



Ministry of Public Works and Transport

# Integrated Urban Environmental Management in the Tonle Sap Basin Project

## QUARTERLY PROGRESS REPORT NO. 4

01 October to 31 December 2017



January 2017

SUBMITTED BY\_



IN JOINT VENTURE WITH\_



IN ASSOCIATION WITH\_



**Consulting Services for Project Management and Implementation Support (PMIS, Package 1)**

*Integrated Urban Environmental Management in the Tonle Sap Basin Project (IUEMTSBP)*

*ADB LoanNo.3311-CAM (SF) / 8295-CAM (SCF) / Grant 0454-CAM--Contract No. PMU/MPWT/IUEMTSP/QCBS/16/001*

## INTEGRATED URBAN ENVIRONMENTAL MANAGEMENT IN THE TONLE SAP BASIN PROJECT

### QUARTERLY PROGRESS REPORT No.4

01 OCTOBER – 31 DECEMBER, 2017

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**ABBREVIATIONS**

ADB	Asian Development Bank
AH	Affected household
AM	Aide Memoire
ASEAN	Association of Southeast Asian Nations
CMEI	Community Mobilization and Environmental Improvements
CSEC	Cambodia Socio-Economic Consensus
DMF	Design and monitoring framework
EA	Executing Agency
EMP	Environmental management plan
GMS	Greater Mekong Subregion
ICB	International competitive bidding
IDPoor	Identification of Poor Households Programme
IEC	Information, education and communication
IEE	Initial environmental examination
JICA	Japan International Cooperation Agency
MEF	Ministry of Economy and Finance
MOE	Ministry of Environment
MOWRAM	Ministry of Water Resources and Meteorology
MPWT	Ministry of Public Works and Transport
NCB	national competitive bidding
NGOs	Nongovernment organizations
OJT	On-the-job training
O&M	Operation and maintenance
PAM	Project administration manual
PDPWT	Provincial departments of public works and transport
PIU	Project implementation unit
PMIS	Project management and implementation support
PMU	Project management unit
PPCR	Pilot program for climate resilience
PPMS	Project Performance Management System
PPTA	Project preparation for technical assistance
PSC	Project Steering Committee
QCBS	Quality- and cost based selection
RP	Resettlement plans
SWM	Solid waste management
TOR	Terms of reference
TSA	Tonle Sap Authority
TSUADF	Tonle Sap Urban Areas Development Framework
USUs	Urban Service Units

## 1 EXECUTIVE SUMMARY

### 1.1 Background

1. The project was approved on 10 November 2015 and declared effective on 2 March 2016. The project aims to increase economic activities and environmental protection in the towns of Kampong Chhnang and Pursat in the Tonle Sap Basin. The outcome is expected to be improved urban services and enhanced climate change resilience in Kampong Chhnang and Pursat municipalities. The project has five outputs: (i) Kampong Chhnang Urban Area Improvements; (ii) Pursat Urban Area Improvements; (iii) Community Mobilization and Environmental Improvements, (iv) Strengthened Sector Coordination and Operations and (v) Strengthened Capacity for Project Implementation and operations and maintenance (O&M). The key infrastructure financed under the project includes flood protection infrastructure (embankment), construction of a new landfill facility and improvement of solid waste management and community-driven environmental improvements in Kampong Chhnang; and improvement of the storm water drainage, treatment of waste water, construction of a new landfill facility improvement of solid waste management and community-driven environmental improvements in Pursat. The planned improvements of the river embankment along the Tonle Sap have been cancelled as these improvements will be financed under an EU financed project.

### 1.2 Overall Project Progress

2. The overall progress of project implementation is estimated to be 7.9% against and elapsed time from the date of project effectiveness of 25.9 %. As per the revised implementation schedule (see annex 1) the actual progress is about 1 week behind the planned progress at the end of the reporting period (31-12-2018).

#### 1.2.1 Kampong Chhnang Flood Protection Embankment

3. Topographic survey works and geotechnical investigations in the alignment of the flood protection embankment are ongoing and are scheduled to be completed with the presentation of the respective final reports by 25 January 2018. After the completion of the survey works and geotechnical investigations the detailed design of the embankment will be started. Based on the validation of the PPTA proposal two basic options for the design of the flood embankment have been discussed.

- Refocus the embankment from its conventional flood protection purpose to river/water front development with the main objective to enhance the commercial, tourist and recreational development of the waterfront area itself instead of focusing on the protection and drainage of the low lands behind the embankment. This proposal would fit in with in the 5-year plan of the provincial government to develop and beautify the riverfront.
- A shorter low cost version of the original embankment proposed in the PPTA that focusses on flood protection of small urban sections of Kampong Chhnang that are located in areas below high flood level, mainly around the access to the tourist port. The savings of this low cost embankment would be applied to improvement of drainage in low lying areas behind the embankment and in general the overall drainage of the town area. Saving would also allow for the construction of a WWTP under the project.

4. In subsequent discussions it was agreed that the latter would be the preferred option. The PMIS is finalizing the design of the flood protection embankment based on this preferred option. As the cost savings under this option would allow for the improvement of drainage in the Kampong Chhnang urban area, it is proposed that the PMIS will prepare a drainage master plan for the town. Based on this masterplan, a detailed planning report can be prepared for priority interventions that could be financed under the project. The timeline for the preparation of this proposed masterplan is crucial as fieldwork would have to be completed during this dry season. However, for preparation this masterplan under the PMIS a contract variation would be needed.

5. Initial results of study commissioned by the Mekong River Commission on Modelling of Future Land-Use, Infrastructure & Flood Behaviour across the Cambodian Floodplain, Tonle Sap and The Mekong Delta of Cambodia and Vietnam confirmed that the design height of the embankment can be reduced from 13 m (height adopted by the PPTA) to 12 m. Peak Water levels from long time series simulation and the maximum from the 24 year series range from about 10 m to 10.50 m in Kampong Chhang and the peak water levels for the estimated 1:100 year event range between 10.60 m and 11.80 m for different development and land use scenarios. The full results of the study will be available in a first draft by February 2018

#### 1.2.2 Pursat Town Drainage Improvement

6. The detailed design of the Pursat drainage system was started by checking and/or confirming the inverted levels of the existing pipe lines, the diameter of the existing pipes, the condition and the extend of blockage of the pipe lines and main holes by sand, debris or waste. This input was required for setting up the drainage simulation

model. The investigation of the existing pipelines confirmed the initial assessment that the majority of pipes were partially or fully blocked, which seems to be one of the main reasons for the ineffective drainage of the Pursat town area. It is expected that the detailed design of the drainage system improvement can be completed by the end of March 2018.

7. It has transpired that a larger alternative site is available for the construction of the WWTP. This site is located on the right bank of the presently defunct irrigation canal about 4.16 km west of the originally selected site for the WWTP. From elevations derived from the SRTM 30 m DEM, the new site is located at approximately the same level as the present site selected for the WWTP, which would imply that pumping will be required to convey sewage from the town area to the proposed revised location of the WWTP. To complete the detailed design for this location additional topographic survey work will be required. Therefore, the detailed design of the WWTP and transmission line between this new site and the town area can only be completed during the 2<sup>nd</sup> quarter of 2018.

#### 1.2.3 Solid Waste Management, construction of new sanitary landfill sites and closure of existing dump sites

The detailed design for the originally selected site in Pursat and the Kampong Chhnang site have been started and about respectively 70% and 80% of designs are completed. The area selected for the Pursat sanitary landfill and its access is flooded during the rainy season and will require costly filling to raise the ground level of the site above the level of flooding. After carefully consideration project propose that bottom construction will include two layers; asphalt liner (5 cm) and geotechnical barrier (60 cm). This solution is adopted as clay with sufficient plasticity is not easily available in the subproject area and geomembrane lining can be damaged by fire. Moreover, because the initial low rate of waste collection large sections of the bottom lining will remain exposed for a long period of more than two years and the exposed clay and/or geomembrane lining could be easily damaged.

8. During the reporting period a model was finalized for the calculation of service fees that would guarantee the financial viability for of municipal SWM including the O&M of local sanitary landfills and collection/management equipment

9. The list of equipment for waste collection and landfill management will have to be critically reviewed considering the future operation modalities for waste management – directly by the to be created USUs or with the participation of private sector contractors – and the initial low level of waste collection which can easily lead to under-utilization of equipment and therefore high operation and maintenance cost. The list of needed equipment is still open and under discussions with both municipalities, because they should decide an operation model to run landfills. The main issue is to decide who will be responsible for landfill management– municipality or contractor.

#### 1.2.4 River Bank Protection for the Pursat River

10. Local authorities have informed that the proposed improvement of the Pursat river bank will now be undertaken with funding from the European Commission.

### 1.3 **Fund Utilization**

11. As result of the delays in project implementation the fund utilization is low with only a total amount of contracts awarded of 2.7% as a percentage of the total loan amount. The total amount allocation is USD 47,133,413, Contracts Awarded USD 4,799,031, Uncontracted Loan Balance USD 42,334,382, Contracts Disbursed USD 1,269,670, and the Undisbursed Contract Balance is USD 3,529,361.

