in the event a worker is suspected to have contracted COVID-19; and (vii) other COVID-19 prevention and control measures appropriate for the local context. Guidance on general COVID-19 preparedness measures is included in EMP Appendix 4.	Contractor	PIEs, ESE, PMC	$6,000 (contractor bid)
	Community health and safety	Temporary traffic management	• Prepare a traffic control and operation plan together with the local traffic police prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls and planning in advance.	Contractor, local traffic police	PIEs, ESE, PMC	None
		Information disclosure	• Erect construction billboards, which include construction contents, schedule, responsible person and complaint phone number, at the entry to each construction site and construction staging area. • Inform residents and businesses in advance of the road improvement activities, given the dates and duration of expected disruption and make aware of the project GRM. • Place clear signs at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc. and raising awareness on safety issues.	Contractor	PIEs, ESE, PMC	None
		Access to construction sites	• Make all sites secure and discourage access by members of the public through appropriate fencing, signage and/or security personnel, as appropriate.	Contractor	PIEs, ESE, PMC	None

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
		Utility services interruptions	• Assess construction locations in advance and identify potential for disruption to services and risks before starting construction. Any damage or hindrance/disadvantage to local businesses caused by the premature removal or insufficient replacement of public utilities is subject to full compensation, at the full liability of the contractor who caused the problem. • If temporary disruption is unavoidable, develop a plan in collaboration with relevant local authorities such as power company, water supply company and communication company to minimize the disruption and communicate the dates and duration in advance to affected persons.	Contractor, local utility service providers	PIEs, ESE, PMC	None
		Disease prevention and safety awareness	• COVID-19. Prepare and implement a coronavirus (COVID-19) health and safety plan to address COVID-19 health risks to the public and communities. The plan will be prepared in line with WHO and government (national and local) regulations and guidelines on COVID-19 prevention and control, and in consultation with public health agencies in the area.	Contractor	PIEs, ESE, PMC	Contractor and PIE budget
Grievance redress mechanism	Social & environmental	Handling and resolving complaints on contractors	• Appoint a GRM coordinator • Disclose GRM to affected people before construction begins at the main entrance to each construction site. • Maintain and update a Complaint Register to document all complaints.	Contractor, PIEs	PMO, SEC, PMC	Contractor and PIE budget
						Estimated cost for the Construction Stage: $294,000
B. Subproject 1: Baise University Sino-Viet Nam Cross-border Training Center						
B.1. Operation period						
	Air quality	Motor vehicle exhaust (CO, HC, NOx)	• Strictly implementation of the national automobile exhaust emission standards. Inspect incoming and outgoing motor vehicles. • Strengthen road management and road maintenance. Maintain good road operation. Reduce traffic jams.	BU	EEB	$1,500
		Road dust	• Combined with landscape greening design. Choose shrubs and trees that can absorb or purify. Greening at multiple levels.	BU	EEB	$16,000
		Restaurant lampblack	• Set up a gas hood to collect and electrostatically remove oil fume devices. After treatment, the fume is led to the roof of the building from a special pipe for discharge.	BU	EEB	$3,000
	Water quality	Domestic sewage (COD, BOD5, SS, NH3-N, animal and vegetable oil)	• Set up grease traps and septic tanks. The oily waste from the restaurant is pretreated by the grease trap. It is discharged into a septic tank and pretreated together with domestic sewage. Then it is discharged into the municipal sewage pipe network and into the regional sewage plant for further processing.	BU	EEB	$8,000
	Noise	Noise from equipment such as motor vehicles and backup generators	• The generator fitted with unit silencer and machine room sound insulation. The base adopts rubber vibration isolator; An elastic bellows need to be installed at the junction of the exhaust pipe and the exhaust port of the diesel engine; add muffler tube; Install silencer materials at the flue outlet of the roof. The exhaust port of the fan is equipped with silencing material. • Vehicles entering and leaving the project area should be strictly prohibited, limit their driving speed, and park vehicles in accordance with regulations. At the same time, do a good job of greening the project. Make a reasonable mix of trees, shrubs and grass. Form a continuous dense barrier zone.	BU	EEB	$1,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
	Solid waste	Domestic waste, kitchen waste, waste grease and waste packaging	• Should be equipped with household garbage bins and waste packaging garbage bins and the local health department regularly visits to collect garbage. The final disposal of garbage should be carried out in the designated place. • Waste grease and waste produced from kitchen will be passed by grease traps and oil fume removal devices. Entrust a recycling company for recycling and disposal.	BU	EEB	$2,000
C. Subproject 2: Baise Cross-Border Agricultural Products Industry Chain Upgrading Project						
C.1: Operation period						
	Air quality	Motor vehicle exhaust (CO, HC, NOx)	• Strictly implementation of the national automobile exhaust emission standards. Inspect incoming and outgoing motor vehicles.	GBNACL	EEB	$1,500
		Fermentation waste gas	• Strengthen ventilation and material coverage. Clean and transport in time and spray deodorant.	GBNACL	EEB	$16,000
	Water quality	domestic sewage / Production wastewater	• Pretreatment of the sewage treatment station in the plant area. Then discharge into the municipal sewage pipe network.	GBNACL	EEB	$3,000
	Noise	Noise from motor vehicles and processing equipment	• Vehicles entering and leaving the project area should be strictly prohibited, limit their driving speed, and park vehicles in accordance with regulations. • Strengthen equipment maintenance and take sound insulation and shock absorption measures. At the same time, do a good job of greening the project. Make a reasonable mix of trees, shrubs and grass to form a continuous dense barrier zone.	GBNACL	EEB	$8,000
	Solid waste	Fruit leaves, fruit branches, bad fruit and some wastes in the sorting process	• Sinotrans conducts further processing and utilization.	GBNACL	EEB	$1,000
		Waste residue generated during fruit deep processing	• Sinotrans conducts further processing and utilization.	GBNACL	EEB	$1,000
D. Subproject 3: Chongzuo Cold Chain Logistics Demonstration Project						
D.1: Operation period						
	Air quality	no	• According to the environmental impact assessment report. Shows that there is no waste gas during the operation period of subproject 3.	GCCIIDG	EEB	$0
	Water quality	Domestic sewage (COD, BOD5, SS, NH3-N, animal and vegetable oil)	• Set up grease traps and septic tanks. The oily waste from the restaurant is pretreated by the grease trap. It is discharged into a septic tank and pretreated together with domestic sewage. Then it is discharged into the municipal sewage pipe network and into the regional sewage plant for further processing.	GCCIIDG	EEB	$5,000
	Noise	no	• According to the environmental impact assessment report. It shows that there is no noise during the operation period of subproject 3.	GCCIIDG	EEB	$0
	Solid waste	no	• According to the environmental impact assessment report there is no solid waste generated during the operation period of subproject 3.	CXIDCL	EEB	$0
E. Subproject 4: Chongzuo Sino-Viet Nam Border Economic Cooperation Zone Demonstration Project (Phase II)						

