

Safeguards Monitoring Report

2nd Semestral Report
December 2016

Cambodia: Integrated Urban Environmental Management in the Tonle Sap Basin Project

No.3311-CAM (SF) / 8295-CAM (SCF) / Grant 0454-CAM

Prepared by the Project Management Unit of the Executing Agency for the General Directorate of Public Works, Ministry of Public Work and Transport; the Implementing Agencies, Provincial Department of Public Works and Transport and Municipal Governments in Kampong Chhnang and Pursat and the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 1 December 2016)

Currency unit	–	riel (KR)
KR1.00	=	\$0.000243
\$1.00	=	KR 4,110

NOTE

In this report, "\$" refers to US dollars.

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I. EXECUTIVE SUMMARY

- Summary of EMP/RP Implementation

The project Environmental Management Plan (EMP) and the Resettlement Plan are part of the of the SAFEGUARDS, which comprises

- (i) Environment (**Category B**) -the initial Environmental examinations (IEE) for Kampong Chhnang and Pursat, environmental management plans (EMPs) for flood embankment and solid waste management in Kampong Chhnang, and drainage, riverbank erosion protection, and solid waste management in Pursat, an environment assessment and review framework (EARF)
- (ii) Resettlement (**Category B**) – Resettlement Plans (RP) for Kampong Chhnang and Pursat subprojects;
- (iii) Indigenous Peoples (**Category B**) –Indigenous Peoples Plan elements integrated into the project design, Participation Plan and Resettlement Documents to ensure social inclusiveness and meaningful participation of all ethnic groups, including the ethnic Cham and Vietnamese.

According to the PAM¹, for the **Environmental Safeguards monitoring**, the PMU environmental officer will oversee and monitor the implementation of Environmental Management Plans (EMPs). The PMIS environmental specialists will provide technical advice, guidance and support to the PMU environmental officer in overseeing EMP implementation.

The PMIS consultants will work with the PMU to update the EMPs following detailed design. The PMU will primarily be responsible for monitoring the EMPs during planning, construction, operation and maintenance.

The PMU will assess (i) compliance with the Project's environmental policies and procedures and (ii) the availability and efficient use of personnel, material and financial resources; and (iii) identification of any problems and the need for remedial actions to correct any problems that arise. The PMU shall report against these internal monitoring aspects in the quarterly project progress reports.

The project is classified as **Category B** for environment in accordance with the ADB's SPS 2009. Environmental impacts are related to siting, design, construction, and operation, and mitigation measures are incorporated in the environment management plans (EMPs). EMPs have been prepared for SWM, embankment protection, drainage, and riverbank erosion protection. The EMPs will form part of the bidding and contract documents. The potential adverse impacts during construction are expected to be temporary and will be mitigated through implementation of and compliance with the EMP. The project includes budget and institutional arrangements for EMP implementation and monitoring. Initial environmental examinations (IEEs) for two (2) subprojects (*Kampong Chhnang* and *Pursat*) will be revised to reflect design changes. Likewise, the Environmental Assessment and Review Framework (EARF) for the Community Mobilization and Environmental Improvements (Output 3) will also be updated. Potential impacts of climate change and/or natural hazards on the project were integrated as part of project design (e.g., flood risk management), and in the IEEs with recommendations for consideration during the design stage.

¹ Page 81

- Monitoring Activities
 - ✓ Monitoring activities have been limited to field inspection visits for reconnaissance of start of project implementation
 - ✓ Monitoring activities, in detail as required, are envisaged to commence in Q1/Q2 2017 as the preparation and completion of surveys and investigations for detailed design of proposed works is being accomplished with further intensification as construction activities commence in 2018
 - ✓ No immediate Key Issues or Grievances have brought to initiate remedial actions, and;
 - ✓ Key activities foreseen in the next reporting period, if required by the GDR, would address the findings and observations of the ADB Inception Mission 07-14 Dec 2016. The recommended project initiating plan of action forward is to proceed to completion of investigations and detailed designs and review

II. PROJECT OVERVIEW, GENERAL SAFEGUARD MATTERS

1. Project Overview

The aim of the project is to increased economic growth and environmental protection in towns in the Tonle Sap Basin. The outcome will be improved urban services and climate change resilience in Kampong Chhnang and Pursat municipalities. The project will enhance the urban environment, improve public health, and contribute to better quality, coverage and reliability of services to more than 100,000 residents in the two municipalities of Kampong Chhnang and Pursat. This will be achieved through an integrated program of physical and non-physical investments in priority infrastructure rehabilitation, improvement and extension; community small-scale infrastructure and behaviour change and communication initiatives; organizational and institutional development; and capacity development in project implementation, and O&M. The project incorporates climate resilience measures in infrastructure development, with support from the Pilot Program Climate Resilience (PPCR). The project is consisting of outputs as following:

Output 1: Kampong Chhnang urban area environmental improvements includes flood protection totaling 15.1 km along Tonle Sap riverbank through improvement of the existing embankment and construction of new embankment where required; construction of a new controlled landfill site of 10 ha at Phnom Tauch village (Pongro commune, Rolea Bier district) with increased capacity; provision of equipment for solid waste collection; and landfill management, including supervised closing of two open dumpsites in Kul Kuk village and Trork village (Sre Thmei commune, Rolea Bier district). It complements the Japan International Cooperation Agency's drainage project in Kampong Chhnang and GIZ's support for development of an urban master plan. Embankment protection will prevent flooding from the Tonle Sap into Kampong Chhnang town, reducing its vulnerability to flooding and providing protection to 1 in 50 year high water levels. In the dry season, outlets will accommodate the natural streams flowing into the Tonle Sap and sluice gates will avoid backflow into the town as the water rises. In the wet season, natural retention areas will retain wet season flows. The embankment is imperative for resident to have continued access to social services and economic activities in the town (e.g., rice processing mills). Improved flood protection will assist farmers in the eastern part of the municipality to increase agricultural production from two to three crops per year.

Output 2: Pursat urban area environmental improvements includes construction of about 9.9 km of primary and secondary drains in the town center with associated road improvements and improved wastewater treatment; (ii) riverbank erosion protection in

select locations along the Pursat River, including revetment and groins; (iii) development of new controlled landfill of about 28 ha at Toul Mkak village (Roleap Sangkat, Pursat town) and associated access road of about 900 meters; (iv) provision of equipment for solid waste collection; and (v) landfill management, including equipment and closure of two old open dumpsites in Toul Mkak village (Roleap Sangkat, Pursat town) and Sras Srang village (Prey Gny Sangkat, Pursat town). It complements ADB's previous support to the Dhamnak Chheukrom Irrigation System Rehabilitation (located about 40 km upstream). About 20% of the town's roads have drains with National Highway No. 5 and other main roads lacking side drains. The construction of drains in the town center will improve and strengthen the stormwater drainage system to accommodate more intensive rainfall. It will support increased economic activities in the town center (e.g., marble process and carvings), and facilitate residents' continued access to social services.

Output 3: the community mobilization and environmental improvements aims to address the climate change and environmental needs of the urban poor and vulnerable, including ethnic Cham and Vietnamese in Kampong Chhnang and Pursat—making the project more inclusive by extending benefits from large infrastructure investments. It includes improved household sanitation for IDPoor 1 and 2 in the current municipality area; climate change and hygiene awareness and action; and community small-scale infrastructure improvements in pre-identified poor and vulnerable areas in each municipality. Small-scale infrastructure improvements will be prioritized by the communities and will be financed by the project, national government and community. The output will help extend project benefits to the poor and vulnerable groups. It will be implemented in partnership with an international non-governmental organization (NGO), which must demonstrate in its proposal experience working with Tonle Sap communities, including ethnic Cham and Vietnamese. See Annex B for details and the Annex C, Package IV for the terms of reference of the NGO.

Output 4: Strengthened Sector Coordination and Operations supports the MPWT to convene national urban development task force meetings with other ministries and development partners in the urban sector (about twice per year); strengthen climate change regulations, focusing on improved building codes in provincial towns around the Tonle Sap to reflect key climate resilience features, including appropriate sanitation; and support the establishment of urban service units (or special operating agencies) for improved delivery and management of decentralized urban services. If successful, USUs will demonstrate a mechanism for the sustainability and delivery of quality decentralized urban services, which could be replicated in other municipalities. Climate change financing will support the Government in implementing the TSUADF in partnership with subnational governments around the Tonle Sap by developing a consultation program and a plan for climate change adaptation in urban areas. It complements the MPWT parallel climate change initiatives in the transport sector

Output 5: Strengthened Capacity for Project Implementation and O&M include project implementation support services for the project management (PMU) and project implementation units (PIUs) in design supervision; safeguards implementation; project and climate resilience monitoring; gender mainstreaming; community development; accounting and financial management; procurement; disbursement; review and expansion of existing strategies; and skills enhancement and on-the-job training in urban planning and development, SWM and O&M. Specifically, it will include skills enhancement and on-the-job training for project staff in urban planning and development, solid waste collection and landfill management, and operation and maintenance. Project implementation support

services will review and expand existing flood mitigation strategy, storm water drainage and flood mitigation strategy, SWM strategies, and disaster risk management strategies. The project implementation support services will also include assistance in preparing project progress reports, quarterly safeguards monitoring reports, and monitoring reports in accordance with pilot program on climate resilience (PPCR) results framework and PPCR monitoring and reporting toolkit.

2. Project Progress

- Project implementation -

Safeguards Policy Progress this period: is limited to project start-up confined to informing requirements in actions in procurement plan implementation

Relevant Safeguards Documents approved and confirmed include (i) Environment (Category B) - the initial Environmental examinations (IEE) for Kampong Chhnang and Pursat, environmental management plans (EMPs) for flood embankment and solid waste management in Kampong Chhnang, and drainage, riverbank erosion protection, and solid waste management in Pursat, an environment assessment and review framework (EARF) (ii) Resettlement (Category B) – Resettlement Plans (RP) for Kampong Chhnang and Pursat subprojects; (iii) Indigenous Peoples (Category B) –Indigenous Peoples Plan elements integrated into the project design, Participation Plan and Resettlement Documents to ensure social inclusiveness and meaningful participation of all ethnic groups, including the ethnic Cham and Vietnamese. Refer to the respective safeguard action plans for detailed implementation guidance.² The provincial government of Kampong Chhnang and Pursat provided their commitment to adhering to ADB and the government's safeguard policies on environment, involuntary resettlement and indigenous peoples (ethnic minorities) on 31 July 2014. The resettlement documents were approved by the Inter-ministerial Resettlement Committee on behalf of MPWT on 21 August 2014; and the revised resettlement documents were approved for disclosure on 3 September 2015 (RP versions dated April 2015; email of 27 August 2015). The environmental documents were principally approved on 15 August 2014 and endorsed by the MPWT on 25 September 2014. (See PAM-Section VIII.B for safeguard monitoring)

Procurement Implementation Progress includes the recruitment of one of four consultancies and planning remaining consultancy contract awards and disbursement for 2017. Under the current schedule, it is expected that all civil works contracts would be awarded by the end of Q2 2018, following the completion of detailed engineering design, advertisement and bidding in 2017.