### 1.4 **Safeguards**

#### 1.4.1 Resettlement

12. Ministry of Economy and Finance (MEF) General Department of Resettlement (RD-MEF) have set up Provincial Resettlement Sub-Committees Working Groups (PRSC-WG) in October 2017 for Kampong Chhnang and Pursat. RD-MEF has also provided guidance to the Provincial Resettlement Sub-Committees (PRSC) to operationalize Grievance Redress Mechanism (GRM) for the project in mid-October 2017.

13. RD-MEF are planning for the public consultations in November 2017 to take place before Detailed Measurement Survey (DMS) and Socio-Economic Survey (SES). RD-MEF will also update and dissemination the Public Information Booklets (PIB) to all the affected households (AH). DMS and SES will cover 100% of the AHs to provide accurate and comprehensive data, which also will be gender disaggregated. DMS was planned to be undertaken from beginning of October 2017, but currently key sections of the embankment right-of-way (ROW) in Kampong Chhnang are flooded, making DMS currently impossible, especially as the majority of AHs whom are fishermen are going to be very busy with the peak fishing season. Hence, initially the concentration will be on identification in Kampong Chhnang of AHs already relocated to resettlement site and the ones self-relocated, while DMS/SES can be done with AHs on sections not flooded (such as tourist port), and waste pickers in both Kampong Chhnang and Pursat.

14. RD-MEF has also already started the process in October 2017 for recruitment of the External Monitoring Organization (EMO) and consultant for the Replacement Cost Survey (RCS). Update of the Resettlement Plan (RP) will also include Livelihood and Income Restoration Plan (LIRP) for vulnerable and severely AHs.

#### 1.4.2 Environment

15. During the reporting period any potential issues associated with the IEE, EMPs and overall design for the Project's sub-projects were identified. Following a brief examination of the project and a selection of the available documents, the following issues are highlighted and will require attention or further investigation by the environmental safeguards and solid waste management teams;

- Legislation & Policy context.
- Domestic EIA Approval
- Site Selection and Design for Landfills
- Embankment design for Kampong Chhnang

### 1.5 **Loan Covenants**

The Project is being brought in compliance with Schedule 5, Paragraph 10 (Land Acquisition and Involuntary Resettlement) and Schedule 5, Paragraph 14 (Safeguards Monitoring and Reporting) of the loan agreement as GDR has substantially completed the DMS of AHs in the Kampong Chhnang flood embankment alignment. The project is not yet in compliance with Schedule 5, para 3 Roadmap for Establishing Urban Service Units: Within 12 months of the Effective Date and Schedule 5, para 4, Environmental Sanitation Fees. Within 18 months of the Effective Date. This non-compliance is directly related to the problems in obtaining consulting services under the CS03 package for institutional support that would have provided direct support for establishing the USUs. It is proposed to include this task under the PMIS ToR.

### 1.6 **Consultant Services**

16. Up to the end of this reporting period, 30 September 2017, the total person months used by the International Specialists is 14.8 person-month out of a total provision of 78 person-month, leaving a balance of 63.2 person-month., the total person months used by the National Specialists is 44 person month out of a total provision of 428 person month, leaving a balance of 384 person month.

17. A second contract variation will be required to formalize and/or include the following changes in the agreed consultant services and inputs under the contract.

- to remove the procurement and financial management support from the consultancy (as this expertise is now covered by the contractual staff recruited to the PMU)
- to replace the proposed specialists for 3 international positions, and 2 national positions
- to consolidate the 4 positions for national specialists to assure continuity in their services
- to include a provision for home office input for the international specialists
- to merge the CS03 TOR with the TOR of the PMIS consultant services with would require an increase of 3.5 person-month for international specialists and the addition of a position for a national legal specialist with an input of 3 person-month.
- to increase the allocation for topographical survey works under the provisional sum for supplementary survey works for the detailed design of the Kampong Chhnang flood embankment, the transmission line and site for the new WWTP in Pursat and for a spot level survey of the kampng Chhnang municipal area to support the preparation of a drainage master plan.
- To include a position for an international drainage/waste water treatment specialist to support the detailed design of the Pursat WWTP and the preparation of the Kampong Chhnang drainage master plan including the identification and detailed design of selected priority measures.
- Include short term input provisions for national specialists in structural, electrical and mechanical design to support detailed design of specific infrastructure components (bridge, large culverts, pumping stations, structural and electro-mechanical details of WWTPs etc.)
- Increase the budget allocation for equipment for the PMIS.

### 1.7 **Targets for the next quarter**

18. The targets for the next quarter can be summarized as follows:

- Finalize the detailed designs and cost estimates for the Kampong Chhnang and Pursat sanitary landfill facilities, the improvement of the Pursat town drainage system and the Kampong Chhnang flood protection embankment, including the bidding documents for submission to ADB for approval.
- Start the detailed design of the WWTP for Pursat, and if the facility would be constructed at its new location, the detailed design of a main sewer line between the town area and the new WWTP location, including the required pumping stations.
- Initiate preliminary works for the preparation of a drainage master plan for Kampong Chhnang. The preparation of such a plan will be subject to the approval of a contract variation for the PMIS consultant services contract.
- Initiate updating the IEEs for the several subprojects prepared under the PPTA including the preparation of EMPs and arrange for the preparation of the government mandated IEIAs by an external consultant.
- Complete DMS/SES as well as RCS for 51 stall owners and 210 AHs already partially resettled along Kampong Chhnang flood embankment sub-project. Initiate corrective action plan based on compliance review and in accordance of ADB SPS (2009) for the 210 AHs. Begin public consultations and DMS/SES with remainder of affected households along flood embankment. Undertake public consultations with affected households for Pursat drainage sub-project. Complete public consultations, DMS/SES and distribution of PIB to all AHs in Pursat and Kampong Chhnang landfill sites, including waste pickers. Prepare updated Resettlement Plans for both landfills.
- Initiate the institutional development support with; (i) a training needs assessment that would be the basis for the formulation of a training plan; (ii) support the preparation of a road map for the establishment of USUs and; (iii) investigate possible modalities for SWM, this would also include refining the model for the establishment of sustainable environmental service fees.

## 2 PROJECT BACKGROUND

### 2.1 Background

19. The project was approved on 10 November 2015 and declared effective on 2 March 2016. The impact of the project will be increased economic activities and environmental protection in the two towns in the Tonle Sap Basin. The outcome will be improved urban services and enhanced climate change resilience in Kampong Chhnang and Pursat municipalities. The project has five outputs:

- (i) Kampong Chhnang Urban Area Improvements which comprises the improvement of a 15 km long flood protection embankment, and the improvement of solid waste management through the proper closure of existing dumpsite and the construction of a new solid water landfill together with the provision of the required equipment, institutional strengthening and community awareness creation.
- (ii) Pursat Urban Area Improvements through the improvement of storm water drainage in the urban area, the closure of the existing solid waste dump site, the construction of a new solid waste landfill site, selective erosion control of the Pursat river, and the assessment of flood hazards from the Pursat river with the formulation of mitigating measures
- (iii) Community Mobilization and Environmental Improvements, to support the Kampong Chhnang, and Pursat urban area developments through community driven environmental improvements
- (iv) Strengthened Sector Coordination and Operations and
- (v) Strengthened Capacity for Project Implementation and operation and maintenance (O&M) of urban infrastructure in general and the created infrastructure in particular.

### 2.2 Project Basic Data

<b>Project Title</b>	<b>Integrated Urban Environmental Management in the Tonle Sap Basin Project</b>		
<b>Project Acronym</b>	<b>IUEMTBP</b>		
<b>Project Financing</b>	<b>Asian Development Bank ADF Loan</b>	<b>SDR 26,4M (USD 37M equivalent)</b>	<b>3311-CAM (SF)</b>
	<b>ADB Strategic Climate Fund loan</b>	<b>USD 5M</b>	<b>8295-CAM (SCF)</b>
	<b>ADB Strategic Climate Fund grant</b>	<b>USD 5M</b>	<b>0454-CAM (SCF)</b>
<b>Borrower</b>	<b>Kingdom of Cambodia</b>		
<b>Project Approval</b>	<b>10 November 2015</b>	<b>Signing of Loan</b>	<b>22 December 2015</b>
<b>Date of Effectiveness</b>	<b>02 March 2016</b>	<b>Closing Date</b>	<b>30 April 2023</b>
<b>Project Completion Date</b>	<b>October 2022</b>	<b>Overall project implementation progress</b>	<b>7.9%</b>
<b>Elapsed Period</b>	<b>25.9%</b>	<b>Revised Loan Closing Date</b>	<b>N/A</b>
<b>Progress on Contract Award and Disbursement</b>	<b>Contract Award</b>	<b>10.2%</b>	<b>Disbursement</b> <b>2.7%</b>
<b>Project Executive Agency</b>	<b>Ministry of Public Works and Transport (MPWT)</b>		
<b>Project Director</b>	<b>H.E. Vong Pisith, Deputy Director General MPWT</b>		
<b>Consultant ISPMC</b>	<b>KECC in JV with NIRAS and associated with KCC</b>		
<b>Team Leader</b>	<b>Mr. Louis Rijk,</b>		
<b>Dep .Team Leader</b>	<b>Mr. Srey Socheat</b>		
<b>ADB Task Manager</b>	<b>Mr Sameer A. Kamal</b>		