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
E.1: Operation period						
	Air quality	A small amount of experimental exhaust gas	• Enhancing ventilation	CXIDCL	EEB	$5,000
		Automobile exhaust	• Greening, keeping the road unblocked and the clean road			
		Restaurant lampblack	• Set up a gas hood to collect and electrostatically remove oil fume devices. After treatment, the fume is led to the roof of the building from a special pipe for discharge.	CXIDCL	EEB	$2,000
		Sludge drying tank: A small amount of stench is produced during the process of sludge storage.	• Enhancing ventilation	CXIDCL	EEB	$1,000
	Water quality	Domestic sewage (COD, BOD5, SS, NH3-N, animal and vegetable oil)	• Set up grease traps and septic tanks. The oily waste from the restaurant is pretreated by the grease trap. Then it is discharged into a septic tank and discharged to the surrounding dry land for irrigation.	CXIDCL	EEB	$5,000
	Noise	Noise from equipment such as motor vehicles and backup generators	• High-noise equipment is placed indoors. Sound insulation to equipment rooms, water pumps and other infrastructure as vibration reduction measures. Sound absorption treatment on the wall; • Greening and beautifying the plant area of the water purification plant to reduce noise pollution, etc.	CXIDCL	EEB	$2,000
	Solid waste	Domestic garbage, waste packaging	• Should be equipped with household garbage bins and waste packaging garbage bins. And the local health department regularly visits to collect garbage. The final disposal of garbage should be carried out in a designated place.	CXIDCL	EEB	$3,000
		Laboratory waste chemicals, waste packaging and test fluids	• Different types of containers are used for hazardous solid waste. Collect separately and temporarily store in the storage area. Send it to a qualified processing unit for processing.	CXIDCL	EEB	$2,000
F. Subproject 5: Chongzuo Daxin Sino-Viet Nam Cross-border Tourism Project						
F.1: Operation period						
	Air quality	Motor vehicle exhaust (CO, HC, NOx)	• Strictly implement the national automobile exhaust emission standards. Inspect incoming and outgoing motor vehicles. • Strengthen road management and road maintenance. Maintain good road operation and reduce traffic jams.	GDAIGCL	EEB	$5,000
		Restaurant lampblack	• Set up a gas hood to collect and electrostatically remove oil fume devices. After treatment, the fume is led to the roof of the building from a special pipe for discharge	GDAIGCL	EEB	$2,000
		Toilets, septic tanks, garbage collection points	• Ecological toilets are used, and septic tanks are located underground and covered with covers. And planted a lot of vegetation around. The project's garbage is cleaned daily and transported daily by the municipal sanitation.	GDAIGCL	EEB	$1,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
	Water quality	Domestic sewage (COD, BOD5, SS, NH3-N, animal and vegetable oil)	• Set up grease traps and septic tanks for the oily waste from the restaurant is pretreated by the grease trap. It is discharged into a septic tank and pretreated together with domestic sewage. Then it is discharged into the municipal sewage pipe network and into the regional sewage plant. Further processing.	GDAIGCL	EEB	$5,000
	Noise	Noise from equipment such as motor vehicles and backup generators	• The generator adopts unit silencer and machine room sound insulation. The base adopts rubber vibration isolator. An elastic bellows is installed at the junction of the exhaust pipe and the exhaust port of the diesel engine. Add muffler tube; Install silencer materials at the flue outlet of the roof. The exhaust port of the fan is equipped with silencing material. • Vehicles entering and leaving the project area should be strictly prohibited, limit their driving speed, and park vehicles in accordance with regulations. At the same time, do a good job of greening the project. Make a reasonable mix of trees, shrubs and grass to form a continuous dense barrier zone.	GDAIGCL	EEB	$2,000
	Solid waste	Domestic waste, kitchen waste, waste grease and waste packaging	• Should be equipped with household garbage bins and waste packaging garbage bins. And the local health department regularly visits to collect garbage. The final disposal of garbage should be carried out in the designated place.	GDAIGCL	EEB	$3,000
		Waste oil and medical waste	• Waste engine oil and medical waste are both hazardous waste. Temporarily stored in the hazardous waste room. Outbound processing by qualified units.	GDAIGCL	EEB	$2,000
G. Subproject 6: Fangchenggang Sino-ASEAN Trade and Culture Exchange Center Project						
G.1: Operation period						
	Air quality	Motor vehicle exhaust (CO, HC, NOx)	• Strictly implement the national automobile exhaust emission standards. Inspect incoming and outgoing motor vehicles. • Strengthen road management and road maintenance. Maintain good road operation. Reduce traffic jams.	FCQATIC	EEB	$3,000
		Road dust	• Combined with landscape greening design. Choose shrubs and trees that can absorb or purify. Greening at multiple levels.	FCQATIC	EEB	$16,000
		Restaurant lampblack	• Set up a gas hood to collect and electrostatically remove oil fume devices. After treatment, the fume is led to the roof of the building from a special pipe for discharge.	FCQATIC	EEB	$3,000
	Water quality	Domestic sewage (COD, BOD5, SS, NH3-N, animal and vegetable oil)	• Set up grease traps and septic tanks for the oily waste from the restaurant is pretreated by the grease trap. It is discharged into a septic tank and pretreated together with domestic sewage. Then it is discharged into the municipal sewage pipe network and into the regional sewage plant for further processing.	FCQATIC	EEB	$8,000
	Noise	Noise from equipment such as motor vehicles and backup generators	• The generator should be fitted unit silencer and machine room sound insulation. The base adopts rubber vibration isolator; An elastic bellows is to be installed at the junction of the exhaust pipe and the exhaust port of the diesel engine; Add muffler tube; Install silencer materials at the flue outlet of the roof; The exhaust port of the fan is equipped with silencing material. • Vehicles entering and leaving the project area should be strictly prohibited, limit their driving speed, and park vehicles in accordance with regulations. At the same time, do a good job of greening the project. Make a reasonable mix of trees, shrubs and grass to form a continuous dense barrier zone.	FCQATIC	EEB	$2,000

Item	Impact Factor	Potential Impact and/or Issues	Mitigation Measures	Implementing Entity	Supervising Entity	Source of funds
	Solid waste	Domestic waste, kitchen waste, waste grease and waste packaging	• Should be equipped with household garbage bins and waste packaging garbage bins. And the local health department regularly visits to collect garbage. The final disposal of garbage should be carried out in the designated place. • Waste grease and kitchen waste produced by grease traps and oil fume removal devices. Entrust a recycling company for recycling and disposal.	FCQATIC	EEB	$2,000

Notes:

ADB = Asian Development Bank; **C&D** = construction and demolition waste; **CEMP** = Construction environmental management plan; **EA** = executing agency; **EMEC** = external monitor environmental consultant; **EHS** = environment, health & safety; **EIT** = environmental impact table; **EMP** = environmental management plan; **EMR** = environmental monitoring report; **EMS** = Environmental Monitoring Station; **EEB** = Ecology and Environmental Bureau; **ESE** = environmental supervision engineer; **FSR** = feasibility study report; **GPMO** = Guangxi project management office; **GRM** = grievance redress mechanism; **GZAR** =Guangxi Zhuang Autonomous Region; **IA** = implementing agency; **IEE** = initial environmental examination **LDI** = local design institute; **PCR** = project completion report; **PIE** = project implementing entity; **PMC** = project management consultant; **PPE** = personal protective equipment; **PPTA** = project preparation technical assistance; **SEC** = startup environment consultant; **RP** = resettlement plan GDAIGCL =Guangxi Daxin Anping Investment Group Company Ltd;GCCIIDG=Guangxi Chongzuo City Industrial Investment Development Group ;CXIDCL=Chongzuo Xinghe Investment development Co. LTD;BU=Baise University; GBNACL=Guangxi Baise No. 1 Agricultural Development Co. LTD;FCQATIC =Fangchenggang City Fangcheng District Agricultural Tourism Investment Co.;SS = suspended particles; TSP = Total suspended particles; VOC = volatile organic compound ,CO=Carbon mono oxide, COD=Chemical Oxygen Demand,BOD_5=Biological Oxygen Demand, NH_3-N =Ammonium Nitrate

14. The mitigation measures defined in the EMP will be (i) checked and where necessary updated by the design institutes and the EMP subsequently updated; (ii) incorporated into tender documents (where appropriate), construction contracts, and operational management plans; and (iii) implemented by contractors and PIEs under supervision of GPMO. The effectiveness of these measures will be evaluated based on the results of the environmental monitoring conducted by local EMS, and through EMP compliance audits conducted by the external monitor environment consultant.

D. Monitoring and Reporting

15. Three types of project monitoring will be conducted under the EMP.

i. Project readiness monitoring. To be conducted by the PMC or GPMO environmental focal point.

ii. Environmental quality monitoring. To be conducted by local EMS (contracted by the PIEs) involving the collection and analyses of air quality and noise data at designated monitoring locations to assess compliance with applicable environmental quality and emission standards during construction.

iii. Compliance monitoring or auditing. To be conducted by the ESE (contracted by the PIEs) and external monitor environment consultant to verify EMP compliance during project implementation. The external monitor environment consultant will function as an external monitor/auditor for ADB.

16. ADB will oversee project compliance based on the quarterly project progress reports and semi-annual environmental monitoring reports provided by GPMO and site visits (generally 1-2 times/year). Monitoring and reporting arrangements for the six subprojects are described below.

17. **Project readiness monitoring.** Before construction, the PMC will assess the subprojects' readiness on environmental management based on a set of indicators (Table EMP-3) and report it to ADB and PMO. This assessment will demonstrate that environmental commitments are being carried out and environmental management systems are in place before construction starts or suggest corrective actions to ensure that all requirements are met.

Table EMP-3: Project Readiness Assessment Indicators

Indicator	Criteria	Assessment
EMP update	✓ EMP was updated after technical detail design & approved by ADB	Yes No
Compliance with loan covenants	✓ The borrower complies with loan covenants related to project design and environmental management planning	Yes No
Public involvement effectiveness	✓ Meaningful consultation completed ✓ GRM established with entry points	Yes No Yes No
Environmental supervision and monitoring in place	✓ Environmental Specialist in PMC ✓ Staff environmental focal points appointed by GPMO and PIEs ✓ Environmental supervision engineers (ESE) contracted by PIEs ✓ Environment monitoring stations (EMS) contracted by PIEs ✓ External Monitor Environment Consultant (EMEC) is in place	Yes No Yes No Yes No Yes No Yes No

Bidding documents and contracts with environmental safeguards	✓ Bidding documents and contracts incorporating the environmental activities and safeguards listed as loan assurances ✓ Bidding documents and contracts incorporating the environmental contract clauses listed in Section J of the EMP	Yes No Yes No
EMP financial support	✓ The required funds, if applicable, have been set aside for EMP implementation	Yes No

18. **Environmental monitoring.** Table EMP-4 shows the environmental monitoring program designed for the six subprojects, defining the scope, location, parameter, duration and frequency, and responsible agencies, for monitoring during the construction. No environmental monitoring is deemed necessary for the operational stage. Environmental monitoring will include monitoring of air quality and noise level during construction. These will be conducted by local EMSs (contracted by the PIEs). The selection of monitoring locations is based on distances from the subproject sites, number of households and populations affected, and the extent of sensitivity to air and noise impacts (e.g. residential household, school).

19. The monitoring results will be compared with relevant PRC performance standards (Table EMP-5). Non-compliance with these standards will be highlighted in the EMRs. Monitoring results will be submitted by the EMSs to the PIEs, ESE and local EEBs monthly. In turn, the PIEs will submit the data to GPMO and PMC also monthly. GPMO will then submit to ADB in the internal semi-annual EMRs (prepared with the support of the PMC -Table EMP-6). External environment monitor consultant will also submit semi-annual external EMRs to GPMO and ADB. The EMRs (internal and external) shall be prepared as a stand-alone report in the format given in Appendix 3 of EMP).