The Project Management and Implementation Support (PMIS) Consultants (Package I) have been recruited, while the recruitment of Package II (Climate Change Adaptation in Urban Development) is ongoing, with ADB about to issue the No Objection for Submission 1. Package III (Strengthening Sector Development) will be re-advertised per the ADB's guidance to the PMU on 21 October 2016, as the original advertisement resulted in very few expressions of interest whose format and content met the requirements for a CQS (Consultants' Qualifications Selection) submission. It was agreed that Package III would be re-advertised immediately

² Under the streamlined business processes these are linked documents 13–17.

following the holiday period, by January 30, 2017. Package IV (NGO Support for Output 3) is yet to be advertised, and it was agreed that this package will be advertised in Q1 2017.

Table 1: Project Overview, Snapshot of Project Progress

Project Number and Title:		
Safeguards Category	Environment	IEE documents prepared and confirmed
	Indigenous Peoples	IPAC-integrated into the RP/LAR
	Involuntary Resettlement	RP- and LAR approved and confirmed and to be reviewed upon completion of detailed design
Reporting period:	April- December 2016	
Last report date:	Initial / Baseline Report	
Key sub-project activities since project effectiveness 02 Apr 2016:	<i>Applicable to Pursat and Kampong Chhnang Subprojects</i> <ul style="list-style-type: none"> Contract awarding <ul style="list-style-type: none"> ✓ PMIS Consultants (see above Sec 2). Progress of Work (% physical completion) <ul style="list-style-type: none"> ✓ N/A (Not Applicable) -Works to commence in 2018 Status of Safeguard Approvals / Permits / Consents <ul style="list-style-type: none"> ✓ All Approvals and Consents in place (reviews pending DD) 	
Report prepared by:	PMU General Directorate of Public Works, MPWT	

3. Safeguard Plans Implementation Arrangements

According to the PAM³, A resettlement officer will be assigned to the PMU and one in each PIU in order to coordinate implementation of the RP. Its resettlement-related tasks will include the following:

- (i) Secure the approval of the RP from the Inter-ministerial Resettlement Committee (IRC) in the Ministry of Economy and Finance;
- (ii) Secure prior approval by IRC and the ADB for any variations in the approved RP;
- (iii) Update the RP after the detailed measurement survey (DMS)/consultation with AHs during actual implementation.
- (iv) Secure the data base of affected households and assets that will be gathered during the preparation and updating of the RP.
- (v) Prepare progress reports/internal monitoring on overall project implementation including the RP implementation and submit to the IRC and ADB

Inter-ministerial Resettlement Committee (IRC). The IRC is a collective entity composed of representatives from relevant line ministries, such as the MPWT (Project Executing Agency), the Ministry of Land Management, Urban Planning and Construction (MLUPC), and Ministry of Water Resources and Meteorology (MOWRAM). The IRC has emerged as the decision making body on resettlement issues and has since been involved in other foreign-assisted government infrastructure projects with involuntary resettlement. The MEF is the permanent Chair of the IRC and represents it for all development projects. The IRC will assume the function of a quasi-regulatory body, ensuring that funds for resettlement are spent properly and that the RP is carried out as intended. The technical arm of the IRC is its working group. The Resettlement

³ Paragraph 79, page 68,

Department of MEF is acting as the secretariat of IRC and is tasked to assist the IRC in carrying out the following:

- (i) Reviewing and approving the RP, ensuring that the RP is consistent with the law and regulations of Cambodia and ADB's 2009 Safeguard Policy Statement (SPS) and the loan agreement;
- (ii) Endorsing the approved RP to ADB;
- (iii) Manage and supervise the RP implementation at the Project areas, such as DMS, negotiation and contracting making with AHs, public consultation with AHs, information disclosure, etc; based on the agreed policy and principles of the RPs;
- (iv) Convening the establishment of the Provincial Resettlement Committee (PRSC) and its Working Group (WG);
- (v) Orienting, as needed, the PRSC and its working group (PRSC-WG) on their tasks relative to RP preparation and implementation;
- (vi) Securing from the national treasury the budget for carrying out the RP, ensuring that funds are available in a timely manner and in sufficient amounts;
- (vii) Approving all disbursements connected with the implementation of the RP, such as payment of compensation and other entitlements, acquisition and preparation of replacement plots, operational expenses of personnel, etc.;
- (viii) Ensuring that funds for resettlement are spent judiciously; and
- (ix) Monitoring the implementation of the RP, ensuring that this is carried out in compliance with the Project resettlement policy and with the loan agreement

Provincial Resettlement Sub-committee (PRSC). The PRSC is a collegial body at the provincial level headed by the Provincial Governor or Deputy Governor of the Provinces where the Project located. The members of the PRSC are provincial department directors of line ministries represented in the IRC, and also the chiefs of the districts and communes where the Project located.

The technical arm of the PRSC is the Working Group (PRSC-WG). The PRSC-WG is headed by the Chief or Deputy Chief of the Provincial Cabinet, with a Director (or a representative) of the Provincial Department of Public Works and Transport (PDPWT) as members. The PRSC-WG has a counterpart at the district level and commune level composed of personnel from various line agencies.

The PRSC, through the provincial, municipal and sangkat working groups, will have the following functions:

- (i) Facilitate a sustained public information campaign, ensuring that the public, especially the AHs, are updated on any developments regarding the Project and resettlement activities;
- (ii) Cooperate with IRC-WG in conducting the implementation of RPs and assist with public consultation and information disclosure meetings; Assist the IRC-WG in the selection. Acquisition and preparation of replacement plots, including preparation of a coordinated schedule of delivery of compensation and other entitlements, the relocation of people, harvesting of standing crops, and the start of civil works in a particular section of the Project; and
- (iii) Manage the delivery of compensation and other entitlements to the AHs.

Project Management and Implementation Support Consultants (PMIS). The Project Management and Implementation Support Consultants (PMIS) will be recruited by MPWT in accordance with ADB's Guidelines on the Use of Consultants (2013, or as amended time from time). The PMIS consultants will assist PMU in updating the RPs based on the results of the

DMS and the RCS and in implementation of the Project. The PMIS will likewise provide capacity-building orientation and skills training, as needed, to concerned personnel of the PMU. The PMIS will include one international social development/resettlement specialist (6 person-months, intermittent), two local resettlement specialists (one per project town, for a total of 24 person-months, intermittent).

Together with the PMU, the PMIS will supervise civil works activities to ensure that the contractors adhere with the terms of their contract relative to avoiding and/or minimizing resettlement impacts, in addition to ensuring that contractors provide the necessary compensation and/or assistance to the AHs during construction as described in the entitlement matrix. Compensation and assistance will be provided by civil work contractor prior to and/or during construction activities, depending on when the temporary impacts are identified.

Ethnic Cham and Vietnamese were identified and meaningfully consulted in some Kampong Chhnang villages. They live alongside the Khmer majority and are well integrated within the larger community. The project includes specific design features to ensure that the ethnic Cham and Vietnamese are project beneficiaries and are meaningfully consulted during project implementation, such as: the Kampong Chhnang river embankment in some parts will be constructed parallel to the existing alignment to avoid significant resettlement impacts; and Output 3 (Community Mobilization and Environmental Improvements) targets poor and vulnerable households, including ethnic Cham and Vietnamese. The NGO recruited also will be required to demonstrate in its proposal its experience in working with the ethnic Cham and Vietnamese.

The project design will benefit all residents in the project area in Kampong Chhnang and Pursat, including ethnic Cham and Vietnamese groups. Output 3 pre-identifies villages where ethnic Cham and Vietnamese are an overwhelming majority of project beneficiaries. As such, the elements of an indigenous peoples plan are integrated in project design in lieu of a standalone indigenous peoples plan.

Meaningful and culturally appropriate participation and consultation with ethnic Cham and Vietnamese will be ensured and fully documented by the PMU, with support from the Project Management and Implementation Support Consultants (e.g., the international resettlement and social development specialist). It will also be closely monitored for compliance by the EA and ADB during project implementation.

4. Updated EMPs and RPs, Incorporation of Safeguards Requirements into Project Contractual Arrangements

The project is classified as **Category B** for environment in accordance with the ADB's SPS 2009. Environmental impacts are related to siting, design, construction, and operation, and mitigation measures are incorporated in the environment management plans (EMPs). EMPs have been prepared for SWM, embankment protection, drainage, and riverbank erosion protection. The EMPs will form part of the bidding and contract documents. The potential adverse impacts during construction are expected to be temporary and will be mitigated through implementation of and compliance with the EMP. The project includes budget and institutional arrangements for EMP implementation and monitoring. Initial environmental examinations (IEEs) for two (2) subprojects (Kampong Chhnang and Pursat) will be revised to reflect design changes. Likewise, the Environmental Assessment and Review Framework (EARF) for the Community Mobilization and Environmental Improvements (Output 3) will also be updated. Potential impacts of climate change and/or natural hazards on the project were integrated as

part of project design (e.g., flood risk management), and in the IEEs with recommendations for consideration during the design stage.

Indicate when updated EMPs and RPs were submitted for approval to ADB (Table format appropriate)

The provincial government of Kampong Chhnang and Pursat provided their commitment to adhering to ADB and the government's safeguard policies on environment, involuntary resettlement and indigenous peoples (ethnic minorities) on 31 July 2014. The resettlement documents were approved by the Inter-ministerial Resettlement Committee on behalf of MPWT on 21 August 2014; and the revised resettlement documents were approved for disclosure on 3 September 2015 (RP versions dated April 2015; email of 27 August 2015). The environmental documents were principally approved on 15 August 2014 and endorsed by the MPWT on 25 September 2014. See Section VIII.B for safeguard monitoring.

III. ENVIRONMENTAL PERFORMANCE MONITORING

1. Status of EMP implementation (Mitigation Measures)

No activity to report this period-- since the project loan date of effectiveness date (02 March 2016) with more to report expected in 2017.

At the detailed design stage, as IEEs/EMPs will be updated and finalized, Mitigation measures (including any additional requirements) for identified impacts will be incorporated into the Environmental Management Plans (EMPs) – which were prepared individually for each of the components. Costing for developing and implementing the EMPs will be refined for inputs to project costing. The proposed mitigating measures will be reviewed to ensure that environmental receptors are not adversely affected.