### 2.3 Document

<b>Document Title</b>	<b>Quarterly Progress Report No. 01</b>
<b>Reporting Period</b>	<b>01 JULY TO 30 SEPTEMBER 2017</b>
<b>Author(s) &amp; project role</b>	<b>Louis Rijk Team Leader/Municipal Engineer PIMS, Mr. Kerry Blance, Mr. Teemu Jantunen, Resettlement Specialists</b>

## 2.4 ADB Review Missions

20. Altogether ADB has fielded 4 Missions; Loan Inception Mission, Review Mission, Follow up meeting, Implementation Review Mission. Details of the ADB Missions are given in the following table. 2-1

**Table 2-1 : Details of ADB Missions**

S. No.	Nature of Mission	Duration	Name and Designation of Participants from ADB	Total Nos. of Participants from ADB
<b>2016</b>				
1	Loan Inception Mission	7 to 14 December 2017	Sameer A. Kamal, Urban Development Specialist, SEUW/SERD (Mission Leader); Januar Hakim, Senior Portfolio Management Specialist, CARM; Genevieve O'Farrell, Environment Specialist, CARM; Melody F. Ovenden, Social Development (Resettlement) Specialist, SEUW/SERD; Tadeo R. Culla, Associate Social Development Officer, SEUW; Ludovina R. Balicanot, Associate Project Officer, SEUW and Sophy Ea, National Social Safeguards Specialist, Consultant.	7
<b>2017</b>				
1	Review Mission	15 to 27 March 2017	Sameer A. Kamal, Urban Development Specialist, SEUW/SERD (Mission Leader). Jan Hansen, Senior Country Economist, CARM (wrap-up meeting)	2
2	Follow up meeting	15 June 2017	Sameer A. Kamal, Urban Development Specialist, SEUW/SERD (Mission Leader).	1
3	Implementation Review Mission	August 25-29, 2017	Sameer A. Kamal, Urban Development Specialist / Mission Leader, Urban Development and Water Division (SEUW); Melody Ovenden, Social Development Specialist (Resettlement), Lao PDR Resident Mission (LRM); Genevieve O'Farrell, Environment Specialist (Safeguards), Cambodia Resident Mission (CARM); Chansouk Insouvanh, Social Safeguards Consultant, Lao PDR Resident Mission (LRM); and Sophy Ea, Social Safeguards Consultant, Urban Development and Water Division (SEUW). Januar Hakim, Senior Portfolio Management Specialist, CARM joined selected discussions. Linda Adams, Senior Social Development Specialist, SEUW and Ludovina Balicanot, Associate Project Officer, SEUW provided remote support	8

## 2.4 Compliance with actions agreed during the Special Project Administration Mission

21. The recent Implementation Review Mission of ADB (25 to 29 August) and the EA have agreed to comply with the following key follow-up actions. The current status of the follow-up actions as agreed and included in the Missions' Aide-Memoire is given in the table below.

Table 2-2 : Follow-up Actions and the Status of their Compliance

#	Actions	Lead	Agreed Due Date	Status
<b>A. Overall actions and net steps</b>				
1	Submission of contract variation request for PIMS	PMU, PIMS	October 15, 2017	Delayed because of internal issues in the JV
2	Commence detailed measurement survey (DMS)	GDR	October 1, 2017.	DMS for the resettlement of AH along the embankment between the tourist port and the new port and relocation of stalls at the tourist port access is ongoing
3	Submission of Q3 quarterly report including appendices on (i) summary of loan covenants, (ii) summary safeguards updates, (iii) Gender Action Plan Progress, (iv) environmental monitoring report and (v) resettlement monitoring report	PMU with PIMS	30 October 2017	Was submitted with delay since it was necessary to include major issues that have come up in the preparation of detailed designs for the Kampong Chhnang Flood Embankment and the Pursat Drainage system
5	Social impact assessment and consultations commence	GDR with PIMS, PMU	As soon as possible	Affected waste picker households have been identified. Preparation of DRPs for landfills to be initiated
6	Operationalize the Grievance Redress Mechanism	GDR and PMU	As soon as possible	GDR has informed that the GDR mechanism for the Kampong Chhnang Flood Protection Embankment has been activated
7	Submission of revised IEE/EMP for ADB review - Pursat landfill - Kampong Chhnang landfill - Pursat River Embankment Protection - Pursat drainage - Kampong Chhnang embankment	PMU with PIMS	October 15, 2017 October 22, 2017 December 15, 2017 January 15, 2018 February 14, 2018	IEEs and EPs can only be updated after the completion of the detailed designs in December 2017 IEES and EMPs for the Pursat Drainage will be updated after the completion of the detailed design in February/March 2018 The IEE and EMP for the Kampong Chhnang flood protection embankment will be updated after the completion of the detailed design in March 2018 Improvement of the river embankment in Pursat has been cancelled as this will be done under EU financing

### 3 FINANCING AND FUND UTILIZATION

#### 3.1 Financing

The project was approved on 10 November 2015 and declared effective on 2 March 2016. Financing for the \$52.6 million project includes a SDR 26,4M (USD 37M equivalent) loan from ADB (Asian Development Fund) and \$10 million (\$5 million loan and \$5 million grant) from the Strategic Climate Fund

The following table 2-1 summarizes project financing by financier

**Table 2-3: Financing by financier**

<b>Financing</b>		
<b>Modality and Sources</b>	<b>Amount (\$ million)</b>	
<b>ADB</b>		37
Sovereign Project loan: Asian Development Fund		37
<b>Cofinancing</b>		10
Strategic Climate Fund - PPCR		5
Strategic Climate Fund		5
<b>Counterpart</b>		5.6
Government		5.4
Others		0.2
<b>Total</b>		<b>52.6</b>

Table 2-2 presents the project investment plan for the 4 components of the project.

**Table 2-4 : Project Investment Plan (\$ million)**

<b>Item</b>	<b>Amount</b>
<b>A. Base Cost a</b>	
1.Output 1: Kampong Chhnang Urban Area Improvements	22.9
2.Output 2: Pursat Urban Area Improvements	11.2
3.Output 3: Community Mobilization and Environmental Improvements	4.3
4.Output 4: Strengthened Sector Coordination and Operations	0.4
5.Output 5: Strengthened Capacity for Project Implementation, O&M	5.5
<b>Subtotal (A)</b>	<b>44.3</b>
<b>B. Contingencies</b>	<b>6.9</b>
<b>C. Financing Charges During Implementation</b>	<b>1.4</b>
<b>Total (A+B+C)</b>	<b>52.6</b>

ADB = Asian Development Bank, SCF = Strategic Climate Fund

Includes taxes and duties of \$4.55 million to be financed by the government through exemptions, ADB and ADB SCF grant.

In September 2015 prices.

Physical contingencies computed at 10% for civil works, equipment and consulting services. Price contingencies computed at 1.8% to 2.2% on foreign exchange costs and 3.5% on local currency costs; includes provision for potential exchange rate fluctuations under the assumption of a purchasing power parity exchange rate.

Includes interest estimated at \$1.40 million during implementation for the ADB loan and \$0.02 million in service charge for the ADB Strategic Climate Fund loan, which will both be capitalized as part of the loans.

Source: Asian Development Bank estimates

#### 3.2 Fund utilization

22. The following table 2.5 presents the consolidated status of loan and grant proceeds. The details of the fund utilization are presented in annex 2. The total amount of contracts awarded as a percentage of the total loan amount is 2.7%. The total disbursement as percentage of the total amount of contracts awarded is 26.5%.

**Table 2-5: Consolidated Status of Loan and Grant Proceeds****As of 31 Dec 2017**

Loan/Grant No.	US Dollars					
	Allocation	Contracts Awarded	Uncontracted Loan Balance	Contracts Disbursed	Undisbursed Loan Balance	Undisbursed Contract Balance
	A	B	C = A - B	D	E = A - D	F = B - D
Loan 3311	37,133,413	4,423,235	32,710,178	1,075,670	36,057,743	3,347,565
Loan 8295	5,000,000	-	5,000,000	-	5,000,000	-
Grant 0454	5,000,000	375,796	4,624,204	194,000	4,806,000	181,796
<b>Total</b>	<b>47,133,413</b>	<b>4,799,031</b>	<b>42,334,382</b>	<b>1,269,670</b>	<b>45,863,743</b>	<b>3,529,361</b>

The overall status of physical and financial progress of the project can be summarized as follows

Elapsed	25.58%
Physical	7.89%
CA - Lag	12.36%
Disbursement. - Lag	22.64%
Project - Lag	18.50%

Details of fund utilization and the Contract Award and Disbursement Projections are presented in Annex 3 and 4.