Table EMP- 4: Environmental Monitoring Program

Monitoring Location	Item	Detection parameters	Detection frequency & duration	Implementing agency	Supervisory agency
Subproject 1: Baise University Sino-Viet Nam Cross-border Training Center (Budget: $17,000)					
I: In BU, across the street from the building closest to the following houses at the time of construction. 1. Engineering Training Center 2. Complex of the Department of Physics, Electricity and Mathematics II: Lada 1. West side of campus	Air quality	TSP	2 consecutive days per month (24 hours).	Local EMS	BU, ESE
	Noise	LAeq	2 consecutive days per month (24 hours).		
	Vibration	dB	Once a week during piling		
Subproject 2: Baise Cross-Border Agricultural Products Industry Chain Upgrading Project (Budget: $30,000)					
Liutang Tun, Yena Tun, Naji Tun, Kugu Tun	Air quality	TSP	2 consecutive days per month (24 hours).	Local EMS	GBNACL, ESE
	Noise	LAeq	2 consecutive days per month (24 hours).		
Subproject 3: Chongzuo Cold Chain Logistics Demonstration Project (Budget: $30,000)					
Construction stage					
Old Street, Old Village and San Tan Tun, Setau Township	Air quality	TSP	2 consecutive days per month (24 hours).	Local EMS	GCCII DG, ESE
	Noise	LAeq	2 consecutive days per month (24 hours).		
Subproject 4: Chongzuo Sino-Viet Nam Border Economic Cooperation Zone Demonstration Project (Phase II) (Budget: $60,000)					
Construction stage					
1. Water supply works: Nana Nong, Drainage Nong, Kham Sam 2. Road works: Xinjian Tun, Xinxingjiayuan settlement, Qinghe village, Xinhe second primary school, kindergarten 3. Construction of water supply network: residents and establishments along the streets of Jinfa, Bluguang, Na Wan and Xinxing Streets	Air quality	TSP	2 consecutive days per month (24 hours).	Local EMS	CXID CL, ESE
	Noise	LAeq	2 consecutive days per month (24 hours).		
Subproject 5: Chongzuo Daxin Sino-Viet Nam Cross-border Tourism Project (Budget: $30,000)					
Construction stage					
Renai Village, Baxing Village, Renyi Village Shangtuntun, Bubang Village, Zhumei Village, Liantun Village, Nongaitun	Air quality	TSP	2 consecutive days per month (24 hours)	Local EMS	GDAIGCL, ESE
	Noise	LAeq	2 consecutive days per month (24 hours)		
Subproject 6: Fangchenggang Sino-ASEAN Trade and Culture Exchange Center Project (Budget: $17,000)					
Construction stage					
Baikan Village	Air quality	TSP	2 consecutive days per month (24 hours).	Local EMS	FCQATIC, ESE
	Noise	LAeq	2 consecutive days per month (24 hours).		
				***Total estimated cost*: $184,000**	

Notes: BU = Baise University; **EMS** = Environmental Monitoring Station; **ESE** = environmental supervision engineer ; **LAeq** = A-weight equivalent sound pressure level； **FPTVS** = Fangchenggang Poly Tech Vocational School; **GPMO** = Guangxi project management office; **PCR** = project completion report; **PUCIC** = Pingxiang Urban Construction and Investment Company; **TSP** = total suspended particulates;

Table EMP-5: Monitoring Indicators and Applicable PRC Standards [1]

Phase	Indicator	Standard
Construction	TSP	Class I and Class II *Ambient Air Quality Standard* (GB 3095-2012)
	Noise limits of PME at boundary of construction site	*Emission Standard of Environmental Noise for Boundary of Construction Site* (GB 12523-2011)
Note: **PME** = powered mechanical equipment		

20. **Independent compliance monitoring.** Independent evaluation of EMP implementation will be undertaken by the ESE and the external monitor environment consultant. The estimated budget for the ESEs is $615,000. The external monitor environment consultant will be recruited as an individual consultant ($80,000) and will cover all the six subprojects. GPMO will report to the ADB, the external monitoring consultant's independent evaluation of the subprojects' adherence to the EMP, information on subproject implementation, environmental performance of the contractors, and environmental compliance through quarterly project progress reports and semi-annual external EMRs (Table EMP-6). The reports should confirm the results of independent evaluation (both contractor compliance with the EMP and the results of environmental monitoring by local EMSs), identify any environment related implementation issues and necessary corrective actions, and reflect these in a corrective action plan. The environment specialist from PMC will visit the project sites twice a year and support GPMO in developing the internal semi-annual EMRs. The reports should confirm the subprojects' compliance with the EMP and local legislation (including the PRC's environmental assessment and implementation requirements). Operation and performance of the project GRM, environmental institutional strengthening and training, public consultation, compliance with all covenants under the project and site photographs will also be included in the internal EMRs. A template for the Environmental Monitoring Report is included in the Project Administration Manual.

21. **Monitoring by ADB.** Besides reviewing the semi-annual EMRs from GPMO, ADB missions will inspect the project progress and implementation on site at least once a year. For environmental issues, inspections will focus mainly on (i) environmental monitoring data; (ii) the implementation status of subproject performance indicators specified in the loan documents for the environment, environmental compliance, implementation of the EMP, and environmental institutional strengthening and training; (iii) the environmental performance of contractors, ESEs, PMC, PIEs and GPMO; and (iv) operation and performance of the project GRM and ongoing information disclosure and public consultation. The performance of the contractors in respect of environmental compliance will be recorded and will be considered in the next bid evaluations. ADB will prepare the final Project Completion Report.

22. **Environmental acceptance monitoring and reporting.** Following the PRC's *Management Measures for Inspection and Acceptance of Environmental Protection at Construction Project Completion* (MEP Decree [2001] No. 13 and 2010 amendment), within three months after the completion of each subproject, an environmental acceptance monitoring and audit report for the subproject shall be prepared by a licensed environmental monitoring institute. The report will be reviewed and approved by the local EEB, and then reported to ADB (Table EMP-6). The environmental acceptance reports for the completed subprojects will indicate the timing, extent, effectiveness of completed mitigation and maintenance, and the needs for additional mitigation measures and monitoring during operation. The GPMO with PMC support, will prepare a draft Project Completion Report that includes an environment chapter.

[1] The project applies PRC standards. A comparison of PRC standards with internationally accepted standards (as defined in the World Bank's Environment Health and Safety Guidelines) was conducted for the IEE. The comparison confirmed that PRC standards are either internationally accepted, or have comparable standard limits with most of the international standards.

Table EMP-6: Reporting Plan

Reports		From	To	Frequency
Construction Phase				
Internal progress reports by	Internal project progress report by construction contractors, including monitoring results	Contractors	GPMO, PIEs	Monthly
Environmental monitoring and compliance monitoring reports	Environmental monitoring report	EMSs	Local EEBs, PIEs, GPMO, ESE, EMEC	Monthly
	Internal environment monitoring reports (IEMR)	GPMO (with PMC	ADB, EMEC	Semi-annually
	External environment monitoring reports (EEMR)	EMEC	GPMO, ADB	Semi-annually
Acceptance report	Environmental acceptance monitoring and audit report	Licensed institute	Local EEBs	Once; within 3 months of completion of physical works
Operational Phase				
Environmental monitoring	Quarterly project progress reports (until a PCR is issued	Local EMSs	Local EEBs, PIEs, GPMO, EEM	Quarterly
	Internal environment monitoring reports (until a PCR is issued)	GPMO (with PMC	ADB	Annually
Project completion report	Draft project completion report including environmental chapter	GPMO (with PMC	ADB	On completion
	Final project completion report	ADB	ADB	On completion

Notes: **ADB** = Asian Development Bank; **EMEC** = external monitor environment consultant; E**EMR** = external environmental monitoring report; **EMS** =Environmental Monitoring Station; **EEB** = Ecology and Environmental; **ESE** = environmental supervision engineer; **GPMO** = Guangxi project management office; I**EMR** = internal environmental monitoring report**; PCR** = project completion report; **PIE** = project implementing entity.

E. Institutional Capacity Building and Training

23. The capacity of GPMO, PIEs and contractors' staff responsible for EMP implementation and supervision will be strengthened. All parties involved in implementing and supervising the EMP must understand the goals, methods, and practices of project environmental management. The project will address the lack of capacity and expertise in environmental management through (i) institutional capacity building, and (ii) training.

24. **Institutional strengthening**. The capacities of GPMO and PIEs to coordinate environmental management will be strengthened through:

(i) Appointment of a national start up environment consultant (3 person months) to support GPMO with detailed design and tendering stage updates of environment document.
(ii) PMC will support GPMO with appointment of a national environment consultant (15 person months) to provide support on environmental management for all subprojects.
(iii) 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.
(iv) The commissioning of an independent ESE by each PIE to provide independent monitoring and verification of EMP implementation.
(v) The appointment of an external monitor environment consultant (an independent consultant) to ensure compliance with ADB's Safeguard Policy Statement (SPS 2009).

25. **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 initially by the startup environment consultant followed by the environmental specialist under PMC with support of external monitor environment consultant, as needed. The EMP and program EARF also identify institutional strengthening and training to support effective implementation of requirements.