Stakeholders Participation. A Project Participation Plan has been prepared and describes measures to share information and strengthen participation of stakeholders in project components and activities with beneficiaries as per ADB's Guide to Participation. Strategies to ensure participation of the poor and vulnerable have been incorporated in resettlement documents to ensure their effective participation throughout the project cycle. Screening for community-driven infrastructure will ensure these were selected with full participation of marginalized groups that may experience negative impacts. Additional mitigation measures that may be identified during implementation will be decided via meaningful consultation with affected persons (APs). Preferential hiring for poor and other vulnerable affected households during project construction activities will be required from contractors. Contractor compliance will be monitored by MPWT and ADB during implementation.

External Monitoring. The External Monitoring Organization (EMO) will be recruited by the IRC and will commence its work prior to or during the DMS, and will carry out independent quarterly reviews of RP to determine whether intended goals are being achieved, and if not, what corrective actions are needed and will likewise conduct a post-resettlement evaluation study 6 - 12 months after the completion of RP implementation. A part from reviewing and assessing the activities during RP updating, the general objective for external monitoring is to verify results and findings of the internal monitoring. Essentially the verification includes an assessment of: (i) the achievement of resettlement objectives, (ii) changes in living standards and livelihoods, (iii) the restoration of the economic and social conditions of the AHs, (iv) the effectiveness, impact

and sustainability of assistance measures, (v) the need for further mitigation measures, if any; and, (vi) to identify strategic lessons for future policy formulation and planning.

The PMU will work closely with Ministry of Environment on the training programs involving the updating of the EMPs and mitigation measures on environment safeguards.

Table 2: Compliance with EMP Requirements (Environmental Performance)

No 'compliance' status can be presented at this time. A typical EMP compliance monitoring tables are presented below for future reference.

EMP Requirements	Compliance Status (Yes, No, Partial)	Comment or Reasons for Non-Compliance	Issues for Further Action
Use environmental impact as main heading and EMP as listing (see example below)	Use EMP list as basis for rating/evaluating compliance (see example below)		
Rise of employment opportunities: <ul style="list-style-type: none"> • Job openings of the project should give priority to local communities. • Recruitment of local laborers should be stipulated in the contract for construction 	<ul style="list-style-type: none"> • Field inspections and interviews with communities - DONE • Note each complaint case in the field – 3 COMPLAINTS RECEIVED • Set up grievance centre and report as part of monitoring action plan – NOT DONE 		

Table 3: Issues for Further Action

Issue	Required Action	Responsibility and Timing	Resolution
Old Issues from Previous Reports			
List of EMP measures or activities not completed (last column of previous table)			
New Issues from This Report			

2. Health and Safety

There is no activity yet to report. The monitoring tables are presented below for future reference. Employment opportunities will be created for flood protection, landfill and community-led infrastructure civil works. All contracts will forbid hiring of minors. Health and safety standards will be adopted in all construction sites. HIV-awareness and anti-human trafficking training will be conducted for workers and local communities prior to construction activities. Other labor laws and regulations will be followed that are in the general conditions of contract of bid documents for ICB. Special conditions may be added, as required, to the NCB bid documents based on clear risk identification and assessments.

Limited solid waste collection and poor management is a major environmental issue in flood-prone areas of the Tonle Sap and a major health concern for communities, especially women. The municipality is responsible for solid waste management. The Ministry of Environment has issued general guidelines on disposal, collection, transport, storage, recycling, minimization and dumping of household waste. Reduce, reuse, recycle for waste management is active in Kampong Chhnang and Pursat municipalities through junk shops and wastepickers, but only about 20% of the waste stream in Kampong Chhnang and 30% in Pursat is recycled. The responsibility for solid waste management falls with municipality. The situation is further exacerbated, as aspects of SWM are contracted out to the private sector without proper contract monitoring and supervision. The project will improve SWM in Kampong Chhnang and Pursat through institutional strengthening of urban service units, private sector contract management, closure of non-functioning open dumpsites, construction of new controlled landfills, and awareness on menstrual hygiene management.

It is also recommended that PDOWA representatives from provincial to village levels be involved in all future activities including training and capacity development activities. It is important to secure their support and assistance in ensuring the participation of female community members, as well as that of their partners such as the village health support group, which has been identified as PDOWA's partner in conducting trainings at the village level on waste, sanitation and HIV. Key informant interviews underscored the importance of putting in place protective measures during construction activities, including separate latrine facilities for women and men and equal pay for equal work regardless of the laborer's sex. It is also important to encourage contractors to properly integrate information about HIV-awareness among their workers and in the local communities.

Table 4: Health and Safety Issues

Issue	Required Action	Responsibility and Timing	Resolution
Old Issues from Previous Reports			
New Issues from This Report			

3. Environment Effect Monitoring

a. Monitoring plan.

The EMP aims to ensure environmental protection prior to construction and during construction and operation. It identifies all potential environmental impacts of the Subproject and recommends the mitigation and protection measures and monitoring requirements to avoid or minimize these impacts to acceptable levels, meeting international and national standards. It defines the institutional arrangements, roles and responsibilities of relevant institutions, mechanisms and procedures and budgets for its implementation. The EMP draws on the findings of the IEE and project preparatory technical assistance (PPTA), comments of review missions of the Asian Development Bank (ADB), and feedback from discussions with relevant government institutions.

The recommended mitigation measures consist of actions, activities, plans and documents (including resettlement/compensation plan, environmental approval documents, Contractor's EMP) that need to be undertaken, observed, obtained, prepared to prevent, mitigate, or compensate for, the salient adverse impacts enumerated in Table A. The broad measures are outlined below; while the specific measures are presented in the Environmental Mitigation Plan (Table B):

- ✓ **Ensuring incorporation in detailed design of adequate considerations and conditions relative climate change to sustain the structural integrity and effective operations of completed works.**
- ✓ **Prompt compensation for losses associated with ROW acquisition according to the approved Resettlement/Compensation Plan.**
- ✓ **Ensuring the engagement of an environment-responsible Contractor by incorporating the SPS-compliant EMP for this subproject (hereinafter referred to as the EMP) into the bidding documents, for use as basis in the preparation of the Contractor's EMP (C-EMP) by the selected Contractor, addressing as minimum the requirements of the EMP. C-EMP to be quantitatively and qualitatively evaluated against the EMP by the PMU and cleared by the ADB prior to the commencement of any work on site. The contract for civil works to explicitly stipulate the obligation to institute the mitigation measures properly and carry out environmental monitoring according to the C-EMP. The Contract to stipulate some tie-up of progress payment and collection of performance bond with the performance in C-EMP implementation.**
- ✓ **A C-EMP that ensures good and environment-friendly engineering practices that avoid first, and (if unavoidable) mitigate, adverse impacts; and commitment from Contractor to fully implement the C-EMP.**
- ✓ **Quality construction supervision and environmental monitoring by the PMU.**
- ✓ **Conduct of engineering investigations of built structures after every seismic and extreme weather events during construction and operation and full disclosure of investigation reports.**
- ✓ **Sufficient funds for sustained quality of operation and maintenance.**
- ✓ **Observance of the grievance redress mechanism and prompt action/resolution of lodged grievances.**

Table A: Summary of Potential impacts/Issues/Concerns

Issues/Concerns/Impacts	Impact Magnitude*	Impact Significance*	Remark ^
Pre-Construction Phase			
Inadequate consideration/incorporation of the following in detailed design: Significance of the Tonle Sap River and crossing streams	H	H	√
Climate change & hydrology of Tonle Sap system & crossing streams	H	H	√
Significance of keeping the floodplain between the existing embankment & Tonle Sap River	M	H	√
Scale of settlement and urban development along some existing sections of the embankment	H	H	√
Demand for, & availability of supply of and sources for, fine and coarse aggregates **	H	M	√
Town's vulnerability to damages from other natural hazards, existing utility infrastructures, relevant feedback/suggestions during stakeholder consultations, adaptation measures for other integral components of the embankment, such as road and sluice gates. ^^	M	M	√
Construction Phase			
Dust/suspended particles	H	H	
Noise	H	H	
Surface water contamination	M	H	
Groundwater contamination	M	M	
Soil erosion	M	M	
Impact on the landscape	M	M	
Impact on flora	M	M	
Impact on fauna	L	M	
Traffic (& road/lane blocking)	H	H	
Blocked accesses to homes, social services, economic establishments, work and construction sites	H	H	
Accidental damage to utilities, damage to access roads	H	H	
Community health and safety hazard	H	H	
Workers' health & safety hazard	H	H	
Indirect & induced impacts --- Traffic, safety hazards, disruptions	M	M	
Cumulative impacts – dust, noise, water resources contamination, soil contamination, impact of aquatic habitats in the Tonle Sap River, traffic, blocked accesses, health and safety hazards (public and workers), disruption to social services and economic activities	H	H	
Operation Phase			
Dust and noise from use of road	M	M	√
Public safety hazard from unauthorized use of road prior to full stabilization & potential overtopping & structural failure, and from vehicular accidents associated with the use of road when stabilized	M	M	√
Indirect, induced and cumulative impacts – growth in the newly created flood-free lands reducing the retention areas	H	H	√

* Results of screening process.

** Outside main area of influence; hence, not included in the screening process, but considered in the impact assessment.

^ Considered in the preliminary design/feasibility study

^^ Partially included in the screening process. Partially considered in the preliminary engineering/feasibility study, e.g., road, sluice gates, feedback from the SES.