**Table 2-6: Consolidated Loan Utilization**

		As of 31 Dec 2017					
Cat. Ref.	Category Name	US Dollars					
		Allocation	Contracts Awarded	Uncontracted Loan Balance	Contracts Disbursed	Undisbursed Loan Balance	Undisbursed Contract Balance
		A	B	C = A - B	D	E = A - D	F = B - D
01A	CW - KC Flood Treatment	19,200,837	-	19,200,837	-	19,200,837	-
01B	CW - KC Solid Waste Mgt.	434,163	-	434,163	-	434,163	-
01C	CW - PS Drainage	604,727	-	604,727	-	604,727	-
01D	CW - PS Flood Protection	4,898,430	-	4,898,430	-	4,898,430	-
01E	CW - PS Solid Waste Mgt.	1,029,023	-	1,029,023	-	1,029,023	-
01F	CW - KC Small-scale Inf. Dev.	740,051	-	740,051	-	740,051	-
01G	CW - PS Small-scale Inf. Dev.	740,051	-	740,051	-	740,051	-
01A	CW - PS Drainage	2,460,000		2,460,000		2,460,000	-
01B	CW - KC Sanitation Improvement	510,000		510,000		510,000	-
01C	CW - PS Sanitation Improvement	510,000		510,000		510,000	-
02A	GD - KC Solid Waste Mgt.	737,231		737,231		737,231	-
02B	GD - PS Solid Waste Mgt	821,808		821,808		821,808	-
02C	GD - KC Embank. Manual Equipment	36,650		36,650		36,650	-
02D	GD - PS Flood Manual Equipment	36,650		36,650		36,650	-
02E	GD - PS Drainage Manual Equipment	36,650		36,650		36,650	-
03A	WS - Project Mgt & Implement Supp.	580,757	534,000	46,757	82,035	498,722	451,965
03B	WS - SSCD	9,867		9,867		9,867	-
02A	WS - NGO SCEI	200,000		200,000		200,000	-
02B	WS - CCAUD	10,000	10,000	-		10,000	10,000
04A	CS - SSCD	97,264	-	97,264	-	97,264	-
04B	CS - PMIS	3,407,553	3,577,913	(170,360)	536,381	2,871,172	3,041,532
04C	Survey and Investigation	67,010	85,000	(17,990)	12,621	54,389	72,379
03A	CS - CCAUD	200,000	200,000	-		200,000	200,000
03B	CS - NGO SCEI	810,000	-	810,000	-	810,000	-
03C	CS - Survey and Investigation	100,000	165,796	(65,796)	-	100,000	165,796
	Salary Supplement	-	-	-	-	-	-
05A	IA - Office and Travel Expense	401,742	40,369	361,373	48,337	353,405	(7,968)
05B	IA - Vehicles	152,239	134,500	17,739	134,500	17,739	-
05C	IA - Equipment	15,506	51,453	(35,947)	41,453	(25,947)	10,000
	Interest During Implementation	1,402,476	-	1,402,476	8,633	1,393,843	(8,633)
	Service During Implementation	18,000		18,000		18,000	-
	Unallocatd	6,887,237	-	6,887,237	-	6,887,237	-
99	Imprest Account	(22,509)	-	(22,509)	358,551	(381,060)	(358,551)
				-		-	-
	<b>Total</b>	<b>47,133,413</b>	<b>4,799,031</b>	<b>42,334,382</b>	<b>1,222,511</b>	<b>45,910,902</b>	<b>3,576,520</b>

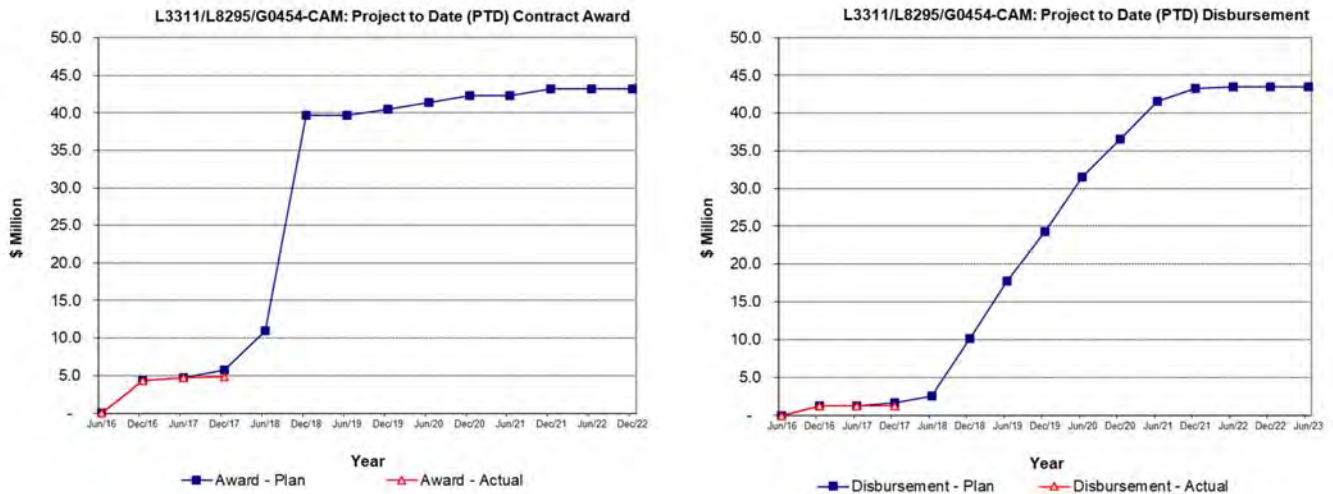
**Table 2-7: Grant Utilization**

As of 31 Dec 2017							
Cat. Ref.	Category Name	US Dollars					
		Allocation	Contracts Awarded	Uncontracted Loan Balance	Contracts Disbursed	Undisbursed Loan Balance	Undisbursed Contract Balance
		A	B	C = A - B	D	E = A - D	F = B - D
01A	CW - PS Drainage	2,460,000	-	2,460,000	-	2,460,000	-
01B	CW - KC Sanitation Improvement	510,000	-	510,000	-	510,000	-
01C	CW - PS Sanitation Improvement	510,000	-	510,000	-	510,000	-
02A	WS - NGO SCEI	200,000	-	200,000	-	200,000	-
02B	WS - CCAUD	10,000	10,000	-	-	10,000	10,000
03A	CS - CCAUD	200,000	200,000	-	47,159	152,841	152,841
03B	CS - NGO SCEI	810,000	-	810,000	-	810,000	-
03C	CS - Survey and Investigation	100,000	165,796	(65,796)	-	100,000	165,796
04	Unallocated	200,000	-	200,000	-	200,000	-
	Imprest Account	-	-	-	146,841	-	-
	<b>Total</b>	<b>5,000,000</b>	<b>375,796</b>	<b>4,624,204</b>	<b>194,000</b>	<b>4,952,841</b>	<b>328,637</b>

**3.3 S curves for contract awards and disbursements**

Based on the revised contract awards and disbursement schedule based on the updated work plan, the resulting s curves are presented in the following figures

**Figure 2-1: L3311/L8295/G0454-CAM: Project to Date (PTD) Contract Award and (PTD) Disbursement based on revised contract award and disbursement plans**



**3.4 Procurement Plan**

23. The following table presents the procurement plan as updated I September 2017. The table reflects the planning as presented in the revised implementation schedule presented in chapter 4 and Annex 1. The figures in red colour represent historic data of completed procurement

Table 2-8: Procurement Plan

#	Contract Packages	Proc. Method	Advert. Date	Award Date*
<b>Civil Works</b>				
G07	Supply of KC Solid Waste Management Equipment	NCB	Q3 2019	Q4 2019
G08	Supply of Pursat Solid Waste Management Equipmen	NCB	Q3 2019	Q4 2019
CW04	Construction of KC Embankment	ICB	Q2 2018	Q4 2018
CW05 (a)	Construction of Pursat Drainage (a)	ICB	Q2 2018	Q3 2018
CW05 (b)	Construction of Pursat Drainage (b)	ICB	Q4 2018	Q1 2019
CW06	Construction of Pursat Landfill Site	NCB	Q4 2017	Q2 2018
CW07	Construction of Pursat River Embankment Protection	NCB	Q1 2018	Q2 2018
CW08	Construction of KC Landfill Site	NCB	Q2 2018	Q3 2018
CW09	KC and Pursat Community-driven Env. Improvements	NCB	Q2 2018	Q4 2018
<b>Consulting Services</b>				
CS01	Project Management and Implementation Support	QCBS	Q4 2015	Q4 2016
CS02	Climate Change Adaptation in Urban Development	CQS		Q3 2017
CS03	Strengthening Sector Development	CQS	Pending	
CS04	NGO Support for Output 3 (CMEI)	QBS	Q1 2017	Q4 2017
<b>Goods and Works Under \$100K</b>				
G01	Supply of 5 units 4WD double cabin pick-up trucks	NCB	Q1 2017	Q2 2017
G02	Supply of 8 motorcycles	Shopping		Q2 2017
G03	Office furniture for PMU and PIUs (KC and Pursat)	Shopping		Q3 2017
G04	Office equipment for PMU and PIUs (KC and Pursat)	Shopping		Q3 2017
G05	Equipment for Pursat Drainage and Flood Protection	Shopping		Q1 2019
G06	Manual Equipment for KC Embankment	Shopping		Q1 2019
CW01	Office Repairs (PMU)	Shopping		Q2 2017
CW02	Office Repairs (PIU KC)	Shopping		Q2 2017
CW03	Office Repairs (PIU Pursat)	Shopping		Q2 2017