Table EMP-7: Training Program

Training	Attendees	Contents	Times	Period (days)	No. of persons	Cost ($/person /day)	Total Cost
EMP adjustment and implementation	GPMO, PIEs, contractors	Development and adjustment of the EMP, roles and responsibilities, monitoring, supervision and reporting procedures, review of experience (after 12 months)	Twice - Once prior to, and once after the first year of subproject implementation	2	20	100	$8,000
Grievance Redress Mechanism	GPMO, PIEs, contractors, local EEBs	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: **EEB** = Ecology and Environmental Bureau; **GPMO** = Guangxi project management office; **PIE** = project implementing entity; **PPE** = personal protective equipment.

26. **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 is included in the budget for tranche 3 for wildlife trafficking enforcement capacity development.

F. Consultation, Participation, and Information Disclosure

27. **Consultation during project preparation**. Chapter VII of the IEE describes the public participation and consultation carried out during project preparation.

28. **Future public consultation plan**. All future consultations will take place before the start of construction works with due considerations to national and World Health Organization (WHO) guidelines on the coronavirus disease (COVID- 19) risks and meaningful consultation will continue throughout project implementation.

29. Plans for public involvement during construction and operation were developed during project preparation, and include public participation in (i) monitoring impacts and mitigation measures during construction and operation; (ii) evaluating environmental and economic benefits and social impacts; and (iii) interviewing the public after the subproject is completed. Public involvement formats will include site visits, interviews, workshops and investigation of specific issues (Table EMP-8).

Table EMP-8: Public Consultation Plan

Organizer	Format	No. of Times	Subject	Attendees	Budget
Construction Stage					
GPMO	Public consultation & site visit	4 times: 1 time before construction commences and 1 time each year during construction	Adjusting of mitigation measures, if necessary; construction impact; safety near construction sites; comments and suggestions	Residents adjacent to subprojects, representatives of local communities	$5,000
GPMO	Expert workshop / press conference	As needed based on public consultation	Comments / suggestions on mitigation measures, public opinions	Experts of various sectors, media	$2,000
Operational Stage					
GPMO, PIEs	Public consultation and site visits	Once in the first year	Effectiveness of mitigation measures, impacts of operation, comments and suggestions	Residents adjacent to subproject sites, social sectors	$1,500
GPMO, PIEs	Expert workshop or press conference	As needed based on public consultation	Comments and suggestions on operational impacts, public opinions	Experts of various sectors, media	$1,500
				Total budget:	**$10,000**
Notes: **GPMO** =Guangxi project management office; **PIE** = project implementing entity.					

G. Grievance Redress Mechanism

30. A Grievance Redress Mechanism (GRM) has been established as part of this EMP to receive and manage any public concerns or issues which may arise due to the subprojects. The GRM comprises: (i) a set of clear procedures developed by GPMO to receive, record, and address any concerns which are raised; (ii) specific contact details for individuals at the GPMO, PIEs and the contractors, and (iii) the local EEBs. GRM contacts should be disclosed in each construction site, the GRM contacts' information is shown in Table EMP-9.

Table EMP-9:The GRM contacts' information

Subproject	Name of the GRM contact	Contact (Phone, Tax, Email)	Method of Environmental Complain
Subproject 1	Zhou Zhi	13387768228, 0776-2827729;bsxyjjc@163.com	phone, letter, email
Subproject 2	Huang Rong	15678256050 ; gs_166@163.com	phone, letter, email
Subproject 3	Lin Yuanfeng	18878081652;cjj7824203@163.com	phone, letter, email
Subproject 4	Zhao Xiaoyun	13457850023;xinghetouzi@163.com	phone, letter, email
Subproject 5	Li Zining	13768215863;412044146@qq.com	phone, letter, email
Subproject 6	Zhong Jin	18977049005;376308902@qq.com	phone, letter, email

31. All contractors and work staff will be briefed by the GPMO on the GRM. Contractors and workers will be instructed to be courteous to 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, who will immediately report the issue to the PIEs or GPMO for action.

32. There are multiple entry/communication 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 semi-annual environmental monitoring reports up to the project completion report.

33. 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 PMC environment specialist. 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 through step 1, the contractor has the obligation to forward the complaint to the GPMO complaint center, the PIEs and local EEBs. The PIEs and local EEBs 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 environment specialist of PMC 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

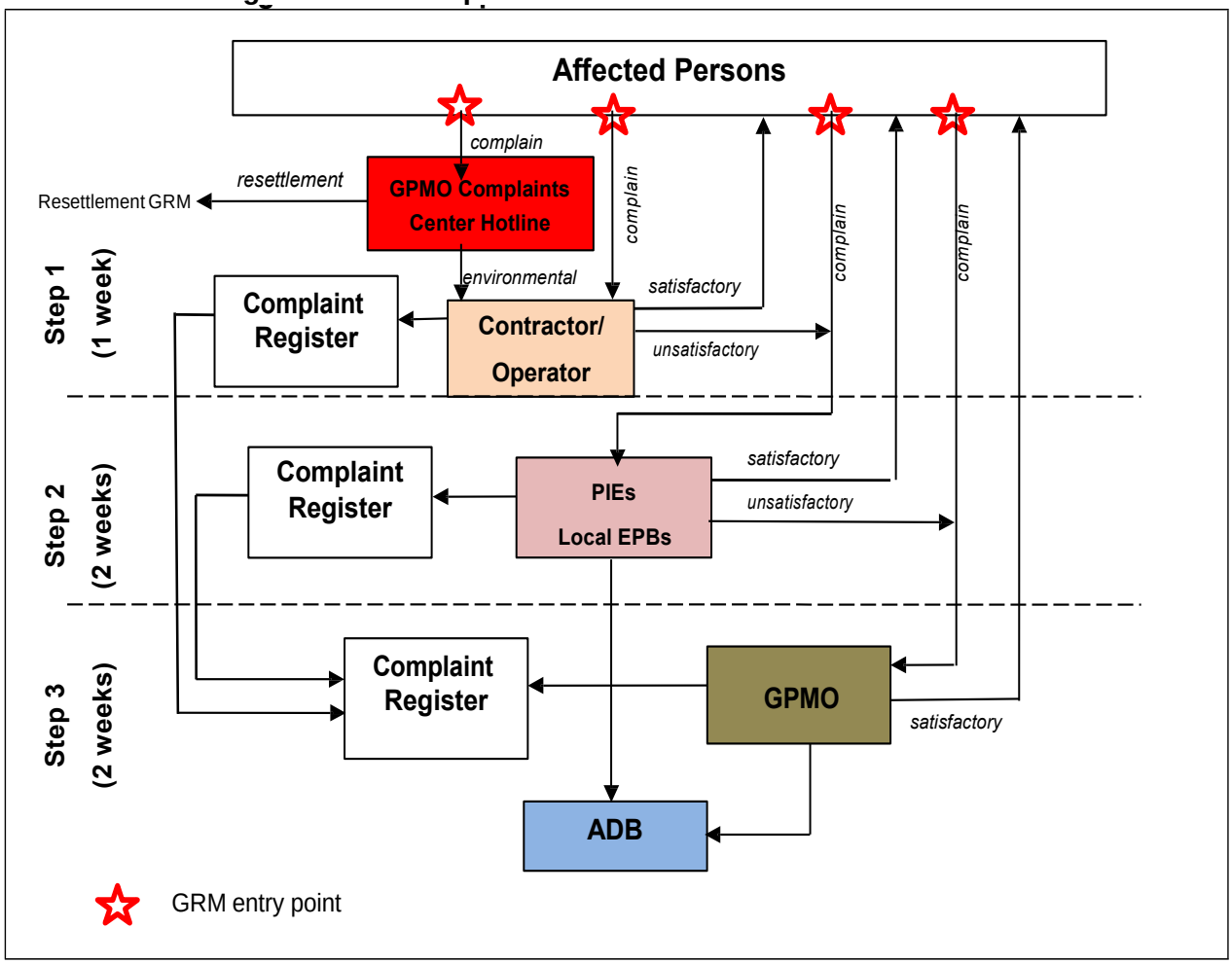
operator, local EEB, and GPMO). The hearing shall identify a solution acceptable to all, and formulate an action plan.

34. The tracking and documentation of grievance resolutions by GPMO will include: (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.

35. At any time, an AP may contact ADB (East Asia Department) directly, including the ADB Resident Mission in the PRC.

36. 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.

Figure EMP-1: Proposed Grievance Redress Mechanism



H. Cost Estimates

37. The total cost for EMP implementation comprises: (i) mitigation measures (Table EMP-2), (ii) environmental monitoring by local EMSs (Table EMP-4), (iii) supervision of EMP implementation by ESE, (iv) public consultation (Table EMP-7), (v) training (Table EMP-8), and (vi) the compliance monitoring and reporting by external monitoring consultant. The total cost is summarized in Table EMP-10 and is $1.492 million. Of this total the mitigation cost of $294,000 has been included in the civil works costs in the contractor bids for implementing environmental mitigation measures for air quality, noise, water quality and solid waste on construction sites. The budget allocation is indicated in the notes accompanying Table EMP-10.