Table B: Environmental Mitigation Plan

A. Prior to Construction Phase

A.1 Detailed Engineering Design

Potential Environmental Impacts/Concerns	Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Institutional Responsibilities	
				Implement	Supervise & monitor
1 Unsustained effectiveness of service of completed works due to inadequate consideration during design of (any one or combination of) the following: - climate change & the hydrology of the Tonle Sap River/Lake system - stormwater runoff from Town to the Tonle Sap River through the crossing drainage channels - significance of keeping the floodplain - scale of settlement and urban development along the section near the town proper - vulnerability to other natural hazards - relevant feedback from stakeholders - design adaptation options for integral components, such as slopes, road & crossing drainage channels	1.1 Few design adaptation options for flood and drought. - For slopes: appropriate gradient, landscape with plant species that are both flood- and drought-tolerant, e.g., growing vetiver plant, optimum degree of compaction. - For road: optimum degree of compaction, use flexible pavement - For crossing streams: increasing size of outlets (with gates and pumps, as necessary) 1.2 Incorporate in design climate change impacts to the hydrology of Tonle Sap system and crossing streams. 1.3 While intending to protect existing settlements before the existing embankment, re-aligning the embankment to the east must be kept at the minimum technically feasible distance. 1.4 Design to seismic design criteria as regulated in Cambodia or 1.5 Design to incorporate relevant issues, concerns & experience of local residents pertaining to existing embankment's coping with climate change events as raised during consultations.	Not applicable	-	Design Consultant	PMU/PIU & PIC Envi Sp/
2 Unsustainable supply of gravel, stone, rock, sand, soil, or unsustainable extraction of these materials to meet construction demand	2.1 Prepare an Aggregates Mgmt Plan (AMP): • confirming location of legal sources for required aggregates • estimating the demand for, & supply from confirmed sources of, aggregates • specifying measures to effectively minimize potential risks of aggregates extraction, transport, loading & unloading • specifying environmental requirements should Contractor opt to operate its own borrow area to serve as basis for Contractor's AMP. 2.2 Specify in bidding documents & contract Contractor's obligation to obtain aggregates only from quarries still operating within allowed extraction threshold according to their environmental clearances & permits to operate.	Not applicable	-	Design Consultant	PMU & PIC Envi Sp

A.2 Obtaining Approvals, and Community Preparation

Potential Environmental Impacts/Concerns	Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Institutional Responsibilities	
				Implement	Monitor
3 Displacement of HHs & losses	3.1 Finalize Resettlement/Compensation Plan, after Det. Measurement Surveys, through highly consultative & participatory process. 3.2 At least 30 days before awarding of contract for civil works, losses shall have been fully compensated for, & the required relocation of affected HHs & services, accomplished, according to the approved resettlement & compensation plan.	All affected villages All affected villages	c/o detailed design cost c/o resettlement cost	Det. Design Resettlement Sp PMU/PIU	PMU/PIU & PIC Resettlement Sp
4 Overall environmental concerns/impacts of the Subproject	4.1 Obtain IEIA/EIA approval for the Subproject.	Not applicable	c/o PMU's counterpart budget	PMU/PIU	PIC Envi Sp/
5 Potential communicable/transmittable diseases brought with entry of workers & overall health & safety hazards during construction.	5.1 Intensive awareness program on communicable/transmittable diseases, e.g., SARS, H1N1, STD, HIV/AIDS, tuberculosis, and diseases that may be brought with entry of workers & on the health and safety hazards during construction.	All affected villages	c/o PMU's counterpart budget	PMU/PIU with health & village officials	

A.3 Procurement & Prior to Mobilization

Potential Environmental Impacts/Concerns	Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Institutional Responsibilities	
				Implement	Review & Evaluate
6 Engagement of environmentally irresponsible contractor for civil works	6.1 A SPS-compliant EMP, as part of bidding documents. 6.2 EMP to be appended to the Contract for basis of preparation of Contractor's EMP (C-EMP) & for compliance. 6.3 Contract to require Contractor's submission of monthly environmental monitoring report, outline appended in Contract. 6.4 Contract to also stipulate some tie up of progress payment & collection of performance bond with the performance in C-EMP/EMP implementation. 6.5 Selected Contractor to prepare detailed C-EMP that addresses as minimum the requirements of the SPS-compliant EMP. 6.6 C-EMP to be quantitatively & qualitatively evaluated against the EMP. 6.7 ADB to clear C-EMP before start of any work on site or establishment of construction-related facilities.	Not applicable	-	PMU/PIU	PIC Envi Sp/

B. Construction Phase

Potential Environmental Impacts/Concerns	Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Institutional Responsibilities	
				Implement	Monitor
PHYSICAL / CHEMICAL ENVIRONMENT 7 <u>Dust/suspended particles</u> from: <ul style="list-style-type: none"> - earthworks - dry exposed surfaces - stockpile of dry soils, sand, cement - transport of aggregates, cement, residual soil for disposal & wastes - loading/unloading of fine aggregates, cement and other materials - movements of construction vehicles/ equipment 	7.1 <u>Implement segmentation/sectioning of works, as appropriate.</u> 7.2 <u>Water dry unpaved/exposed surfaces, stockpiles of sand & excavated materials, at least twice daily, or as necessary.</u> 7.3 <u>Protect stockpiles of soil/sand with a wind barrier/screen. Or, confine stockpiles well within the sites with hoarding.</u> 7.4 <u>Wash/wet tires prior to exiting construction sites to remove mud/ dirt. Provide wetting facilities at exit.</u> 7.5 <u>Provide hoarding around active sites, where applicable, of not less than 2 m high from ground level, & to extend at least 10 m from edges of segment.</u> 7.6 <u>Cover trucks securely, especially those carrying aggregates & cement, with tarpaulin. Trucks to maintain min. 2 feet freeboard.</u> 7.7 <u>Limit speed of all construction-related vehicles in access road to, and in, site to maximum of 30 kph.</u> 7.8 <u>Minimize drop heights when loading/unloading soil onto trucks/ ground. Spray water on soil being loaded/unloaded.</u>	Entire alignment Active work segment Active work segment, close to settlements At entire hauling route Access road to, and in, construction site At the site	- c/o Construction running, set up costs (preliminaries) c/o Supplier's cost 	Contractor	PMU/PIU & PIC Envi Sp/ ADB*
	8.1 <u>Use only equipment that emit least noise, e.g. electrically powered equipment, hydraulic tools, those with efficient mufflers. Allow only well-maintained equipment/vehicles</u> 8.2 <u>Set up noise barriers, e.g.:</u> <ul style="list-style-type: none"> - hoarding around active site, min. 2 m high from ground level; - sound-absorbing enclosure around generator sets; - consider locating site office &/or storage structures such that these can act as noise barriers. 8.3 <u>Restrict use of noisy equipment from 8AM-5PM. Overtime work should: not go beyond 9PM, observe regulated noise level, not use noisy equipment, be coordinated with village/commune, & be announced to affected communities at least 5 days in advance.</u> 8.4 <u>Strictly enforce upon workers compliance with wearing of ear mufflers, especially those operating the equipment.</u> 8.5 <u>Locate noisy generators at max. distance from nearest receptors.</u> 8.6 <u>Limit engine idling to a max. of 5 minutes.</u> 8.7 <u>Minimize drop heights when loading/unloading coarse aggregates.</u> 8.8 <u>Spread out schedule of material, spoil & waste transport, in the day (off-peak traffic hours), or early evening.</u>	At the site At the site	c/o Construction mobiliz'n cost (preliminaries) -		
Potential Environmental Impacts/Concerns	Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Implement	Review & Evaluate
9 <u>Deterioration of surface & ground water resources</u> from improper/inadequate management of the following in workers: camp & subproject sites: <ul style="list-style-type: none"> - sewage/wastewater - solid & hazardous wastes - sediments, silts - hazardous construction materials 	9.1 <u>Provide adequate sanitation facilities, adequate water supply. Strictly enforce observance of sanitation practices.</u> 9.2 <u>Implement an eco-friendly solid/hazardous waste management:</u> <ul style="list-style-type: none"> - practices waste minimization, reuse and segregation - has adequate covered storage bins/containers, color-coded clearly marked to avoid mixing, especially hazardous wastes - has separate enclosed storage areas for solid & hazardous wastes, that can contain spills, clearly marked/labelled - networks with private individuals/entities that are into waste recovery & recycling to reduce wastes brought to landfills - implements prompt disposal at the City landfill - coordinates with PDaE the disposal of hazardous waste - workers & hazardous waste contractors to observe safety measures/system when handling hazardous wastes 	Active work segment, field offices &, if applicable, workers camp	c/o Construction mobiliz'n & running costs (preliminaries)	Contractor	PMU/PIU & PIC Envi Sp/ ADB*
	9.3 <u>Implement measures to mitigate sedimentation/siltation.</u> <ul style="list-style-type: none"> - stockpile on flat grounds & away from, not obstructing, main surface drainage routes, limit to max height of 2 m - dispose of unsuitable & excess soils as soon as possible - avoid stockpiling more aggregates than needed - use any combination of silt fences, sediment basins/traps, sandbags, barrier nets, earth berm/bund, perimeter dike, speed stilling humps, seeding, mulching, establishing general vegetation, whichever would be appropriate. 	At all sites, most especially at Section C-D & near to crossing with drainage channels			
	9.4 <u>Manage the use and storage of hazardous substances:</u> <ul style="list-style-type: none"> - install visible caution signage at storage areas, secure them from unauthorized entry or use. Must be able to contain spillage. - locate stationary ground storage at least 30 m away from water bodies or groundwater well. Raise to min 1 foot above highest flood level. Or, use mobile storage. - have equipment clearly leaking oil repaired off-site at once. - no vehicle maintenance & refuelling to be allowed at the site. - use less hazardous substances. - store no more hazardous substances on site than needed. - have spill clean up materials for all types of hazardous substances readily available on site. 	At the site			