## 4 IMPLEMENTATION PROGRESS

### 4.1 Status of Project Implementation and Revised Project Implementation Schedule

24. The overall progress of project implementation is estimated to be 7.9 % against and elapsed time from the date of project effectiveness of 25.9 %. A revised implementation schedule has been prepared that will ensure the completion of all planned infrastructure and related support activities before the scheduled project completion date. At the end of the reporting period project implementation was approximately 1 week behind this revised schedule.

25. The summary of the revised implementation schedule is given in figure 4.1 and the detailed implementation schedule is presented in Annex 1.

Figure 4-1: Revised Implementation Schedule

PROJECT IMPLEMENTATION SCHEDULE AND PROGRESS -- Loan and/or Grant Number(s): L3311 / L8295 / G0454 - CAM																									
No.	Activities	2016			2017			2018			2019			2020			2021			2022			Prog (%)	Wt	Total
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1			
1	<b>Project Readiness/Preparation</b>																								
	- Loan Effectiveness																								
	- Recruitment of PMIS Consultants																								
	- Recruitment of PMU Staff																								
	- Recruitment of PIU Staff																								
2	<b>Output 1: Kampong Chhnang Urban Environmental Improvements</b>																								
	a. Flood Protection Embankment																								
	- Preparation/Approval Design, EMP, IEIA, RP																								
	- Bidding Process/Contract Award																								
	- Construction Embankment/Ancillary Works																								
	- Liability Period, O&M support																								
	b. Improved Solid Waste Management																								
	b1. Construction Sanitary Landfill																								
	- Preparation/Approval Design, EMP, IEIA, RP																								
	- Bidding Process/Contract Award																								
	- Construction Landfill & Ancillary Works																								
	- Liability period and support for SWM																								
	b2. Remediation/Closure existing dump sites																								
	b3. SWM Equipment Procurement																								
	- Procurement 1st Batch Equipment																								
	- Procurement 2nd Batch Equipment																								
3	<b>Output 2: Pursat Urban Environmental Improvements</b>																								
	a. Improvement Solid Waste Management																								
	a1. Construction Sanitary Landfill facility																								
	- Preparation/Approval Design, EMP, IEIA, RP																								
	- Bidding Process/Contract Award																								
	- Construction Embankment/Ancillary Works																								
	- Liability Period, Support for SWM																								
	a2. SWM Equipment Procurement																								
	- Procurement 1st Batch Equipment																								
	- Procurement 2nd Batch Equipment																								
	b. Improvement Drainage in Pursat Town, River Bank Erosion Protection and Waste Water Treatment																								
	b1. Improvement Drainage System and selective river bank erosion protection																								
	- Preparation/Approval Design, EMP, IEIA, RP																								
	- Bidding Process/Contract Award																								
	- Construction Drainage & Erosion Control/Ancillary Works																								
	- Liability Period, O&M support																								
	b2. Construction WWTP and Final Disposal of Storm Water and WWTP effluent																								
	- Preparation/Approval Design, EMP, IEIA, RP																								
	- Bidding Process/Contract Award																								
	- Construction WWTP, Effluent/Storm Water Disposal, Ancillary Works																								
	- Liability Period, O&M support																								
4	<b>Output 3: Community Mobilization and Environmental Improvements (CMEI)</b>																								
	- Recruit International NGO																								
	- Train village development committee units for project briefing and output training																								
	- Community awareness programs																								
	- Needs assessments for small-scale infrastructure works on CCA, sanitation																								
	- Planning, implementing, and supervising community improvements																								
	- Prepare report on community environmental improvements and lessons																								
	- Internal and external monitoring of safeguard documents																								
5	<b>Output 4: Strengthened sector coordination and operations</b>																								
	- Recruit and mobilize climate change resilience consultants																								
	- Prepare, approve, establish, and strengthen USU institutions																								
	- Review climate change and urban development documents, and sanitation standards in building codes																								
	- Implement TSUADF, revising building codes, developing the plan for CCA																								
	- Plan for climate change adaptation in urban areas is endorsed																								
6	<b>Output 5: Strengthened Capacity for Project Implementation, and Operations and Maintenance</b>																								
	- Overall project management and implementation support																								
	- NGO Support																								
	- Procurement transportation, equipment, Office Repairs PMU & PIUs																								
	- Recruit external resettlement monitor																								
	- Develop PPMS and capacity development plan																								
	<b>Total</b>																								

## 4.2 Kampong Chhnang Urban Environmental Improvements

### 4.2.1 Flood Protection Embankment

26. After having validated the design of the flood protection embankment as proposed under the PPTA two basic alternative options for the design of the flood embankment have been explored because of the high cost and limited economic benefits of the design proposed in the PPTA.

- Refocus the embankment from its conventional flood protection purpose to river/water front development with the main objective to enhance the commercial, tourist and recreational development of the waterfront area itself instead of focusing on the protection and drainage of the low lands behind the embankment. This proposal would fit in with in the 5-year plan of the provincial government to develop and beautify the riverfront.
- A shorter low cost version of the original embankment proposed in the PPTA that focusses on flood protection of small urban section of Kampong Chhnang that are located in areas below high flood level, mainly around the access to the tourist port. The savings of this low cost embankment would be applied to improvement of drainage in low lying areas behind the embankment and in general the overall drainage of the town area. Saving would also allow for the construction of a WWTP under the project. The layout maps for the low cost alignment and its variant are presented in Annex 7.

27. In subsequent discussions it was agreed that the latter would be the preferred option. The construction of this embankment would involve:

- From chainage 0+000 to 3+850 (starting at the southern end of the proposed embankment) the existing road embankment would be strengthened to protect the urban areas to the west of the embankment. The low lying agriculture area which was included in the original PPTA proposal would not be included in this protection because of high cost and limited benefits;
- From chainage 3+850 to 4+200 a new embankment section would be constructed to connect the road embankment with the existing embankment;
- From chainage 3+200 to 5+ 900 the existing embankment would be raised and strengthened;
- From chainage 5+ 900 to 7+500 a new embankment will be constructed on the flood plain area circumventing the densely populated section of the existing embankment;
- From chainage 7+500 to 7+875 this is the tourist port area at a level of around 11.60m. In this area the existing flood wall barrier will be improved and extended to connect with the new embankments
- From chainage 7+875 to 9+750 a new wide embankment will be constructed, the top of the embankment will be wide enough to permit future river front development.
- From chainage 9+750 to 10+000 the PA has constructed a new embankment with two concrete ferry ramps. The present level of this embankment is around 11.50 m and minor improvements will be made to bring this level up to the design level of 12 m.
- From 10+000 to 11+900 a temporary embankment is planned to protect the resettlement area located at levels between 9 and 10 m. This temporary embankment would be constructed at a design level of 11 m which corresponds to 24 year return period flood level (see below).

28. An alternative for the protection of the resettlement area and other developments planned on adjacent sites to this area, it could be considered to extend the flood embankment from chainage 10+450 with 5.8 km by strengthening existing road embankments. This would involve major strengthening of 3.1 km of road embankment and minor improvement of 2.7 km of road embankment. This extension would provide protection to an area of 582 ha. Including the resettlement area, any future expansion and any further future development planned by the PA

29. The preliminary cost for this low cost short alignment for a basic earthen embankment with slope protection of the sections along the river, and gravel paving of the embankment service road is estimated at USD 6M. Extending the protection of the embankment to the northern area beyond the present resettlement site would increase the cost by USD 1M, consider simple road embankment improvement and raising up to design level. The cost does not yet include the cost of an open drainage canal to convey drainage and storm water run-off from the northern Kampong Chhnang urban and peri-urban areas located above high flood level by gravity to the Tonle Sap river.

30. The topographical survey work of the flood embankment alignment will be completed by 25 January 2018 and during the next quarter the PMIS will finalizing the design of the flood protection embankment based on the low cost short alignment option.