Table EMP-10: Estimated Budget for Environmental Management Plan Implementation

EMP Item	Estimated Cost	
	EA or PIE Funded	ADB Funded
Environment Training[1]		$15,000
Wildlife Trafficking Training[1]		$30,000
Mitigation measures[2]	$294,000	
Environmental monitoring by local EMS[3]		$184,000
Environmental supervision by ESE[4]	$615,000	
Startup support environment consultant (3 months national@8000) [5]		$24,000
Environmental management/coordination by Environment Specialist of PMC (30 months national@8000) [5]		$240,000
Compliance monitoring by External Environment Monitoring Consultant (10 months@8000)[5]		$80,000
Public consultation[6]		$10,000
Subtotal:	$909,000.00	$583,000.00
Total:	**$1,492,000.00**	

Notes: ADB = Asian Development Bank; **EA** = executing agency; **EEMC** = external environmental monitor consultant; **EMP** = environmental management plan; **EMS** = Environmental Monitoring Station; **ESE** = environmental supervision engineer; **PMC** = project management consultant; **PIE** = project implementing entity.

[1] Included in PMC training budget
[2] Included in civil works contract - contractors' bids
[3] Included in Project Management Consultant Services
[4] Included in Supervision Engineer Costs paid by PIEs
[5] Included in Project Management Consultant Services
[6] Included in Project Management Consultant Services

38. Excluded from the budget are (i) infrastructure costs which relate to environment and public health, but which are already included in the project direct costs and (ii) remuneration for the GPMO environment focal point and consulting packages for the non-structural components, (covered elsewhere in the project budget).

39. Contractors will bear the costs for all mitigation measures during construction, including those specified in the tender and contract documents as well as those to mitigate unforeseen impacts due to their construction activities. The PIEs will bear the costs related to mitigation measures during operation (e.g. provision of PPE to students and teachers during training in subproject 2).

I. Mechanisms for Feedback and Adjustment

40. The EMP is a living document. The need to update and adjust the EMP will be reviewed when there are design changes, changes in construction methods and program, unfavorable environmental monitoring results, monitoring locations are no longer appropriate, or mitigation measures are inadequate or ineffective. Based on environmental monitoring and reporting systems in place, GPMO (with the support of the PMC) shall assess whether further mitigation measures are required as corrective action, or improvement in environmental management practices is required. GPMO will inform ADB promptly on any changes to the project and needed adjustments to the EMP. The updated EMP will be submitted to ADB for review and approval, and will be disclosed on the ADB project website, if required.

EMP Appendix 1: Environmental Site Inspection Checklist

Note: This form is designed for use by PIEs during site inspection and may not be exhaustive. Modifications and additions may be necessary to suit individual projects and to address specific environmental issues and mitigation measures. PIEs shall coordinate their supervision works with the Construction Supervision Companies.

PIE Name: _____
Name of facility: _____
Site Location: _____
Construction stage: _____
Inspection Date: _____
Inspection Time: _____
Weather: _____
Inspected by: _____

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
CEMP, GRM, information disclosure				
1. Has the contractor appointed an environment supervisor and is the supervisor on-site?				
2. Is a CEMP established?				
3. Is information pertaining to construction disclosed at construction site (including construction period, contractor information, etc.)?				
4. Is the Grievance Redress Mechanism (GRM) disclosed at construction site?				
Soil erosion and contamination				
5. Are intercepting ditches and drains constructed to prevent runoff entering construction sites and divert runoff from sites to existing drainage?				
6. Are disturbed areas stabilized after earthworks have ceased, and re-vegetated?				
7. Are chemicals/hazardous products and waste stored on impermeable surfaces in secure, covered areas?				
8. Is there evidence of oil spillage?				

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
9. Are spill kits / sand / saw dust used for absorbing chemical spillage readily accessible?				
10. Are chemicals stored and labeled properly?				
Air quality control				
11. Are construction sites regularly watered?				
12. Are stockpiles of dusty materials covered or watered and cement debagging process undertaken in sheltered areas?				
13. Are trucks carrying earth, sand or stone covered with tarps or other suitable cover to avoid spilling and dust?				
14. Is equipment well maintained? (any black smoke observed, please indicate the plant/equipment and location)				
15. Are there enclosures around the main dust-generating activities?				
16. Does the contractor regularly consult with PIE, IA, students as well as nearby residents to identify concerns?				
17. Was air quality monitoring conducted since the last inspection? If yes, present results. If no, is there any evidence suggesting that monitoring should be conducted?				
Noise				
18. Is there evidence of excessive noise? If yes, describe location and equipment.				
19. Does the contractor undertake regular equipment maintenance, and ensure compliance with relevant PRC standard?				
20. Are sites for concrete-mixing and similar activities located at least 300 m from sensitive areas?				

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
21. Is the CNP (Construction Noise Permit) valid for work during restricted hours?				
22. Do air compressors and generators operate with doors closed?				
23. Is idle plant/equipment turned off or throttled down?				
24. Are noise mitigation measures adopted (e.g. use noise barrier / enclosure)?				
25. Was noise monitoring conducted since the last inspection? If yes, present results.				
26. Does the contractor regularly consult with PIE, IA, students and teachers as well as nearby residents to identify concerns related to noise?				
Surface water pollution				
27. Are wastewater treatment systems being used and properly maintained on site? (e.g. desilting tank)				
28. Is construction wastewater and domestic wastewater discharged to sewer systems (if possible), or are on-site treatment facilities provided to ensure compliance with effluent discharge standard?				
29. Are there any wastewater discharged to the storm drains?				
Solid waste management				
30. Is the site kept clean and tidy? (e.g. litter free, good housekeeping)				
31. Are separate chutes used for inert and non-inert wastes?				
32. Are separated labeled containers/ areas provided for facilitating recycling and waste segregation?				

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
33. Are construction wastes / recyclable wastes and general refuse removed off site regularly?				
34. Are chemical wastes, if any, collected and disposed of properly by licensed collectors?				
Health and safety				
35. Is safe supply of clean water and an adequate number of latrines provided for workers?				
36. Are garbage receptacles provided at construction site?				
37. Is personal protection equipment (PPE) provided for workers in accordance with relevant health and safety regulations?				
38. Does the contractor have an emergency response plan to take actions on accidents and emergencies?				
39. Are clear signs placed at construction sites in view of the students and staff as well as the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations etc., and raising awareness on safety issues?				
40. Are all construction sites made secure, discouraging access through appropriate fencing?				
41. Are traffic control measures (speed control, access control) applied?				
42. Are fire extinguishers / fighting facilities properly maintained and not expired? Escape not blocked / obstructed?				
Vegetation				
43. Is there any evidence of excessive destruction of existing vegetation where no construction activity is occurring?				
44. Are disturbed areas properly re-vegetated after completion of civil works?				

Inspection Item	Yes	No	N.A.	Remarks (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/ preventative actions)
Physical cultural resources				
45. Have any relics been found, or has there been any evidence of the potential for relics? If yes, ensure appropriate measures taken to preserve them.				
Others				
46. Any other problems identified or observations made?				

_____

Date, Name and Signature of Site Inspector

EMP Appendix 2: Environmental Contract Clauses for Inclusion into Tender Documents and Civil Works Contracts

The following contract clauses for safeguarding the environment during construction shall be incorporated into all the tender documents and works contracts.

1. Construction time:

   1.1 There shall be no nighttime (between 22:00 and 06:00 hours) construction. Piling works shall also be prohibited between 12:00 and 14:30 hours.

2. Protection of air quality

   2.1 Watering of unpaved areas and exposed dust-prone stockpiles shall be undertaken at least two times each day except on rainy days

   2.2 Dust-prone materials shall be stored in areas with shelters on four sides and on top. If such materials must be stored in open area, they shall be covered with strong tarpaulin.

   2.3 Vehicle speed in unpaved areas shall be limited to ≤ 8 km/h. Speed limit signs shall be posted in these areas.

   2.4 Construction site exits shall be paved with gravel or asphalt

   2.5 Wheel washing equipment shall be installed, or wheel washing shall be conducted manually at each exit of the works area and asphalt/concrete mixing station to prevent trucks from carrying muddy or dusty substance onto public roads.

   2.6 Vehicles with open load-carrying trays, which transport potentially dust-producing materials, shall have proper fitting sides and tail boards. Dust-prone materials shall not be loaded to a level higher than the side and tail boards and shall always be covered with s strong tarpaulin.

   2.7 Construction vehicles and machinery shall be regularly maintained to minimize exhaust emissions from these sources.

   2.8 Unauthorized burning of construction and demolition waste material and refuse shall be subject to penalties for the Contractor and withholding of payment.

3. Protection of the acoustic environment

   3.1 Machinery and equipment shall be maintained and repaired regularly and properly to keep them in good working condition and to minimize noise.

   3.2 Low noise machinery or equipment with sound insulation shall be deployed.

   3.3 Temporary noise barriers or hoardings shall be erected around the equipment to shield the noise from equipment.

   3.4 Suitable hearing protection (such as earmuffs) shall be provided to construction workers when working near noisy machinery such as during piling.

   3.5 The use of horns is forbidden unless absolutely necessary. The use of whistles shall be minimized.

3.6 Noisy activities affecting other site users such as students in training classes or taking examinations shall be avoided and the deployment of low noise machinery and temporary noise barrier shall be adopted.

4. Protection of water quality

4.1 Runoff from construction sites shall be collected with drainage ditches to prevent runoff containing muddy water from polluting nearby roads, land and water bodies.

4.2 Oily-water separators and sedimentation tanks shall be installed and operated on construction sites to treat process water and muddy runoff with high concentrations of total petroleum hydrocarbon and suspended solids. If necessary, flocculants such as polyacryl amide shall be used to facilitate sedimentation.

4.3 Portable toilets and small package wastewater treatment plants and/or septic tanks shall be provided on construction sites for the workers. If there are nearby public sewers, interim storage tanks and pipelines shall be installed to convey wastewater to public sewers.