Potential Environmental Impacts/Concerns	Recommended Mitigation Measures		Location	Estimated Cost * (USD)	Institutional Responsibilities	
					Implement	Review & Evaluate
10 <u>Soil erosion</u> due to: - movement & vibration from works & vehicles	10.1 Coordinate work program & ins and outs of vehicles.	Active work segment	-	Contractor	PMU/PIU & PIC Envi Sp/ ADB*	
	10.2 Implement measures to mitigate vibration: - During mobilization, identify vibration-sensitive areas &/or structures in the main influence area to plan for the appropriate technology, equipment/ tools & procedure level to apply or use. - Schedule separately ground-impacting activities in a site as much as possible to reduce the intensity of impact. - Limit engine idling to a max. of 5 minutes. - Limit speed to max. 40 kph en route to sites, 30 kph in access road to, & in, site. - Use available equipment & tools that emit least vibrations (as per manufacturer's specifications), or equipped with shock absorber. - Maintain equipment/tools according to specifications.					Active work segment
11 <u>Impact on the landscape</u> from disorderly parking of vehicles/equipment, stockpiling, siting of storage structures & sanitation facilities, borrowing; from litters & poor solid waste management; from removal of trees and shrubs, etc.	11.1 Stockpile materials and spoils and park construction vehicles/ equipment only in designated areas (with least or no vegetation as much as possible).	Active work segment	-	Contractor	PMU/PIU & PIC Envi Sp/ ADB*	
	11.2 Organize placement of field structures. Implement proper solid waste management and keeping of premises.		c/o Construction mobiliz'n & running costs (preliminaries)			
	11.3 Plant trees to replace removed trees as coordinated with concerned commune.					
BIOLOGICAL ENVIRONMENT						
12 <u>Impairment of aquatic life</u> in Tonle Sap River (along Section C-D)	12.1 Implement the appropriate recommended measures to mitigate the deterioration of surface & groundwater resources. (No. XX above)	Section C-D.	c/o Construction (preliminaries)	Contractor	PMU/PIU & PIC Envi Sp/ ADB*	
	12.2 Install clear signage at strategic location along the Tonle Sap River to remind workers of the significance of the River.					
13 <u>Loss of vegetation</u> within & beyond Subproject footprints, from: - un-guided works - un-directed movement of equipment - haphazard stockpiling of materials - haphazard parking of equipment	13.1 During detailed design, determine the required temporary access roads and work easements for temporary disturbance. Include, as appropriate, in the resettlement plan for the rightful compensation.	Not applicable	-			
	13.2 Prior to clearing & grubbing, physically mark limits for construction footprints, including work easements & if applicable, the required temporary access roads	At active work segment & the required temporary access roads	c/o Construction mobiliz'n cost (preliminaries)			
	13.3 Install reflectorized guides, signage &/or markers to direct vehicular/ equipment traffic, storage, stockpiles, parking and works.					
	13.4 Stockpile materials/spoils & park construction vehicles/equipment only in designated areas (with least or no vegetation, as possible)	At active work segment	-			
Potential Environmental Impacts/Concerns	Recommended Mitigation Measures		Location	Estimated Cost * (USD)	Institutional Responsibilities	
					Implement	Review & Evaluate
SOCIO-ECONOMIC ENVIRONMENT						
14 Traffic & road lane blocking, due to: - movements of construction vehicles/ equipment in & out of the main area of influence - roadside parking of construction vehicles & equipment - stockpiling of aggregates, excavated soils, spoils within access road ROW	14.1 Coordinate with village/commune/municipal traffic authorities for: - a scheme to jointly manage the junctions & mitigate impact on main roads; - parking of construction trucks & equipment - stockpiling of aggregates and construction spoils - safe access of private vehicles and pedestrians.	Main influence area	-	Contractor	PMU/PIU & PIC Envi Sp/ ADB*	
	14.2 Spread out schedule for materials delivery in non-peak hours.	Active work segment				
	14.3 Park construction vehicles & equipment & stockpile construction aggregates & spoils according to approved/coordinated scheme.					
	14.4 Stockpile no more aggregates than needed in the short term.					
	14.5 Dispose of spoils away from active work face at end of day's work.					
	14.6 Post traffic (flag) persons at effective junctions during entire working hours.	Effective junctions	c/o Construction running & mobiliz'n costs (preliminaries)			
	14.7 Post billboards on road/lane closure, traffic rerouting plan at strategic places, min. 1 week prior to effectivity.	Strategically in main influence area				
15 Blocked accesses to properties, social services, economic activities & sources of livelihood, by: - active work segment - parked construction vehicles/equipment - stockpile of aggregates & spoils	15.1 In coordination with village/commune authorities, conduct information campaign during mobilization -- on work phasing & schedules, anticipated access blocking, & provisions for safe access & temporary car parking for blocked garages/driveways.	Affected communities	-	Contractor & PMU/PIU	PIC Envi Sp/ ADB*	
	15.2 At least one week prior to actual access blocking, notify the affected properties. Work together/agree with property owners & concerned villages for the alternative accesses and parking areas.					
	15.3 Park construction vehicles & equipment & stockpile construction aggregates & spoils according to approved/coordinated scheme.	Active work segment		Contractor	PMU/PIU & PIC Envi Sp/ ADB*	
	15.4 Stockpile no more aggregates than needed in the short term.					
	15.5 Store spoils away from accesses. Dispose of them away from active work face at the end of each day's work.					
	15.6 Provide safe access to blocked properties/assets, e.g., steel planks of adequate grade, width and length, & if needed, with guide rail & adequate signage and lighting.	Affected properties	c/o Construction running cost (preliminaries)			

Potential Environmental Impacts/Concerns	Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Institutional Responsibilities			
				Implement	Review & Evaluate		
16 Accidental damage to power supply poles, damages to access roads, causing disruptions in socio-economic services & activities.	16.1 During mobilization: - coordinate work activities & schedule with power supply company, set contact arrangements in case of damage & unavoidable relocation; - coordinate & agree with the Municipality/Province regarding road ruts caused by construction vehicle movements; and - post work activities & schedules at strategic places in the main influence area.	Main influence area	-	Contractor	PMU/PIU & PIC Envi Sp/ ADB*		
	16.2 In case of accidental damage, advise concerned utility company at once. Facilitate quick restoration by clearing obstructions & lending assistance (workers, equipment, tools) in the repair.						
	16.3 Give at least 1 week prior notice on planned service interruption due to relocation of existing utilities. power supply poles,						
	17 Community health & safety hazards from, among others: - dust, noise, gas emissions, odor, vibration - affected water resources - inadequate waste/wastewater mgmt - spillage of hazardous substances - fire, explosions, collapse of work structures - blocked accesses to properties, social services, economic activities & sources of livelihoods - open excavations/disturbed areas - movement of construction-associated vehicles/equipment - rise of communicable/transmittable diseases with entry of workers	17.1 Implement recommended measures to mitigate: - dust, gas emission, odor, noise, vibration - deterioration of surface & groundwater resources & adverse impacts of wastes & hazardous substances - traffic, road blocking	Active work segment	c/o Construction mobiliz'n & running costs (preliminaries)	Contractor	PMU/PIU & PIC Envi Sp/ ADB*	
17.2 Emergency response preparedness (procedures, trained staff, equipment, tools & supplies, good link to ultimate responders).							
17.3 Provide safe accesses to blocked properties, social services, economic activities & sources of livelihood.							
17.4 Install adequate/appropriate lighting & clear signage/warning at, & reflector barrier/hoarding around, active work face/disturbed areas.		Entire subproject footprint	-				
17.5 Implement work segmentation to minimize disturbing more areas than could be worked at & restored in a day or in short periods.							
17.6 Enforce upon drivers of construction-associated vehicles & equipment to implement safe/defensive driving & operation.							
17.7 In case of "chance find" UXO, immediately coordinate with village concerned & proper authorities for proper handling.							
17.8 Remind construction workers regarding responsible practices for health and safety of community.		Not applicable					
Potential Environmental Impacts/Concerns		Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Implement	Review & Evaluate	
18 Workers' health & safety hazards from: - dust, noise, gas emissions, vibration - inadequate waste/wastewater management - exposure to hazardous substances - exposure to the weather - poor sanitation practices - open pits, disturbed areas - operating equipment & handling of tools - movement of construction-associated vehicles/equipment - rise of communicable/transmittable diseases in subproject communities - fire, explosion, collapse of disturbed soils & worked-on structures		18.1 Conduct workers' orientation, prior construction, on occupational health & safety hazards, strict observance of safety measures, emergency response procedures, & use/handling of hazardous substances and noisy & vibrating equipment.	Not applicable	c/o Construction mobiliz'n & running costs (preliminaries)	Contractor	PMU/PIU & PIC Envi Sp/ ADB*	
	18.2 Implement recommended measures to mitigate dust, gas emission, noise, vibration; and to manage wastes & hazardous substances	Active work segment					
	18.3 Provide protective wears, e.g., eye & nose masks, ear muffers, helmets, gloves, appropriate footwear, etc. Enforce their use by workers while at work.						
	18.4 Install adequate lighting, safe accesses to & from active work areas.	Active work segment	-				
	18.5 Minimize impact from operating noisy/vibrating equipment/tools by ensuring workers' daily exposure value (ELV) is kept within the standard limit, as specified by manufacturer, through shifts to allow breaks from continuous use of equipment by individual worker.						
	18.6 Provide safe accommodations.	Workers camp	c/o Construction mobiliz'n & running costs (preliminaries)				
	18.7 Provide adequate water for washing & safe drinking, and adequate sanitation and waste management facilities. Enforce observance of good hygiene, sanitation & waste management practices.	Workers camp & active work segment					
	18.8 Set up emergency response team, equipped with adequate staff, equipment, tools & supplies, and with good link to ultimate responders.	Field office					
	18.9 Arrange with nearest primary & tertiary health institutions for health & emergency care of workers.	Not applicable	-				
	18.10 Enforce upon drivers/operators of construction-associated vehicles & equipment to implement safe/defensive driving & operation.	In & outside construction sites					
	18.11 In case of "chance find" of UXO, immediately stop work, implement evacuation procedures & coordinate with appropriate authorities.	Active work segment					
SUSTAINABILITY OF WORK							
19 Damage during seismic or extreme weather event	19.1 After every seismic or extreme weather event, conduct engineering investigation of built structures & implement corrective measures without delay.	Entire subproject footprint	c/o Construction contingency cost	Contractor	PMU/PIU & PIC Envi Sp/ ADB*		
Sub-Total (Prior to Construction and During Construction)			USD	-			

C. Operation Phase

Potential Environmental Impacts	Recommended Mitigation Measures	Location	Estimated Cost ^a (USD)	Institutional Responsibilities Per Phase				
				Pre-Operation Phases			Operation Phase	
				Det. Design Consultant	PMU	PIC Envi Sp / ADB*	Operator	PMU & ADB*
20 Dust & noise from use of road	20.1 Implement environmental effects monitoring as prescribed in the EMP. 20.2 When exceedance against pre-operation level merits an investigation of the road surface, this should be conducted immediately for corrective action.	As prescribed in EMP.	c/o Operations running cost	-	-	-	Implement	Monitor
21 Safety risks from overtopping & structural failure	21.1 Conduct regular inspection and prompt maintenance & repair. 21.2 Operator must have an Emergency Action Plan, which should be drafted together with village/commune/municipal officials for collaborative action in case of emergency. Participation of community volunteers must be encouraged. 21.3 Operator must set up its team for initial emergency response that is linked with an ultimate response team.	Entire embankment	c/o Operations running cost	-	-	-	Implement	Monitor
22 Unauthorized entry of vehicles/ use of road embankment by public prior to full stabilization.	22.1 Provide physical barriers with legible warning sign against entry until such time when dyke has fully stabilized (at all possible entry points). 22.2 Coordinate with village authorities, nearest residents &/or farmers regarding vigilance on unauthorized entry/use.	All possible entry points. Affected villages	c/o Operations running cost -	-	-	-	Implement	Monitor
23 Unsustained effectiveness of services due to inefficient operation, maintenance & repair	23.1 Sufficient budget and technical capacity for operation, maintenance and repair.	Not applicable	c/o Operations running cost	-	-	-	Implement	Monitor
24 Damages during seismic or extreme weather events	24.1 After every seismic or extreme weather event, conduct engineering investigation of built structures & implement corrective measures without delay.	All sites	c/o Operations emergency or contingency cost	-	-	-	Implement	Monitor
Sub-Total (During Operation)			USD -					
TOTAL			USD -					