31. Initial results of study commissioned by the Mekong River Commission on Modelling of Future Land-Use, Infrastructure & Flood Behaviour across the Cambodian Floodplain, Tonle Sap and The Mekong Delta of Cambodia and Vietnam confirmed that the design height of the embankment can be reduced from 13 m (height adopted by the PPTA) to 12 m. Peak Water levels from long time series simulation and the maximum from the 24 year series range from about 10 m to 10.50 m in Kampong Chhang and the peak water levels for the estimated 1:100 year event range between 10.60 and 11.80 for different development and land use scenarios. The full results of the study will be available in a first draft by February 2018.

#### 4.2.2 Kampong Chhnang Drainage and Drainage Master Plan

32. The cost savings under this the low cost short alignment option would allow for the improvement of drainage in the Kampong Chhnang urban area. It has been proposed that the PMIS will prepare a drainage master plan for the town. Master plan is a long term planning, generally for 20 years. It is also a comprehensive planning for service area as per likely spread of city in next 20 years. It describes all works required in next 20 years in phased manner. The designs and estimates are prepared approximately. It finalizes some of the main parameters so that advance action can be taken. Master plan for Drainage would include;

- Areal drone mapping of the urban areas (approximately 3000 ha.)
- DGPS spot level survey of the urban and peri-urban areas
- Comprehensive geo-referenced inventory of existing storm drain system
- Updating the Town Base Map to show locations of public storm drains and facilities
- Analyzing rainfall data collected over a period (as available at least 10 years), including development of intensity duration frequency (IDF) curves for different storm frequency periods
- Critical evaluation of the storm drainage and channel systems in order to identify existing and future deficiencies
- Preparation of a drainage simulation model for different development scenarios which may include combined storm water sewage systems and separated systems
- Evaluating deficiencies in the existing storm drainage maintenance program including recommendations for improvement of existing drainage infrastructure to meet future requirements
- Recommending appropriate O & M practices
- Approximate costs,
- Project feasible on social, environmental, financial, economical safeguards,
- Institutional review and arrangement of finances,
- Recommendations and prerequisites etc.

33. Service area shall be the likely urbanisable area in Planning Horizon Year. If master plan of city for next 20 years is available, then it may be reviewed and suitably city boundary in next 20 years can be adopted. If master plan is not available, then likely spread area is to be determined after taking necessary inputs of relevant agencies.

34. Based on the Master Plan a Detailed Preparation Report could be prepared for works identified as priority in Master Plan. DPR should also include implementation of short term measures proposed in Master Plan. The planning area generally coincides with municipal boundary. The design criteria given for master plan also applies for DPR. For DPR, engineering detailed survey of town & soil/site investigations are essential requirements. In DPR the design & estimates will be done much more precisely

#### 4.2.3 Construction of a new sanitary landfill site

40. Drone imagery, detailed topographic surveys and geotechnical investigation for the new sanitary landfill sites in Kampong Chhnang and Pursat have been completed during the previous quarter. The site selected for the Kampong Chhnang sanitary landfill did not pose significant engineering constraints apart from the encroachment into the area reserved for the landfill of spoil banks from a nearby quarry. The detailed design for the landfill site has been substantially completed. An input from the International SWM specialist is planned during the month of January/February next year to finalize the detailed design. The detailed design report detailed designs, construction drawings, BOQ and technical specifications will be completed during the next quarter.

### 4.3 Pursat Urban Environmental Improvements

#### 4.3.1 Pursat Town Drainage Improvement

35. Drone imagery and detailed topographical survey of the Pursat drainage area had been completed during the 3rd quarter of 2017. During this reporting period a detailed inventory of the existing drainage system was completed which included the collection of inverted pipe levels, details of the existing man holes and junction boxes, the condition of the pipelines and the maintenance of the system. This was a time consuming operation as for inspection, the concrete covers of each manhole and junction box had to be lifted with a small crane and after inspection replaced. The inspection revealed no major problems in the system but many minor problems regarding the levels of pipe lines and especially the level of deferred maintenance. At crucial locations, junction boxes and pipelines are blocked with sand, other debris and garbage. This seems to be one of the major causes of flooding in the town area during rain storms.

36. Based on the details collected during the inspection and inventory of the drainage system, a drainage simulation model has been set up. This model will be the basis for the detailed design of the required improvements and extensions of the system. The model will be fine-tuned during the next quarter to identify the most cost effective solution for improvement of the system. Based on model results the detailed design of the selected system improvement and extension options will be finalized.

#### 4.3.2 WWTP

37. It has been informed that the Municipality is in the process of replacing the present location of the WWTP with a new location on the right bank of the defunct irrigation canal about 4.16 km west of the present location (see layout map in annex 7.). The area of this new location is reported to be about 15 to 16 ha. Which would allow for the construction of a conventional lagoon based treatment plant. However, based on the SRTM 30 m DEM, the new area is located at about the same level as the original site. This implies that sewage cannot be conveyed from the town area to the new location by gravity and pumping would be required.

38. For detailed design of the WWTP on the new location and the conveyancer system of sewage/storm water runoff to this location supplementary survey will be required of the 15-16 ha plot designated for the construction of the treatment plant and of the alignment for conveyance of sewage/storm water from the town area to the new location. To be able to undertake such a survey under the PMIS contract a contract variation will be required to increase the provision of topographical survey cost under the provisional sum of the contract. Detailed design of the WWTP component can therefore only be completed during the 3rd quarter of 2018.

#### 4.3.3 Construction of a new sanitary landfill site

39. Drone imagery, detailed topographic surveys and geotechnical investigation for the new sanitary landfill site was completed during the last quarter. The area selected for the Pursat sanitary landfill and its access is flooded during the rainy season and will require costly filling to raise the ground level of the site above the level of flooding. An alternative site suggested by the local authorities is also partly flooded during the rainy season and would require considerable investment for creating year-round access. The detailed design for the originally selected site in Pursat has been substantially completed and will be finalized during the next quarter with the support of the international SWM specialist. The main complication in finalizing the detailed design is the requirement for 1 m high land filling to raise the ground level of the site above the rainy season flood level of the surrounding area. A borrow area for this land filling has still to be identified. The detailed design report detailed designs, construction drawings, BOQ and technical specifications will be completed during the next quarter.

#### 4.3.4 River Bank Protection for the Pursat River

Local authorities have informed that the proposed improvement of the Pursat river bank will now be undertaken with funding from the European Commission.

### 4.4 Tariff Structure Tariff Setting and Subsidy Methodology

40. Solid Waste Tariff Models are continuing to be developed for Pursat and Kampong Chhnang as statistical and financial information becomes available and the operational structure is developed. The projections in the Models cover the period 2019-2030 and provides for the following:

- Expenditure costings and income projections in Riel and US Dollar;
- Construction, operation and management of Landfills;
- Purchase of plant and equipment for landfill operation and solid waste collection services;
- Projected population increases and household numbers;
- Customer numbers in various categories (information still being provided)
- Staffing requirements - operational and management;
- Street sweeping expenses;

- Revenue collection efficiency;
- Waste collection efficiency
- Depreciation of assets
- Projected solid waste tariffs for the various categories (to be calculated when categories numbers are finalized);
- Estimated Profit and Loss Account.

It is important for the Municipalities to provide estimated customer numbers for the various tariff categories that they propose. Until this information is available the Tariff Models cannot be finalized.

#### 4.4.1 Solid Waste Collection and Transportation Contract – Pursat

41. An examination has been made of the Solid Waste Collection and Transportation Contract for Pursat. On 1 January 2008 the Sampeou Meas District, Pursat Province, signed a Contract with a Solid Waste Contractor to operate the service from 1 January 2008 until 31 December 2022.

42. On 26 December 2014 this Contract was transferred, with the Provincial Governor's approval, to another Contractor to operate the service from 1 January 2015 to 31 December 2022. The second Contractor was obligated under the Contract to provide the following:

- Two collection trucks;
- A garbage disposal area of 10,000 m<sup>2</sup> to dispose solid waste for 8 years until contract termination;
- Maintain access to the Landfill site at all times;
- Street and drainage cleaning services to designated roads and public parks;
- Suitable staff numbers to carry out the services and provide them with suitable clothing and safety equipment;
- Collect and retain solid waste fees, as determined (an existing fee schedule is detailed in the Contract).

43. However, the second Contractor has gone bankrupt and the existing service is now being carried out informally on a week to week basis by the Contractor who has an existing agreement to collect waste from the market. At a meeting with a Deputy Governor from the Municipality he was advised that if it is being considered to enter a new contract to collect, transport and treat solid waste in the Municipality it should only be on a short term basis until any new arrangements under the Project are finalized.