4.4 Fuels, oil, and other hazardous materials on construction sites shall be stored within secured areas on impermeable surfaces protected by bunds and provided with cleanup kits.

4.5 Chemical spills into drains and water bodies shall be promptly cleaned up according to PRC norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to PRC norms and codes. Records must be handed over without delay to the GPMO and local EEB.

5. Protection of biological resources and wildlife

5.1 Construction workers are prohibited from capturing any wildlife during construction.

5.2 Where a tree has to be removed or an area of grassland disturbed, trees shall be replanted and the area revegetated after construction.

5.3 Tree planting shall be done by planting 5 new trees for each tree removed for the project. The location for planting the trees shall be identified during implementation stage.

5.4 Tree planting shall use species of local provenance. Planting of exotic or invasive species shall be prohibited.

6. Solid waste management

6.1 The re-use of C&D wastes on the project shall be maximized.

6.2 Store all refuse and C&D waste generated on construction sites shall be stored in designated areas and regularly removed from these locations for disposal or reuse.

7. Types of refrigerants

7.1 Permitted refrigerants for commercial cold storage facilities include natural refrigerants - hydrocarbons (HCs), ammonia (NH_3) and carbon dioxide (CO_2), and lower GWP hydrofluorocarbons (HFCs).

7.2 Refrigerants that destroy the ozone layer, such as R11, R12, R113, R114, r115, R500, R502, etc., are prohibited.

8. Construction site sanitation

8.1 Adequate and functional systems for sanitary conditions, toilet facilities, waste management, labor dormitories and cooking facilities shall be provided.

8.2 The site shall be effectively cleaned and disinfected. During site formation, the site shall be sprayed with phenolated water for disinfection. Toilets and refuse bins shall be disinfected and timely removal of solid waste shall be ensured.

8.3 Rodents on site shall be exterminated at least once every 3 months. Mosquitoes and flies shall be exterminated at least twice each year.

8.4 Public toilets shall be provided in accordance with the requirements of labor management and sanitation departments in the living areas on construction site, and designated staff responsible for cleaning and disinfection shall be appointed.

8.5 Construction site domestic wastewater shall be discharged into the municipal sewer system or treated on-site using portable systems or septic tanks.

9. Occupational safety

9.1 At least one environment, health and safety (EHS) officer shall be appointed to manage occupational health and safety risks on construction sites.

9.2 Personal protective equipment (PPE) (safety hats and shoes and high visibility vests) shall be provided to all construction workers, with strict enforcement on all workers wearing PPE. Personal protective equipment (PPE) such as goggles, gloves and respirators shall be provided to construction workers doing interior fit-out to minimize skin exposure to chemicals and inhalation of VOC.

9.3 Ear plugs for hearing protection shall be provided to workers operating and working near noisy power mechanical equipment.

10. Food safety

10.1 Food hygiene in canteens on site shall be inspected and supervised regularly.
Canteen workers must have valid health permits.

10.2 If food poisoning is discovered, effective control measures shall be implemented immediately to prevent it from spreading.

11. Disease prevention and health services

11.1 All construction workers shall undergo a physical examination before starting work on site. If infectious disease is found, the patient must be isolated for treatment to prevent the disease from spreading. Physical examination shall be conducted on 20% of the workers every year from the second year onwards.

11.2 Health clinic shall be established at location where workers are concentrated, which shall be equipped with common medical supplies and medication for

simple treatment and emergency treatment for accidents.

11.3 Induction and training by local health departments on prevention and management of communicable diseases shall be provided.

12. Social conflict prevention

12.1 The following shall be prioritized: (i) employ local people for works, (ii) ensure equal opportunities for women and men, (iii) pay equal wages for work of equal value and pay women's wages directly to them; and (iv) not employ child or forced labor.

13. Community health and safety

13.1 A traffic control and operation plan shall be prepared together with the local traffic police prior to any construction. The plan shall include provisions for diverting or scheduling construction traffic to avoid morning and afternoon peak traffic hours, regulating traffic at road crossings with an emphasis on ensuring public safety through clear signs, controls, and planning in advance.

13.2 Construction billboards, which include construction description, schedule, responsible person and complaint phone number, shall be erected at the entry to each construction site and construction staging area.

13.3 Residents and businesses shall be informed in advance of noisy construction activities such as piling, given the dates and duration of expected disruption, and made aware of the project grievance redress mechanism.

13.4 Clear signs shall be placed at construction sites in view of the public, warning people of potential dangers such as moving vehicles, hazardous materials, excavations, etc. and raising awareness on safety issues.

13.5 All construction sites shall be made secure and access by members of the public shall be discouraged through appropriate fencing, signage and/or security personnel, as appropriate.

14. Utility interruption

14.1 Contractors shall assess construction locations in advance and identify potential for disruption to services and risks before starting construction. Any damage or hindrance/disadvantage to local businesses caused by the premature removal or insufficient replacement of public utilities shall be subject to full compensation, at the full liability of the contractor who causes the problem.

14.2 If temporary disruption is unavoidable the contractor shall, in collaboration with relevant local authorities such as power company, water supply company and communication company, develop a plan to minimize the disruption and communicate the dates and duration in advance to affected persons.

15. Grievance redress mechanism

15.1 The contractor's EHS officer shall be responsible for managing the grievance redress mechanism (GRM) on site for receiving and handling complaints. In case

of a complaint, the contractor shall notify the GPMO within one week and shall advise on the agreed solution.

15.2 The contractor shall disclose the GRM to affected persons before construction begins at the main entrance to each construction site.

15.3 The contractor shall maintain and update a Complaint Register to document all complaints.

EMP Appendix 3: Outline of Environmental Monitoring Reports

A. Internal Environmental Monitoring Report (IEMR)

The borrower is required to prepare and submit to ADB semiannual internal environmental monitoring reports that describe progress with implementation of the project EMP, compliance issues, and corrective actions. A sample outline that can be adapted as necessary is provided below.

1. **Introduction**
   Report purpose
   Project implementation progress

2. **Verification of environmental assessment preparation and approval before commencement of construction**
   Verify that each project implementing agency (i) produced an environmental assessment document, and (ii) received ADB's no-objection before commencement of construction. Include a copy of the document providing approval in appendixes.

3. **Incorporation of environmental requirements into project contractual arrangements**
   Confirm that EMP requirements were incorporated into contractual arrangements, such as with contractors or other parties. Provide example clauses of contractor bidding documents in the appendixes.

4. **Summary of environmental mitigations and compensation measures implemented during the reporting period**
   Summarize key mitigations listed in the subprogram's EMP. This may include measures related to air quality, water quality, noise quality, pollution prevention, biodiversity and natural resources, health and safety, physical cultural resources, capacity building, and others.

5. **Adequacy of public consultation / disclosure activities**
   Provide information on the number and type of public consultation and disclosure events and key issues raised for all project environmental assessments. It may be useful to provide this information in a table (See Table 1 example).

6. **Summary of environmental monitoring**
   Compliance Inspections. Describe the inspection schedule and methods by the PMU and/or government. Include inspection reports as appendixes. Provide information on mitigation compliance and effectiveness.

   Emission Discharge (Source) Monitoring Program (if relevant). Include summary of monitoring, results, and assessment of results. Note that discharge levels should be compared with the relevant discharge standards and/or performance indicators noted in the EMP. Noncompliance should be highlighted for attention and follow-up.

   Ambient Monitoring Program (if relevant). Include summary of monitoring, results, and assessment of results. Note that ambient environmental conditions should be compared to the relevant ambient standards and/or performance indicators noted in the EMP. Any exceedances should be highlighted for attention and follow-up.

7. **Key environmental issues**

   Key issues identified during this reporting period (including any grievances or

complaints made and how they have been recorded/documented)
Action taken during this reporting period
Additional action required during the next reporting period

8. GRM

Establishment and operation of the GRM and its conclusions
Project complaint record and solution

9. Conclusion

Overall progress of implementation of environmental management measures
Problems identified and actions recommended

Appendixes

1. Site Inspection / Monitoring Reports
2. Ambient Monitoring Results
3. Public Consultation Results
4. Photographs
5. Others

Note: compliance in each section could be described in qualitative terms or be evaluated based on a ranking system, such as the following:

1. Very Good (all requirements implemented)
2. Good (most requirements implemented)
3. Fair (some requirements implemented)
4. Poor (few requirements implemented)
5. Very Poor (very few or no requirements implemented)

Additional explanatory comments should be provided as necessary.

B. External Environmental Monitoring Report (EEMR)

The borrower, through external monitor engaged by the implementing agency, is required to prepare and submit to ADB semiannual external environmental monitoring reports that describe third party review and validation of the implementation of the project EMP, compliance issues, and corrective actions. A sample outline that can be adapted as necessary is provided below.