I. ENVIRONMENTAL EFFECTS MONITORING

Aspects/Parameters to be Monitored	Location	Means of Monitoring	Frequency	Estimated Cost (USD)	Responsibility	
					Implement	Compliance Monitoring
A. Prior to Construction Phase						
During procurement prior to awarding of contract for civil works						
1 Ambient air quality PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ <i>Review against the more stringent values between Annex 1 of Sub-Decree No. 42/ANK/BK (2000) & WHO Ambient Air Quality Guidelines. Results as baseline data before mobilization.</i>	1 in Section B-C 1 in Section D-E 1 in Section F-G	Analytical methods outlined in the guideline of the MoE, or applied by MoE.	Once	1,785.00	Licensed Lab (for PMU)	PIC Envi Sp/ADB
2 Ambient noise levels L _{max} , L _{min} , L _{eq} <i>Review against the more stringent values between Annex 6 of Sub-Decree No. 42/ANK/BK (2000) & WHO Guidelines for Community Noise. Results as baseline data before mobilization.</i>	1 in Section B-C 1 in Section D-E 1 in Section F-G	Analytical methods outlined in the guideline of the MoE, or applied by MoE.	Once	195.00		
3 Groundwater quality pH, turbidity, conductivity, hardness, E. Coli, total coliform, F, As, Mn, NO ₂ , NO ₃ , Cl, SO ₄ , PO ₄ , Fe, <i>Review results against the more stringent values between Cambodia's Drinking Water Quality Standards (2004) & WHO Guidelines for Drinking-water Quality, 2011. Results as baseline data before mobilization.</i>	1 in Section B-C 1 in Section D-E 1 in Section F-G	Analytical methods outlined in Cambodia's Drinking Water Quality Standards, 2004	Once	261.00		
4 Surface water quality Temp, pH, conductivity, TSS, alkalinity, Total N, NO ₂ , NO ₃ , Cl, SO ₄ , PO ₄ , NH ₄ , Mg, Ca, K, Na, DO COD, Total P, Al, Si Fe, BOD, E-coli, coliform <i>Review results against Annex 5 of Sub-decree No. 27/ANK/BK (1999). Results as baseline data before mobilization.</i>	Tonle Sap River 1 upstream & 1 downstream of Section C-D	Analytical methods outlined in the guideline of the MoE, or applied by MoE.	Once	504.00		
5 Community health & safety conditions - Incidence of diseases associated with respiratory, nervous circulatory & digestive systems, skin, cancer, communicable/transmittable diseases - incidence of accidents (vehicular, fire, etc) & crime <i>Information as baseline data before mobilization.</i>	Commune/s of active section	Information from Commune Council, relevant commune health center, Mun. Health Department, Mun. Government	Once			
Sub-Total (Prior to Construction for baseline data)				2,745.00		

Aspects/Parameters to be Monitored	Location	Means of Monitoring		Estimated Cost (USD)	Responsibility	
					Implement	Compliance Monitoring
B. Construction Phase						
6 <u>Ambient air quality</u> PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ <i>Review against the more stringent values between Annex 1 of Sub-Decree No. 42/ANK/BK (2000) & WHO Ambient Air Quality Guidelines.</i>	Active section	Analytical methods outlined in the guideline of the MoE, or applied by. MoE.	Once quarterly	8,330.00	Licensed Lab (for Contractor)	PMU/PIU PIC Envi Sp/ADB*
7 <u>Ambient noise levels</u> L _{max} , L _{min} , L _{eq} <i>Review against the more stringent values between Annex 6 of Sub-Decree No. 42/ANK/BK (2000) & WHO Guidelines for Community Noise.</i>	Active section	Analytical methods outlined in the guideline of the MoE, or applied by. MoE.	Once quarterly	910.00		
8 <u>Groundwater quality</u> pH, turbidity, conductivity, hardness, E. Coli, total coliform, F, As, Mn, NO ₂ , NO ₃ , Cl, SO ₄ , PO ₄ , Fe, <i>Review results against the more stringent values between Cambodia's Drinking Water Quality Standards (2004) & WHO Guidelines for Drinking-water Quality, 2011. Results as baseline data before mobilization.</i>	Active section	Analytical methods outlined in Cambodia's Drinking Water Quality Standards, 2004	Once, quarterly	1,218.00		
9 <u>Surface water quality</u> Temp, pH, conductivity, TSS, alkalinity, Total N, NO ₂ , NO ₃ , Cl, SO ₄ , PO ₄ , NH ₄ , Mg, Ca, K, Na, DO COD, Total P, Al, Si Fe, BOD, E-coli, coliform <i>Review results against Annex 5 of Sub-decree No. 27/ANK/BK (1999). Results as baseline data before mobilization.</i>	Active section	Analytical methods outlined in the guideline of the MoE, or applied by. MoE.	Once, quarterly	504.00		
10 <u>Community health & safety</u> - Incidence of diseases associated with respiratory, nervous circulatory & digestive systems, skin, cancer, communicable/transmittable diseases - incidence of accident, fire & crime	Commune/s of active section	Information from, & close coordination with, Commune Council, relevant commune health center, Mun. Health Department, Mun. Government	Once, quarterly	-		
11 <u>Workers' health & safety</u> - Incidences of illness due to work - Incidences of work-related accident, injuries/deaths to emergencies, crime involving workers	Work site	Records of Safety Engineer	Once, quarterly	-		
Sub-Total (Construction)				10,962.00		
Sub-Total (Prior to Construction and During Construction)				13,707.00		
Aspects/Parameters to be Monitored	Location	Means of Monitoring	Frequency	Estimated Annual Cost (USD)	Responsibility	
					Implement	Compliance Monitoring
C. Operation Phase						
12 <u>Ambient air quality</u> PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ <i>Review against the more stringent values between Annex 1 of Sub-Decree No. 42/ANK/BK (2000) & WHO Ambient Air Quality Guidelines.</i>	1 in Section B-C 1 in Section F-G	Analytical methods outlined in the guideline of the MoE, or applied by. MoE.	Once, semi-annually	3,570.00	Licensed Lab (for Operator)	PMU/PIU PIC Envi Sp/ADB*
13 <u>Ambient noise levels</u> L _{max} , L _{min} , L _{eq} <i>Review against the more stringent values between Annex 6 of Sub-Decree No. 42/ANK/BK (2000) & WHO Guidelines for Community Noise.</i>	1 in Section B-C 1 in Section D-E 1 in Section F-G	Analytical methods outlined in the guideline of the MoE, or applied by. MoE.	Once, semi-annually	390.00		
Total Annual Cost (Operation)				3,960.00		

II. PERFORMANCE MONITORING

EMP PERFORMANCE MONITORING							
Aspects/Parameters to be Monitored	Location	Means of Monitoring	Frequency	Responsibility		Estimated Cost (USD)	
				Implement	Compliance Monitoring		
A. Prior to Construction Phase							
A.1 Detailed Design Preparation							
1 Completion of detailed design & O&M Manual incorporates EMP requirements.	Not applicable	Review of detailed design documents.	Once, prior to finalization Once, prior to approval	Design Consultant	PMU & PIC Envi Sp/ADB*	-	
A.2 Obtaining Environmental Clearance							
2 IEIA/EIA Report approval obtained	Not applicable	IEIA/EIAR approval document from MoE.	Once, at least 30 days prior to contract award	PMU	PIC Envi Sp/ADB*		
3 Intensive awareness program on health and safety hazards, communicable/transmittable diseases, on the grievance redress mechanism	All communes along the alignment	Review of relevant report of the PMU's Social, Environmental & Communication Teams.	Once, at least 30 days prior to contract award				
A.3 Procurement							
4 Procurement process complied with EMP requirements: SPS-compliant EMP part of bidding documents.	Not applicable	Verifying if EMP among bidding documents.	Once, prior to procurement				
C-EMP/EMP compliance stipulated in Contract	Not applicable	Review of Draft & Final Contract.	Once, during draft Once, prior to signing				
Contract stipulates some tie up of progress payment & collection of performance bond with performance in C-EMP/EMP implementation.							

Aspects/Parameters to be Monitored	Location	Means of Monitoring	Frequency	Responsibility		Estimated Cost (USD)
				Implement	Compliance Monitoring	
A.4 Post-Procurement Prior to Mobilization						
5 Preparation by selected Contractor its C-EMP, addressing Subproj. EMP requirements as minimum, & includes (but not limited to) plans for: aggregates mgmt; excavation mgmt (linked to removed soil mgmt); dust, noise & vibration controls; gas emission mitigation; sedimentation controls; solid & hazardous waste mgmt; traffic mgmt (to be coordinated with authorities); occupational health & safety; grievance redress; emergency response; environmental monitoring & reporting.	Not applicable	Verifying existence of C-EMP. Evaluating C-EMP against Subproj EMP.	Once prior to mobilization	Contractor	PMU/PIU PIC Envi Sp/ADB*	-
6 Have C-EMP cleared by ADB.	Not applicable	Verifying existence of ADB clearance.	Once prior to mobilization			
7 Environmental quality monitoring for baseline data according to the EMP.	1 in Section B-C 1 in Section D-E 1 in Section F-G	As prescribed in the Environmental effects Monitoring (Part I-A) of this Environmental Monitoring Plan.	Once prior to mobilization			
B. Construction Phase						
8 Environmental mitigation implemented according to the C-EMP/EMP.	Active section	Site inspections, random spot checks. Consulting affected residents. Review of lodged grievances. Review of records of workers accidents & sick leave. Consult relevant commune health center. Consult Mun. Health Department.	Regular & random Random Monthly Monthly Monthly Monthly	Contractor	PMU/PIU PIC Envi Sp/ADB*	-
9 Environmental effects monitoring conducted according to the EMP.	Active section	As prescribed in the Environmental effects Monitoring (Part I-A) of this Environmental Monitoring Plan.	As prescribed in Part I-A of this Environmental Monitoring Plan.	Licensed Lab (for Contractor)		
10 Informally lodged grievances acted on promptly and successfully &/or Grievance Redress Mechanism observed.	All sections	Review of lodged grievances. Consulting village/commune authorities.	Regular and random Monthly	Contractor		
11 Engineering investigation after each seismic &/or extreme weather event, and, if applicable, remediation works taken.	All sections	Review of investigation & remediation works report.	Latest, 1 week after each event			
12 Monthly EMR submitted promptly using prescribed outline	Not applicable	Review of Monthly EMR.	Monthly			
13 Quarterly EMR on effects monitoring submitted promptly.	Not applicable	Review of Quarterly EMR on effects monitoring.	Quarterly	Licensed Lab (for Contractor)		
C. Operation Phase						
14 Semi-annual EMR submitted promptly following prescribed outline.	Not applicable	Review of the Semi-annual EMR.	Semi-annually	Contractor & PMU	PIC Envi Sp/ADB*	-
15 Measures to mitigate non-sustainability of operation instituted, i.e., allocating adequate budget for proper maintenance & repair & environmental effects monitoring.	Not applicable	Site inspections, random spot checks, verifying promptness in maintenance & repair, & environmental effects monitoring.	Regular & random	Operator	PMU/PIU PIC Envi Sp/ADB*	-
16 Environmental effects monitoring conducted according to the EMP.	1 in Section B-C 1 in Section D-E 1 in Section F-G	As prescribed in the Environmental effects Monitoring (Part I-A) of this Environmental Monitoring Plan.	As prescribed in Part I-A of this Environmental Monitoring Plan.	Licensed Lab (for Operator)		
17 Informally lodged grievances acted on promptly and successfully &/or Grievance Redress Mechanism observed.	All sections	Review of lodged grievances. Consulting village authorities.	Regular and random Quarterly	Operator		
18 Engineering investigation after each seismic &/or extreme weather event, and, if applicable, remediation works taken.	All sections	Review of investigation & remediation works report.	Latest, 1 week after each event			
19 Monthly EMR submitted promptly using prescribed outline	Not applicable	Review of Monthly EMR.	Monthly			
20 Semi-annual EMR on effects monitoring submitted promptly.	Not applicable	Review of Semi-annual EMR on effects monitoring.	Semi-annually	Licensed Lab (for Operator)		
21 Annual EMR submitted promptly using prescribed outline.	Not applicable	Review of the Annual EMR.	Annually	Operator, PMU	PIC Envi Sp/ADB*	-
TOTAL COST						-

Environmental monitoring will consist of environmental effects monitoring; and performance monitoring. Environmental effects monitoring will cover: (i) ambient air quality; (ii) noise levels; (iii) groundwater quality; (iv) surface water quality; (v) community health and safety prior to construction and during construction and operation; and (vi) workers' health and safety during construction. Performance monitoring will monitor and evaluate the performance of the Design Consultant, Contractor, Operator, PMU and PIU in complying with, or adhering to, the C-EMP/EMP. A draft Environmental Monitoring Plan is presented as Table B.