#### 4.4.2 Solid Waste Collection and Transportation License Agreement - Kampong Chhnang.

44. Up to the end of 2017 the Department of Environment (DOE) had an annual agreement with a Solid Waste Contractor for the collection and transportation of solid waste in Kampong Chhnang. The DOE has recently issued Sub-Decree No. 113 authorizing the Municipality to enter into a contract for the provision of future solid waste collection services. Contractual negotiations for 2018 are proceeding at present. Details of the Licence Agreement for 2017 and proposed new agreement for 2018 is to be provided by the Municipality. The annual Licence Agreement for 2016 provided that the Contractor shall:

- Pay a security deposit of 25% of Contract price;
- Collects and retains solid waste fees from customers;
- Exclusive rights for solid waste collection in the area;
- Clean designated public places;
- Collect and transport waste to a site designated by the Provincial Authority;
- Provide safe working conditions for staff.

#### 4.4.3 Future Solid Waste Management Arrangements.

45. With the construction of new landfills and the implementation of improved arrangements for the collection, transportation and treatment of solid waste in the Project towns existing contracts will need to be reviewed. This will be separately reported on under the Project whereby different management options for provision of the service will be examined.

**Table 4-1: Status of planned activities with milestones as presented in the PAM**

As Planned in the PBME	Present status
<b>1. Kampong Chhnang urban area environmental improvements</b>	
a) Conduct topographical and soil surveys (Q1, 2017)	Topographical surveys and geotechnical investigations completed for the new landfill site. The topographical survey work for the flood embankment

As Planned in the PBME	Present status
<p>b) Update feasibility study and appraisal report for ADB and government approval (Q1–Q3, 2017).</p> <p>c) Issue bids, evaluate bids, and submit to ADB for no objection (Q4, 2017–Q3, 2018).</p> <p>d) Transfer O&amp;M and tariff collection for SWM to USU (Q4, 2017–Q2, 2018)</p> <p>e) Award landfill civil works contract, procure landfill equipment and construct landfill (Q2, 2018–Q3, 2019)</p> <p>f) Transfer O&amp;M responsibilities for drainage and flood control systems to USU (Q3, 2018)</p> <p>g) Remediate old open dumpsites and construct controlled landfill (Q4, 2018–Q2, 2019)</p> <p>h) Award civil works contract and construct embankment (Q2, 2018–Q4, 2019)</p> <p>i) Dry season 1, Construct embankment segments A to C (Q1–Q3, 2019)</p> <p>j) Procure solid waste collection equipment (Q4, 2019)</p> <p>k) Hand over works of landfill site and defects liability period (Q4, 2019–Q4, 2020)</p> <p>l) Dry season 2, Construct embankment segments D to I (Q1–Q3, 2019 and Q1–Q3, 2020)</p> <p>m) Construct embankment segments I to M during higher lake levels (Q1, 2019–Q4, 2020)</p> <p>n) Road surfacing and supervision intermittent (Q1–Q2, 2020 and Q1–Q2, 2021)</p> <p>o) Handover embankment works and defects liability period (Q3,2021–Q3, 2022)</p> <p>p) Internal and external monitoring of safeguard documents (2017–2022, quarterly)</p>	<p>is ongoing and will be completed by the middle of January 2018 Detailed design is ongoing based on the revised proposals detailed in QPR 3 There is slippage in the design for the landfill which will now be completed by the end of February 2018 The design for the flood embankment will be completed by the end of March 2018 Delayed, USUs have not yet been established. Formation of USU was to be provided under a separate consultant package. Under this package no consultants could be engaged and a proposal to merge the TOR of this package with the PMIS TOR might not be possible</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>Detailed planning of construction works is yet to be prepared but overall target can be achieved See above</p> <p>Will depend on the progress in construction of the flood embankment Target can be achieved</p> <p>In QPRs and specials reports if required</p>
<b>2. Pursat urban area environmental improvements</b>	
<p>a) Conduct topographical and soil surveys (Q1, 2017)</p> <p>b) Update feasibility study and appraisal report for ADB and government approval (Q1–Q3, 2017)</p> <p>c) Transfer O&amp;M and tariff collection for SWM to USU (Q4, 2017–Q2, 2018)</p> <p>d) Issue bids, evaluate bids, and submit to ADB for no objection (Q4, 2017–Q2, 2018)</p> <p>e) Award contract for drainage and embankment works (Q3, 2018)</p> <p>f) Procure landfill equipment (Q2–Q3, 2018)</p> <p>g) Award contract for landfill construction (Q4, 2018)</p>	<p>Topographical Surveys and geotechnical investigations have been completed Detailed designs have been started On track</p> <p>Formation of USU was to be provided under a separate consultant package. Under this package no consultants could be engaged and a proposal to merge the TOR of this package with the PMIS TOR might not be possible</p> <p>Slippage, designs/cost estimates and tender documents will be completed by the end of March On track</p> <p>It is proposed to procure the equipment in two batches, 1<sup>st</sup> batch before completion of the landfill site and 2<sup>nd</sup> batch after one year of operation. Type and number of equipment will depend on operation modalities (force account of contract)</p> <p>On track</p>

As Planned in the PBME	Present status
<ul style="list-style-type: none"> <li>h) Remediate old open dumpsites and construct controlled landfill (Q4, 2018–Q3, 2019)</li> <li>i) Construction of riverbank protection (Q3, 2018–Q2, 2019)</li> <li>j) Transfer O&amp;M responsibilities for drainage and flood control systems to USU (Q3, 2018)</li> <li>k) Procure solid waste collection equipment (Q4, 2019)</li> <li>l) Hand over works for landfill and defects liability period (Q4, 2019–Q4, 2020)</li> <li>m) Construct drainage system starting at foot of system, construct pumping stations and WWTP with road rehabilitation as required (Q4, 2018–Q2, 2020) Update feasibility study b and appraisal report for ADB and government approval (Q1–Q3, 2017)</li> <li>n) Supervise start-up and commissioning of WWTP (Q3–Q4, 2020)</li> <li>o) Handover of drainage and embankment works and defects liability period (Q3, 2019–Q1, 2022)</li> <li>p) Internal and external monitoring of safeguard documents (2017–2022, quarterly)</li> <li>q) Internal and external monitoring of safeguard documents (2017–2022, quarterly)</li> </ul>	<p>Closure of existing landfill sites can only be done if ownership of these sites is transferred to the government</p> <p>Cancelled, as this will be done under EU financing</p> <p>Slippage likely as USUs have not yet be established</p> <p>See above at landfill equipment</p> <p>On track</p> <p>On track</p> <p>On track</p> <p>Improvement river embankment has been cancelled</p> <p>On track</p>
<b>3. Community mobilization and environmental improvements</b>	
<ul style="list-style-type: none"> <li>a) Recruit International NGO (Q2–Q4, 2016)</li> <li>b) Train village development committee units for project briefing and output training (Q2–Q3, 2017)</li> <li>c) Climate change adaptation and sanitation needs assessments (Q1–Q2, 2017)</li> <li>d) Undertake community awareness programs (Q3, 2017–Q3, 2018 and intermittent)</li> <li>e) Needs assessments for small-scale infrastructure works on climate change adaptation and sanitation (Q1–Q3, 2017)</li> <li>f) Assist in planning, implementing, and supervising community environmental improvements (Q3, 2017–Q4, 2021)</li> <li>g) Prepare report on community environmental improvements and lessons (Q4, 2021)</li> <li>h) Internal and external monitoring of safeguard documents (2017–2022, quarterly)</li> </ul>	<p>Contract with the NGO expected to be signed by the middle of January 2018</p> <p>Will now start after the mobilization of the NGO</p> <p>See above</p> <p>See above</p> <p>See above</p> <p>See above</p> <p>See above</p> <p>NGO will contribute to the safeguard monitoring, coordination between the NGO and the PIMS for safeguard monitoring will have to be developed.</p>
<b>4. Strengthened sector coordination and operations</b>	
<ul style="list-style-type: none"> <li>a) Recruit and mobilize climate change resilience consultants (Q3–Q4, 2016)</li> <li>b) Recruit and mobilize institutional development consultants (Q1–Q2, 2016)</li> <li>c) Prepare, approve, establish, and strengthen USU institutions (Q2, 2016–Q3, 2022)</li> <li>d) Review climate change and urban development documents, and sanitation standards in building codes (Q1, 2017)</li> <li>e) Implement TSUADF, including revising building codes and developing the plan for climate change adaptation in urban areas (Q2, 2017–Q1, 2019)</li> <li>f) Plan for climate change adaptation in urban areas is endorsed, including revised building codes in Tonle Sap provinces (Q4, 2018–Q1, 2019)</li> <li>g) National task force for urban development meetings (Q1, 2017–Q1, 2022)</li> </ul>	<p>Have been mobilized</p> <p>Could not be engaged, transfer of these responsibilities to PMIS is problematic</p> <p>Will depend on the resolution of the institutional development consultancy</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>No information</p>

As Planned in the PBME	Present status
<b>5. Strengthened capacity for project implementation, and O&amp;M</b>	
a) Appoint and update PMU and PIU members, including grievance focal points (Q1, 2016 and Q4, 2016)	Ongoing
b) Recruit and mobilize project management and implementation support consultants (Q4, 2015–Q4, 2016)	Completed
c) Recruit external resettlement monitor (Q3–Q4, 2016)	Not done
d) Develop project performance management system and capacity development plan (sex-disaggregated) (Q2, 2017)	To be initiated
e) Undertake training programs in project and financial management, procurement, safeguards, gender mainstreaming, and others (Q1, 2017–Q1, 2022)	To be initiated
f) Submit quarterly project progress reports (1 month after each quarter, starting in Q1, 2017)	Ongoing
g) Prepare annual PPME reports (31 January, 1 month after close of calendar year)	Included in this quarterly report as only preparatory activities are ongoing
h) Submit Government completion and post-evaluation reports on resettlement activities (Q2, 2019 and Q1, 2020)	No yet Due
i) Submit government project completion report and resettlement report (Q3, 2022)	Not yet due

46. Based on an updated implementation schedule presented in the inception report with the estimated duration of each of the major activities for project Implementation the following break downs of activities have been proposed in the inception report. This breakdown is based on the continuity of services of the PIMS and the availability of international and national specialists as offered in the consultant's proposal.