1. **Executive Summary**
   summarize findings of the external monitoring report.
2. **Introduction**
   Background of Project.
   Purpose of the report.
3. **Environmental Safeguard in the Project**
   Describe the environmental safeguard assessments carried out and documentation prepared for the project from both ADB and Government requirements.
4. **Changes and Adjusted Safeguard Measures**
   Describe if there are any changes in the project design and related safeguards measures.
5. **Implementation Arrangement**
   Describe overall project implementation arrangement including safeguard implementation arrangement.
6. **Status of Environmental Safeguard Implementation**
   Based on the review of internal environmental monitoring report and field verifications, present the status of environmental safeguards implementation. This should cover status of (i) environmental permits/approvals, (ii) capacity building activities, (iii) appointment of environmental focal persons within PMO, PIUs, CSC, Contractors etc. (iv) training and awareness programs, (v) environmental monitoring, (vi) pollution control and waste management, (vii) Occupation and Community health and safety, (viii) GRM, (ix) reporting and disclosure of documents, (x) and monitoring of safeguards implementation.
7. **Overall Compliance with EMP**
   Describe overall compliance status and additional measures/corrective actions to fill the gaps.
8. **Key environmental issues and way forward**
   Present key issues identified and follow up action plan.
9. **Conclusion**
   Conclusion of external monitoring.

Appendixes

1. Internal environmental monitoring report
2. Field inspection records.
4. Photographs
5. Others

EMP Appendix 4: COVID 19 – Pandemic: Application of international good practice OHS at the workplace

1. Projects involving construction works frequently involve a large work force, together with suppliers and supporting functions and services. The work force may comprise workers from international, national, regional, and local labor markets. They may need to live in on-site accommodation, lodge within communities close to work sites or return to their homes after work. Supply chains may involve international, regional and national suppliers facilitating the regular flow of goods and services to the project (including supplies essential to the project such as fuel, food, and water). As such, there will also be a regular flow of parties entering and exiting the site; support services, such as catering, cleaning services, equipment, material and supply deliveries, and specialist sub-contractors, brought in to deliver specific elements of the works. Given the complexity and the concentrated number of workers, the potential for the spread of infectious diseases, such as CVOID-19, in projects involving construction is extremely serious, as are the implications of such a spread.

2. This note presents good international practices to address the COVID-19 pandemic at the construction sites. The contractors are required to comply with the following good practices.

A. Pre-construction Phase

- Develop COVID-19 Safety Management Plan
  - The contractor will develop a COVID-19 Safety Management Plan with the procedures to be followed to address COVID-19 risks in the construction works. The plan will be submitted to PMO for approval.
  - The plan should identify measures to address the COVID-19 situation. What will be possible will depend on the context of the project: the location, existing project resources, availability of supplies, the capacity of local emergency/health services, the extent to which the virus already exists in the area.
  - The contractor should propose a designated person who will be responsible for implementing the plan.

B. Construction Phase

3. Preventive Measures by maintaining physical distancing among workers, providing respiratory and hand hygiene facilities at the work sites, and regular cleaning and disinfection of the commonly used areas.

- **Physical Distancing measures:**
  - Keep a distance of at least 1 meter between people and minimize physical contact, ensure strict control over external access, and queue management (marking on the floor, barriers).
  - Reduce density of people in the building (no more than 1 person per every 10 m^2), physical spacing at least 1 m apart for workstations and common spaces, such as entrances/exits, lifts, pantries/canteens, stairs, where congregation or queuing of employees or visitors/clients might occur.
  - Minimize the need for physical meetings, e.g., by using teleconferencing facilities.
  - Avoid crowding by staggering working hours to reduce the congregation of employees at common spaces such as entrances or exits.
  - Implement or enhance shift or split-team arrangements, or teleworking.
  - Defer or suspend workplace events that involve close and prolonged contact among participants, including social gatherings.

- Minimize the movement of local workers in and out of the site (e.g., avoid workers returning home to affected areas, or returning to site form affected areas).
- Minimize the workers' contact with local community.

- **Respiratory measures:**
  - Promote respiratory etiquette by all people at the workplace. Ensure that medical face masks and paper tissues are available at the workplace, for those who develop a runny nose or cough at work, along with bins with lids for hygienic disposal.
  - Develop a policy on wearing a mask or a face covering in line with national or local guidance. Masks may carry some risks if not used properly.
  - If a worker is sick, they should not come to work if a member of staff or a worker feels unwell while at work, provide a medical mask so that they may get home safely.
  - Where masks are used, whether in line with government policy or by personal choice, it is especially important to ensure safe and proper use, care and disposal.

- **Hand Hygiene measures:**
  - Regular and thorough handwashing with soap and water or hand hygiene with alcohol-based hand-rub (a) before starting work, before eating, frequently during the work shift, especially after contact with co-workers or customers, (b) after going to the bathroom, after contact with secretions, excretions and body fluids, after contact with potentially contaminated objects (gloves, clothing, masks, used tissues, waste), and immediately after removing gloves and other protective equipment but before touching eyes, nose, or mouth.
  - Hand hygiene stations, such as hand washing and hand rub dispensers, should be put in prominent places around the workplace and be made accessible to all staff, contractors, clients or customers, and visitors along with communication materials to promote hand hygiene.

- **Cleaning and Disinfection** off all site facilities, including offices, accommodation, canteens, and common spaces:
  - Cleaning (soap, water, and mechanical action) to remove dirt, debris, and other materials from surfaces. Disinfection of dirty surfaces and objects only after cleaning.
  - Most common disinfectants – sodium hypochlorite (bleach) of surface at concentration 0.1% or alcohol at least 70% concentration for surfaces which can be damaged by sodium hypochlorite.
  - Priority disinfection of high-touch surfaces - commonly used areas, door and window handles, light switches, kitchen and food preparation areas, bathroom surfaces, toilets and taps, touchscreen personal devices, personal computer keyboards, and work surfaces.
  - Disinfectant solutions must always be prepared and used according to the manufacturer's instructions, including instructions to protect the safety and health of disinfection workers, use of personal protective equipment, and avoiding mixing different chemical disinfectants.
  - Provide appropriate PPEs to the cleaners.
  - Manage the waste as the medical waste and dispose of it in accordance with local regulations.

- **Detection Measures** through regular screening of workers and continuous monitoring
  - Control and document the entry/exit to the work site for both workers and other parties.
  - Prevent sick workers from entering the site through checking temperatures of workers and other people entering the site. Require self-reporting prior to entering the site.

- All workers to self-monitor their health, possibly with the use of questionnaires, and take their body temperature regularly.
- Thermal screening at the workplace to be considered only in the context of a combination of measures for prevention and control of COVID-19 at the workplace and along with risk communication.

- **Response Measures** if workers are found with COVID symptoms or workplaces reported to have been contaminated by infected persons**:**
  - Workers who are unwell or who develop symptoms consistent with COVID-19 to stay at home, self-isolate, and contact a medical professional or the local COVID-19 information line for advice on testing and referral (consider telemedicine and flexible sick leave policy).
  - Standard operating procedures to be prepared to manage a person who becomes sick at the workplace and is suspected of having COVID-19, including isolation, contact tracing and disinfection.
  - People who were in close contact at the workplace with persons with laboratory-confirmed COVID-19 should be quarantined for 14 days from the last time of the contact in accordance with WHO recommendations.
  - Set out differentiated procedures for the treatment of sick persons, based on the case severity. Pay workers throughout periods of illness, isolation, or quarantine.
  - Set aside a part of worker accommodation for precautionary self-quarantine.
  - Establish communications with local medical services and refer sick workers to there.

- **Adjusting Work Practices and Manage Work Related Travels**
  - Consider changes to work processes and timings to minimize contact between workers (e.g., decreasing the size of work team, changing to a 24-hour work rotation).
  - Cancel or postpone non-essential travel to areas with community transmission of COVID-19.
  - Provide hand sanitizer to workers who must travel, advise workers to comply with instructions from local authorities where they are travelling, as well as information on whom to contact if they feel ill while travelling.
  - Workers returning from an area where COVID-19 transmission is occurring should monitor themselves for symptoms for 14 days and take their temperature twice a day; if they are feeling unwell, they should stay at home, self-isolate, and contact a medical professional.

- **Communication and Contact with the Community**
  - Carefully manage the relations with the community with clear and regular communication.
  - Made aware of the procedures put in place at the site to address issues related to COVID-19.
  - Practice social distancing with the local community.

- **Risk communication, training, and education**
  - Provide posters, videos, and electronic message boards to increase awareness of COVID-19 among workers and promote safe individual practices at the workplace, engage workers in providing feedback on the preventive measures and their effectiveness.
  - Provide regular information about the risk of COVID-19 using official sources, such as government agencies and WHO, and emphasize the effectiveness of adopting protective measures and counteracting rumors and misinformation.

- Special attention should be given to reaching out to and engaging vulnerable and marginalized groups of workers, such as those in the informal economy and migrant workers, domestic workers, subcontracted and self-employed workers, and those working under digital labor platforms.
- Train the workers on procedures in place by the project, and their own responsibilities in implementing them.

- **Additional measures for workplaces and jobs at medium risk**
  - Enhanced cleaning and disinfection of objects and surfaces that are touched regularly, including all shared rooms, surfaces, floors, bathrooms, and changing rooms.
  - Where the physical distancing of at least 1 metre cannot be implemented in full in relation to a particular activity, workplaces should.
  - consider whether that activity needs to continue, and if so,
  - take all the mitigating actions possible to reduce the risk of transmission through work organization and engineering control.
  - Enhanced hand hygiene – hand washing with soap and water or use of alcohol-based hand rub.
  - before entering and after leaving enclosed machinery, vehicles, confined spaces.
  - before putting on and after taking off personal protective equipment.
  - Personal protective equipment and training on its proper use.
  - Increased ventilation rate, through natural aeration or artificial ventilation, preferably without re-circulation of the air.