Table C: Environmental Effect Monitoring

I. ENVIRONMENTAL EFFECTS MONITORING

ENVIRONMENTAL EFFECTS MONITORING						
Aspects/Parameters to be Monitored	Location	Means of Monitoring	Frequency	Estimated Cost (USD)	Responsibility	
					Implement	Compliance Monitoring
A. Prior to Construction Phase						
During procurement prior to awarding of contract for civil works						
1 Ambient air quality PM _{2.5} , PM ₁₀ , SO ₂ , NO ₂ <i>Review against the more stringent values between Annex 1 of Sub-Decree No. 42/ANK/BK (2000) & WHO Ambient Air Quality Guidelines. Results as baseline data before mobilization.</i>	1 in Section B-C 1 in Section D-E 1 in Section F-G	Analytical methods outlined in the guideline of the MoE, or applied by MoE.	Once	1,785.00	Licensed Lab (for PMU)	PIC Envi Sp/ADB
2 Ambient noise levels L _{max} , L _{min} , Leq <i>Review against the more stringent values between Annex 6 of Sub-Decree No. 42/ANK/BK (2000) & WHO Guidelines for Community Noise. Results as baseline data before mobilization.</i>	1 in Section B-C 1 in Section D-E 1 in Section F-G	Analytical methods outlined in the guideline of the MoE, or applied by MoE.	Once	195.00		
3 Groundwater quality pH, turbidity, conductivity, hardness, E. Coli, total coliform, F, As, Mn, NO ₂ , NO ₃ , Cl, SO ₄ , PO ₄ , Fe, <i>Review results against the more stringent values between Cambodia's Drinking Water Quality Standards (2004) & WHO Guidelines for Drinking-water Quality, 2011. Results as baseline data before mobilization.</i>	1 in Section B-C 1 in Section D-E 1 in Section F-G	Analytical methods outlined in Cambodia's Drinking Water Quality Standards, 2004	Once	261.00		
4 Surface water quality Temp, pH, conductivity, TSS, alkalinity, Total N, NO ₂ , NO ₃ , Cl, SO ₄ , PO ₄ , NH ₄ , Mg, Ca, K, Na, DO COD, Total P, Al, Si Fe, BOD, E-coli, coliform <i>Review results against Annex 5 of Sub-decree No. 27/ANK/BK (1999). Results as baseline data before mobilization.</i>	Tonle Sap River 1 upstream & 1 downstream of Section C-D	Analytical methods outlined in the guideline of the MoE, or applied by MoE.	Once	504.00		
5 Community health & safety conditions - Incidence of diseases associated with respiratory, nervous circulatory & digestive systems, skin, cancer, communicable/transmittable diseases - incidence of accidents (vehicular, fire, etc) & crime <i>Information as baseline data before mobilization.</i>	Commune/s of active section	Information from Commune Council, relevant commune health center, Mun. Health Department, Mun. Government	Once			
Sub-Total (Prior to Construction for baseline data)				2 745.00		

b. Monitoring activities in the reporting period.

There is no activity yet to report this period. Typical reporting table is presented for future reference/use

Table 4: Environment Effect Monitoring Results in the Reporting Period

Location	Parameter	Date	Monitoring value	Relevant government standard, standard value

c. Assessment

There is no activity yet to report this period. Monitoring aspect will be commenced intensively as the detailed designs and works procurement is completed and initiated respectively

IV. INVOLUNTARY RESETTLEMENT PERFORMANCE MONITORING

Involuntary Resettlement monitoring. Internal monitoring by the MPWT through the PMU, with support from the PMIS consultants, will serve to evaluate (i) compliance with the Project's social safeguards policies and procedures, including resettlement; (ii) timely availability of personnel, material, and financial resources and efficient use of these to implement land acquisition and resettlement activities; and, (iii) identification of problems, if any, and development of remedial actions to address these.

The PMU will review and confirm the suggested internal monitoring indicators below, procedures and reporting requirements for all project components that involve resettlement and

will report on resettlement implementation progress as part of quarterly project progress reports submitted to IRC and ADB.

The internal indicators will include:

- ✓ **Compensation and entitlements computed at rates and procedures as provided in the RPs agreed between the government and ADB;**
- ✓ **Timely and complete disbursement of compensation to AHs in accordance with the agreed RPs, and as per agreement with Project authorities;**
- ✓ **Timely and complete delivery of relocation, income restoration and rehabilitation allowances and measures;**
- ✓ **Public information, public consultation and grievance redress procedures are followed**
- ✓ **as described in the approved RPs;**
- ✓ **Attention given to the priorities of AHs regarding the options offered;**
- ✓ **Public facilities and infrastructure affected by the Project are restored promptly; and,**
- ✓ **The transition between resettlement and civil works is smooth (i.e. completion of resettlement activities required before the award of civil works contracts)**

All consultation minutes, relevant documentation, signed compensation forms, etc. will be included in the records/documentation to be maintained by the PMU on behalf of the EA and made available to ADB during missions and/or for due diligence and spot check.

External Monitoring. The External Monitoring Organization (EMO) will be recruited by the IRC and will commence its work prior to or during the DMS, and will carry out independent quarterly reviews of RP to determine whether intended goals are being achieved, and if not, what corrective actions are needed and will likewise conduct a post-resettlement evaluation study 6 - 12 months after the completion of RP implementation. Apart from reviewing and assessing the activities during RP updating, the general objective for external monitoring is to verify results and findings of the internal monitoring. Essentially the verification includes an assessment of: (i) the achievement of resettlement objectives, (ii) changes in living standards and livelihoods, (iii) the restoration of the economic and social conditions of the AHs, (iv) the effectiveness, impact and sustainability of assistance measures, (v) the need for further mitigation measures, if any; and, (vi) to identify strategic lessons for future policy formulation and planning.

The EMO will be responsible for checking the procedures and resolutions of grievances and complaints. The EMO may recommend further measures to be taken to redress unresolved grievances in compliance with the resettlement plans. The EMO will submit quarterly external monitoring reports to IRC, and then IRC will forward to MPWT and ADB. The EA and IRC shall work closely to ensure that resettlement activities are completed in accordance with the updated RPs.

Table 6: Summary of Compliance with RP Requirements

RP Requirements	Compliance status Yes/No/Partial	Comment or Reasons for Compliance, Partial Compliance/Non- Compliance	Issues for Further Action ⁴
Establishment of personnel in PMU/PIU	YES	{Complied--see ADB Inception Mission Aide- memoire for detailed staffing list	Few positions are to be confirmed and expanded as per recommendation
Public consultation and socialization process	Yes	{ Public consultation, participation activities carried out in project preparation and prior to Loan effectiveness.	
Land area to be acquired is identified and finalized	Yes As agreed in project documents--and to be reviewed and confirmed by Detailed Designs	<ul style="list-style-type: none"> Estimated and Reported in Project documents Land area (of each parcel to be acquired) (To Be Confirmed) <p><i>An estimated 78,815.25 m2 of land (56,945.75m2, public land and 21,869.50m2 private land) will be acquired by the project.</i></p> <p><i>The estimated cost of resettlement (as of 21 August 2014) is \$257,393.53 (about \$203,618.84 in Kampong Chhnang, and \$ 534,774.69 in Pursat). This includes the base costs, allowances for severely affected and vulnerable APs, external monitoring organisation, contingencies and administrative costs.</i></p> <p><i>Project information was disclosed throughout the project preparation through continued consultations and focus group discussions with the affected people and will be continued during</i></p>	Reviews and updates to be completed/confirmed as outlined in the project documents (after DD) and in accordance with the GDR regulations

⁴ To be elaborated further in table 3.b (Issues for Further Action)

		<p><i>the entire project cycle.</i></p> <p><i>Current land use (residential, agri, etc.) (To Be Confirmed)</i></p> <p><i>Agricultural land uses are affected.</i></p> <ul style="list-style-type: none"> • Current ownership status (private, state) (To Be Confirmed) 	
Resettlement plan(s) updated after detailed design	No yet due		
Land acquisition completed	Not yet due		
Establishment of Resettlement Site(s)	To be Confirmed (ref. GDR/ADB guidelines)	<ul style="list-style-type: none"> • Number of AHs to be relocated as per agreed RP <p><i>About 139 affected households (AHs) with 576 Affected Persons (APs) have been identified in the participating towns. Out this number 123 AHs, equivalent to 515 APs in Kampong Chhnang Town, and 16 AHs (61 APs) in Pursat Town. There are 23 severely affected households (102 APs) in Kampong Chhnang; one (1) AH (5 APs) will be severely affected by acquisition of private agricultural land equal to 10% or more of their total productive (income-generating) assets, and the remaining 22 AHs (97 APs) will be severely affected due to permanent loss of land use equivalent to 10% or more of their total productive (income-generating) assets. Two (2) AHs (6 APs) will be severely affected in Pursat due to loss of agricultural land/permanent loss of land use equivalent to</i></p>	