- **Additional measures for workplaces and jobs at high risk**
  - Assess the possibility of suspending the activity.
  - Adherence to hygiene before and after contact with any known or suspected case of COVID-19, before and after using PPE.
  - Use of medical mask, disposable gown, gloves, and eye protection for workers who must work in the homes of people who are suspected or known to have COVID-19.
  - Use the protective equipment when in contact with the sick person, or respiratory secretions, body fluids, and potentially contaminated waste.
  - Training of workers in infection prevention and control practices and use of personal protective equipment.
  - Avoid assigning tasks with high risk to workers who have pre-existing medical conditions, are pregnant, or older than 60 years of age.
  - Rights, duties, and responsibilities of workers and employers.
  - Collaborate with health authorities in the prevention and control of COVID-19.
  - Employers to provide engineering and administrative controls and PPE for occupational safety and health and infection prevention and control at no expenditure on the part of workers.
  - Workers to follow established measures for occupational safety and health and infection prevention and control procedures.
  - Co‐operation between management and workers and their representatives is an essential element of workplace‐related prevention measures.
  - COVID-19 and other diseases, if contracted through occupational exposure, could be considered as occupational diseases.

Annex to EMP Appendix 4: Publicly available information sources, good practices and useful links
Excerpt from ADB Internal Good Practice Advisory Note on COVID-19 Health and Safety

The following is a compendium of publicly available guidance. Numbered items are directly referred to in the SPS Policy Breakdown as presented in the Table in Section 3. Other guidance not numbered are provided for wider knowledge relating to the COVID-19 pandemic.

1. WHO - Considerations for public health and social measures in the workplace in the context of COVID-19, issued on 10 May 2020. Annex to Considerations in adjusting public health and social measures in the context of COVID-19. This annex is for those involved in developing policies and standard operating procedures to prevent the transmission of COVID-19 in the workplace, including employers, workers and their representatives, labor unions and business associations, local public health and labor authorities, and occupational safety and health practitioners. This document offers general guidance for nonhealthcare workplaces and workers in those settings.

2. WHO - Coronavirus disease (COVID-19) advice for the public, last updated 31 March 2020. Web page providing advice for the public, including on social distancing, respiratory hygiene, self-quarantine, and seeking medical advice.

3. WHO - Getting your workplace ready for COVID-19, issued on 19 March 2020. Guidance on getting your workplace ready for COVID-19. This document summarizes some general considerations for getting any business ready for work in the context of COVID-19. It does not provide technical detail but is useful as a starting point from which to develop further awareness. The document also provides some specific guidance on meetings and travel.

4. WHO - Risk Communication and Community Engagement (RCCE) Action Plan Guidance COVID-19 Preparedness and Response, issued on 16 March 2020. Guidance provides a dedicated guide on Risk Communication and Community Engagement. This plan is for communicating effectively with the public, engaging with communities, local partners, and other stakeholders to prepare and protect public health relating to COVID-19.

7. WHO - Rational use of personal protective equipment for coronavirus disease 2019 (COVID-19), issued on 27 February 2020. This document summarizes WHO's recommendations for the rational use of personal protective equipment (PPE) in healthcare and community settings, as well as during the handling of cargo. This document is intended for those who are involved in distributing and managing PPE, as well as public health authorities and individuals in healthcare and community settings, and it aims to provide information about when PPE use is most appropriate.

11. OSHA – Guidance on Preparing Workplaces for COVID-19. The guidance contains recommendations as well as descriptions of mandatory safety and health standards (based on the United States' Occupational Safety and Health Act of 1970). The recommendations are advisory only. This guidance identifies four categories of risk (low, medium, high, very high) depending on proximity to the people infected with the virus and recommends taking different level of precautions in the areas of engineering control, administrative control and PPE.

12. FIDIC - COVID-19 guidance memorandum for users of FIDIC standard forms of works contract, FIDIC has issued a guidance memorandum which contains an outline of the provisions in FIDIC's various general conditions of contract for works which may be relevant with regard to likely scenarios that are arising as a consequence of Covid-19. FIDIC's main purpose in drafting

the guidance memorandum is to help parties to a FIDIC contract to consider mutually satisfactory solutions and avoid disputes arising between them.

13. IFC - Interim Advice for IFC Clients on Preventing and Managing Health Risks of COVID-19 in the Workplace, issued on 6 April 2020. The main objective of this Interim Advice document is to collate and provide publicly available advice from internationally recognized sources to help IFC clients rapidly identify measures for preventing and managing outbreaks of COVID-19 in the workplace and for responding to community COVID-19 infection. This document is not intended to be exhaustive, and it provides generic rather than sector-specific advice. Companies in high-risk sectors should refer to sector-specific procedures and standards.

14. IFC - Interim Advice for IFC Clients on Supporting Workers in the Context of COVID-19, issued on 6 April 2020. This Tip Sheet sets out useful information to support decision making in response to the impacts of COVID-19 on workers and employment. It focuses on the following areas:

I. Health and safety, including actions to prevent transmission;
II. Job protection, including supporting workers through difficult times and building resilience for businesses to operate during and after the immediate crisis;
III. Responsible retrenchment as an option only if there is no other alternative, and how to reemploy those workers, when possible, once the situation has improved.

15. IFC – Corporate Governance Tip-Sheet for Company Leadership on Crisis Response, Facing the COVID-19 Pandemic. Issued 6 April 2020. The IFC's interim advice provides some issues to consider which may be helpful to you as company leadership. Generally applicable to any type of business, some tips may not be relevant based on the nature or size of your business, shareholding structure or other factors. Consider these as applicable.

17. IDB - Corporate Governance: COVID-19 and the board of directors, 22 March 2020. The objective of this paper is to provide indicative guidance to Boards of Directors in identifying, prioritizing and implementing a governance framework to deal with the strategy and oversight challenges that COVID-19 may present, and to provide a list of questions that can be asked by investors and that the Boards of Directors should consider for building an effective response to the COVID-19 crisis.

18. IDB – COVID-19 Guidance for Infrastructure Projects, 22 March 2020. The guide seeks to help clients identify their project's performance and capacity gaps, along with context and project-related risks, that could contribute to COVID-19 transmission. It serves to input to project decision-making process.

19. KfW - KfW DEG COVID-19 Guidance for employers, issued on 31 March 2020. The guidance document is intended to raise awareness for some topics that are relevant for employers when dealing with the virus, specifically from the perspective of international guidance on social topics and occupational health and safety.

20. ILO - ILO Standards and COVID-19 FAQ, issued on 23 March 2020 (provides a compilation of answers to most frequently asked questions related to international labor standards and COVID-19).

21. CDC UK - CDC Group COVID-19 Guidance for Employers, issued on 23 March 2020. This document is a summary of publicly-available guidance and examples of practice adopted by some CDC Group investees and fund managers. The aim is to provide a framework of thinking that can be applied to many companies and situations, but this guidance cannot cover all circumstances and not every company will be able to benefit from all of the guidance, in particular if employees

cannot work from home or practice social distancing.

22. IOM - COVID-19: Guidance for employers and business to enhance migrant worker protection during the current health crisis, 7 April 2020. The resource is designed to help employers more effectively respond to the impact of COVID-19 and to enhance protections for migrant workers in their operations and supply chains.

23. EBRD – Worker accommodation and Covid-19, April 2020. The note discusses the key issues relating to workers living in accommodation camps and considers how some of the risks could be addressed. It is aligned with good international industry practice (GIIP) and international lenders' standards and were developed by social, labor and health specialists based on their experience, drawing on the guidance of the World Health Organization (WHO).

Other Technical guidance

ILO - Safe return to work Guide for employers on COVID-19 prevention. 7 May 2020. The publication aims to provide general guidance and information to employers on how to prevent the spread of COVID-19 in the workplace, to enable workers to return to work safely while keeping the risk of contamination as low as possible. It also provides ideas on how to protect workers' mental well-being during the pandemic. This guide contains recommendations for health and safety practices and approaches to COVID-19 prevention, based on materials developed by many organizations globally, including: "General guide for preventing the spread of COVID-19 at the workplace" prepared by Belgian social partners and government experts, as well as guides developed by Manufacturing NZ, IBEC, Union Industrial Argentina, Chilean Chamber of Construction, Guayaquil Chamber of Commerce, Chamber of Agriculture in Guatemala together with various materials and guidance from the WHO.

ILO and UNICEF – Family-Friendly Policies and other Good Workplace Practices in the Context of Covid-19: Key steps employers can take. 27 March 2020. It provides general recommendations that aim to help employers strengthen support for workers and their families.

WHO - Disability Considerations during the COVID-19 outbreak, issued on 26 March 2020. This document provides mitigation actions and protective measures that can reduce the impacts of COVID-19 on advice on vulnerable groups, focusing on those with disabilities.

FIDIC - Coronavirus (COVID-19): FIDIC Guidance for Global Consulting Engineering Businesses, March 2020. The purpose of this document is to provide some guidance to FIDIC member associations and consulting engineering firms.

BIO Invest - COVID-19: ESG Guidance Note for Employers, 8 March 2020. This document provides a general Environmental, Social and Governance (ESG) guidance to employers on how to minimize business disruptions and take the most adequate actions.

UN Women – Guidance for Action: Addressing the Emerging Impact of the COVID-19 Pandemic on Migrant Women in Asia and the Pacific for a Gender-Responsive Recovery. The note mainly focuses on the emerging impacts of the COVID-19 pandemic on women migrant workers and recommendations to support governments, donors, civil society organizations, employers and the private sector in addressing those impacts.