		<p><i>10% or more of their total productive assets.</i></p> <p><i>Number of AHs already relocated (TO BE CONFIRMED)</i></p> <ul style="list-style-type: none"> • Number of houses built (NOT YET KNOWN) • Status of installation of community facilities to be provided as per agreed RP (NOT YET KNOWN) 	
Compensation payments for affected assets is completed	Not Yet due	<ul style="list-style-type: none"> • Total Number of Eligible AHs and APs (as per agreed RP) • Number of AHs and APs compensated as of this monitoring period • Total Budget allocation as per agreed RP • Total budget disbursed to AHs as of this monitoring period 	
Transport assistance for relocating affected households	Not Yet Due-to be confirmed	<i>As above</i>	
Additional assistance to vulnerable affected household	Not Yet Due-to be confirmed	<ul style="list-style-type: none"> • Total Number of vulnerable AHs and APs (as per agreed RP) • Agreed forms of assistance as per RP • Number of AHs and APs assisted as of this monitoring period 	
Income Restoration Program	To Be Confirmed by GDR/ADB guidelines	<i>Please state progress per income restoration feature/activity and actual period of implementation</i>	
Temporary impacts have been addressed (affected properties restored to at least pre-project conditions)		<ul style="list-style-type: none"> • Total Number of AHs affected by temporary impacts as per agreed RP • Actual Number of AHs and total area affected by temporary impacts (if this differs from the projected number, such as in cases of 	

		unforeseen project impacts) • Status of restoring affected property	
Capacity building activities			

**Table 7: Issues for Further Action
(NO ISSUES TO REPORT THIS PERIOD)**

Issue	Required Action	Responsibility and Timing	Resolution
Old Issues from Previous Reports			
List of RP activities not completed (last column of previous table)			
New Issues from This Report			

V. COMPLIANCE WITH SAFEGUARDS RELATED PROJECT COVENANTS

Schedule	Para No.	Covenant	Remarks/Issues (Status of Compliance)
Schedule 5	6	Environmental Decommissioning of Open Dumpsites. The Borrower shall ensure and cause the Project Executing Agency to ensure that the open dumpsites in Kampong Chhnang and Pursat relating to the Project shall be closed and properly decommissioned according to the plans set forth in the IEEs and finally in the IEEs updated during detailed design.	Complied at Project Appraisal stage--to be continued as prescribed at detailed design and implementation stages--{
Schedule 5	9	Environment. The Borrower shall ensure, and cause the Project Executing Agency to ensure, that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Borrower relating to environment, health and safety; (b) the Environmental Safeguards; and (c) all measures and requirements set forth in the EARF, IEEs, the EMPs, and any corrective or preventative actions set forth in a Safeguards Monitoring Report. The Borrower shall ensure, and cause the Project Executing Agency to ensure, that the foregoing is applied and implemented for all outputs of the Project described in Schedule 1, regardless of the financing	Complied

		source.	
Schedule 5	10	<p>Land Acquisition and Involuntary Resettlement. The Borrower shall ensure, and cause the Project Executing Agency to ensure, that all land and all rights-of-way required for the Project are made available to the Works contractor in accordance with the schedule agreed under the related Works contract and all land acquisition and resettlement activities are implemented in compliance with the RPs based on (a) all applicable laws and regulations of the Borrower relating to land acquisition and involuntary resettlement; (b) the applicable principles and requirements set forth in the SPS; and (c) any necessary corrective or preventative actions as agreed by the IRC set forth in a Safeguards Monitoring Report.</p> <p>Without limiting the application of the SPS or the RPs, the Borrower shall ensure or cause the Project Executing Agency to ensure that no physical or economic displacement takes place in connection with the Project until:</p> <ul style="list-style-type: none"> (a) prior to the award of any Works contract which involves involuntary resettlement impacts, the Borrower has (i) updated the agreed RPs following completion of detailed design; and (ii) prepared, disclosed to affected persons and submitted to ADB the final RPs based on the Project's detailed design and obtained ADB's concurrence with such RPs; (b) compensation and other entitlements have been provided to affected people in accordance with the RPs; and (c) a comprehensive income and livelihood improvement program has been put in place in accordance with the RPs. 	Complied with, Action to be taken: Recruitment of external monitoring organization to monitor implementation of the RPs to be undertaken by the IRC.
Sched 5,	11	<p>Indigenous Peoples. The Project, including Output 3 described in Schedule 1 hereto, shall benefit Ethnic Minorities. The Borrower shall ensure and cause the Project Executing Agency to ensure, that it adheres to applicable laws and regulations of the Borrower relating to indigenous peoples, and the Indigenous Peoples Safeguards and any corrective or preventative actions set forth in a Safeguard Monitoring Report.</p>	Complied

Sched 5	12	Human and Financial Resources to Implement Safeguards Requirements. The Borrower shall ensure, and cause the Project Executing Agency to ensure, to make available the necessary budgetary and human resources to fully implement the EARF, EMPs and the RPs.	Complied
Sched 5	13	<p>Safeguards – Related Provisions in Bidding Documents and Works Contracts. The Borrower shall ensure, and cause the Project Executing Agency to ensure, that all bidding documents and contracts for Works contain provisions that require contractors to:</p> <ul style="list-style-type: none"> (a) comply with the measures relevant to the contractor set forth in the EARF, IEEs, the EMPs and the RPs (to the extent they concern impacts on affected people during construction), and any corrective or preventative actions set forth in a Safeguards Monitoring Report; (b) make available a budget for all such environmental and social measures; and (c) provide the Borrower with a written notice of any unanticipated environmental, resettlement or indigenous peoples risks or impacts that arise during construction, implementation or operation of the Project that were not considered in the EARF, IEEs, the EMPs and the RPs. 	Complied
Sched 5	14	<p>Safeguards Monitoring and Reporting The Borrower shall ensure, and cause the Project Executing Agency to do the following:</p> <ul style="list-style-type: none"> (a) no later than the commencement of land acquisition and resettlement activities, engage qualified and experienced external monitoring organization(s) (EMO), under the terms of reference(s) acceptable to the Borrower and ADB to verify information produced through the Project monitoring process and facilitate the carrying out of any verification activities; (b) submit quarterly Safeguards Monitoring Reports relating to implementation of and compliance with the RPs and submit 	Complied

		<p>semiannual Safeguards Monitoring Reports relating to the implementation of and compliance with the EARF, EMPs, and any IPP (if it becomes applicable), in each case to ADB and disclose relevant information from such reports to affected persons promptly upon submission;</p> <p>(c) if any unanticipated environmental and/or social risks and impacts arise during construction, implementation or operation of the Project that were not considered in the EARF, IEEs, the EMPs and the RPs, promptly inform ADB of the occurrence of such risks or impacts, with detailed description of the event and proposed corrective action plan; and</p> <p>(d) report any actual or potential breach of compliance with the measures and requirements set forth in the EARF, EMPs or the RPs promptly after becoming aware of the breach.</p>	
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VI. PUBLIC CONSULTATION, INFORMATION DISCLOSURE, CAPABILITY BUILDING

There no activity start yet.

- Field Visits (sites visited, dates, persons met)
- Public Consultations and meetings (Date; time; location; agenda; number of participants disaggregated by sex and ethnic group, not including project staff; Issues raised by participants and how these were addressed by the project team)
- Training (Nature of training, number of participants disaggregated by gender and ethnicity, date, location, etc.)
- Press/Media Releases
- Material development/production (e.g., brochure, leaflet, posters)
- Information disclosure

VII. GRIEVANCE REDRESS MECHANISM

The grievance redress mechanism for environment is detailed in the EARF for Output 3 and IEEs for Kampong Chhnang and Pursat, and will be followed accordingly (to be established in Q1/Q2 2017).

The provincial grievance redress committee will be established in accordance with the resettlement plans. They will:

- Receive and act on the complaints and grievances of AHs in accordance with the Project resettlement policy; and**
- Maintain a record of all public meetings, grievances, and actions taken to address complaints and grievances**

A grievance redress mechanism (GRM) has been formulated to receive and respond to public complaints on the environmental performance of the subprojects. It has been disclosed to affected communities in the joint social/resettlement and environmental public consultation meetings. The GRM will accommodate both informally and formally lodged, but eligible, grievances. If an informally lodged eligible complaint is not acted on within three days from receipt of complaint by Contractor/Operator, or if AP is not satisfied with the resolution undertaken by the Contractor/Operator, he/she can access the formal mechanism, as follows:

Step 1	AP lodges complaint, by him/herself or with assistance from the Village Leader, at the access points of the PIU, Municipality or Commune Council. (Day 1)
Step 2	PIU/Municipality/Commune Council documents/registers lodged complaint, makes sure these are duly referenced and provides AP with a copy of referenced complaint. The Municipality forwards documented complaint to the PIU; the Commune Council, through the Municipality. (Day 1)
Step 3	AP shall be informed if the grievance is eligible or ineligible. If it is ineligible, AP shall be directed to the Municipality. If complaint is eligible, AP shall be informed of the expected action timelines as set out in the established mechanism. If both of the AP and Contractor/Operator are available, the complaint shall be immediately reviewed, investigated and discussed. If not, both parties should agree to undertake the review, investigation and discussion within 3 days. (Day1/Day 2/Day 3)
Step 4	If complaint is minor, the Contractor/Operator shall immediately implement agreed on action/resolution. If further investigation and/or procurement of supplies/parts would be necessary, the Contractor/Operator shall: (i) immediately provide the most suitable interim measure to reduce the magnitude of the impact; and (ii) start work on the final measure within 5 days from the day discussion meeting is held. (Day 3/Day 4 to Day 7/Day 8)
Step 5	If, according to the AP, the impact has been resolved satisfactorily, PIU shall obtain a written confirmation of satisfaction from the AP. This confirmation will signify closure of grievance and will form part of the grievance documentation. (1 week after completion of action/measure taken)
Step 6	The PMU shall monitor the effectiveness of the resolution for at least a week after closure of grievance (that is, when action implemented has been satisfactorily confirmed in writing by the complainant). Monitoring and evaluation shall be properly documented and included in the Environmental Monitoring Report (EMR). (for 1 week after closure of grievance)
Step 7	When dissatisfied (or, in the event the issue/impact persists despite actions undertaken), AP can appeal for assistance from the Municipality in the elevation of his/her complaint to the Province. The Province shall call all parties concerned to assess the validity of the appeal. If appeal is found not valid, the Province shall write the AP and declare the grievance closed. If appeal is assessed to be valid, PMU will require Contractor/Operator to implement the discussed/agreed resolution. Should the issue continue to persist despite the second action, dissatisfied AP can raise an appeal to the Provincial Court.

- Number of new grievances, if any, since last monitoring period: ____
- Number of grievances resolved: ____
- Number of outstanding grievances: ____

Type of Grievance	Details (Date, person, address, contact details, etc.)	Required Action, Responsibility and Timing	Resolution
Old Issues from Previous Reports			

New Issues from This Report			

VIII. CONCLUSION

There is no significant related activity started in the project at the time of this initial or baseline SMR. The subsequent reporting in 2017 and onwards would provide more progress specific information.

IX. ATTACHMENTS

(No Contents for this report)