## 5 PROJECT MANAGEMENT ARRANGEMENTS

47. MPWT is the executing agency (EA). The implementing agencies (IAs) are the Provincial Department of Public Works and Transport (PDPWT) and Municipal Governments in Kampong Chhnang and Pursat. A Project Steering Committee (PSC) has been established by MPWT although there is no report available on any meeting of the PSC. The PSC is responsible for: (i) overseeing implementation in conformity with the Project's development objectives and scope; (ii) assisting in coordination among government agencies involved in Project implementation and policy reforms (in consultation with the PCU in Phnom Penh); (iii) ensuring coordinated and efficient implementation of Project activities; (iv) monitoring the progress of achieving all outputs, in particular, measuring the development impact and outcome envisaged under the Project; and (v) provide guidance and direction towards the accomplishment of the Project's impact and outputs. The PSC is chaired by MPWT and members include representatives from Ministry of Economy and Finance (MEF), Tonle Sap Authority (TSA), MPWT, and Ministry of Land Management Urban Planning and Construction (MLMUPC).

48. A Provincial Coordinating Committee (PCC) has been established in each town to oversee the work of the PIUs. The PCC includes Provincial Governor (chair), deputy governors or municipality governors (deputy chair), select members of the provincial technical coordinating committee, and PMU project director (members), PIU manager (secretariat). There will be at least one woman in each committee.

49. A project management unit (PMU) has been established with full time staff from MPWT. The PMU includes a Project Director, Project Manager, two Supervisory Engineers, Social and Resettlement Officer, Environment Officer, Office Manager, Procurement Officer, Accounting Officer, Assistant Accountant and Secretary/Office Assistant. It is aimed that at least 30% of the PMU staff are women. This target has not yet been achieved.

50. The project management and implementation support (PMIS) consultants is based in Phnom Penh and works directly with the PMU. The consultant team leader and PMU Procurement Officer will verify all procurement and consulting service documents.

51. The PMU is responsible for coordinating detailed preparation and implementation of project activities. More specifically it is (i) promoting the Project to the targeted beneficiaries; (ii) assisting in subproject development and implementation; (iii) evaluating the technical, financial and economic, social, and environmental viability of proposed subprojects; (iv) undertaking Project supervision and monitoring; (v) establishing and implementing the Project Performance Management System (PPMS); (vi) preparing community action plans, bidding arrangements, and bid documents; (vii) evaluating bids; (viii) awarding and supervising construction contracts; (ix) exercising quality control; and (xi) recruiting, managing and supervising project consultants. The PMU reports directly to the General Department of Public Works (GDPW) regarding project-related matters.

52. Project Implementation Units (PIUs) will be set up in Kampong Chhnang and Pursat. The PIU's will be staffed jointly by the Municipal government. Table 4 below shows the agreed

### 5.1 Project Implementation and Management Support (PMIS) Consultant

53. The contract with the PMIS consultants, Korea Engineering Consultants Corp. (KECC) in joint venture with NIRAS A/Sand in association with Key Consultants (Cambodia) Ltd., was signed on 20 October 2016. A contract variation, to remove the procurement and financial management support from the consultancy is pending (as this expertise is now covered by the contractual staff recruited to the PMU). The PMU will submit this contract variation once the bids for the topographic surveys and geotechnical estimates are received and finalized.

#### 5.1.1 Utilization Consultants' Inputs

54. Up to the end of this reporting period, 30 September 2017, the total person months used by the International Specialists is 14.8 person-month out of a total provision of 78 person-month, leaving a balance of 63,2 person-month., the total person months used by the National Specialists is 44 person-month out of a total provision of 428 person-month, leaving a balance of 384 person-month (for details see Annex 4.).

#### 5.1.2 Required Contract Variation

55. A second contract variation will be required to formalize and/or include the following changes in the agreed consultant services and inputs under the contract.

- to remove the procurement and financial management support from the consultancy (as this expertise is now covered by the contractual staff recruited to the PMU). This would create a balance of 84 unused person-month. It is proposed to use this balance for the short term input of additional national specialists and allocate the remaining balance to a provision for unallocated person-month
- to replace the proposed specialists for 3 international positions, and 2 national positions

International Specialists			
International Team leader/Municipal Engineer	Mr. Christopher Konecki	replaced by	Mr Louis Rijk
River Engineering Specialist	Mr. Ricky Kwan	replaced by	Mr. Prashant Malla
Environment Specialist	Mr. Cliff Massey	replaced by	Ms. Rachel Wildblood
Social Development and Resettlement Specialist	Mr. Paul van Strijp	replaced by	Mr. Teemu Jantunen
National Specialists			
Mr. Ty Sopheak,	Geotechnical Engineer	replaced by	Mr. Chea Ketia
Mr. Phung Katry	Civil Engineer -River Hydrology	replaced by	Mr. Mam Sanoun

- to consolidate the 4 positions for national specialists to assure continuity in their services

Original			Consolidated		
Position	Name	P/M	Position	Name	P/M
DTL/Civil Engineer-1	Phai Sokheng,	33	Merged with DTL/Civil Engineer-1		2
DTL/Civil Engineer-2	Srey Socheat,	33	DTL/Civil Engineer-2	Srey Socheat,	64
Senior Civil Engineer-1	Som Kosal	12	Merged with Senior Civil Engineer-2		0
Senior Civil Engineer-2	Sim Sen,	12	Senior Civil Engineer-2	Sim Sen,	34
Resident Engineer-1 (Pursat)	Chhoeum Ravann	12	Resident Engineer Kampong Chhnang and Pursat	Chhoeum Ravann or Ro Rosbunnat	0
Resident Engineer-2 (Kampong chhnang)	Ro Rosbunnat,	12	Merged with Resident Engineer-1		
Site Engineer-1	Chhor Ratha	20	Site Engineer Kampong Chhnang	Ro Rosbunnat or Chhor Ratha	34
Site Engineer-2	Ro Rosbunnat	20	Merged with Site Engineer-3		0
Site Engineer-3	Pong Veasna	20	Site Engineer Pursat	Vuth Ratha or Pong Veasna	34
Site Engineer-4	Vuth Ratha	20	Merged with Site Engineer-3		0
Resettlement Specialist-1	Chap Samoeun,	6	Resettlement Specialist Kampong Chhnang and Pursat	Chap Samoeun,	24
Resettlement Specialist-2	Mel Sophanna,	18	Merged with Resettlement Specialist-1		0

- to include a provision for home office input for the international specialists. It is proposed to include a total home office input for international specialists of 7.5 person-month. This would reduce the field input to 70.5 person-month.
- to merge the CS03 TOR with the TOR of the PMIS consultant services with would require an increase of 3.5 person-month for international specialists and the addition of a position for a national legal specialist with an input of 3 person-month. For the legal expert the input would be divided into an input of two months for the CS03 ToR and 1 month input to investigate the legal aspects of the closure of existing dumpsites operated by the previous and present SWM contractors in Pursat and Kampong Chhnang and located on private property. This would be subject to an administrative agreement within the JV for the PMIS consultant services
- to increase the allocation for topographical survey works under the provisional sum for supplementary survey works for the detailed design of the Kampong Chhnang flood embankment, Pursat drainage and the preparation of a drainage master plan for Kampong Chhnang. The additional topographic survey work would include.
  - Detailed survey of the of the proposed new location for the Pursat WWTP (15-16 ha.)

- Detailed cross section survey for the sewage transmission line from Pursat town to the new WWTP location (4.16 km)
- Supplementary survey for the detailed design of hydraulic structures in the Kampong Chhnang Flood embankment (sites for drainage turn out structures in the flood embankment, sites for pumping stations etc.
- Preparation of drone imagery of the Kampong Chhnang urban area and a DGPS spot level survey of the urban and peri-urban areas for the preparation of a drainage master plan.
- To include a position for an international drainage/waste water treatment specialist to support the detailed design of the Pursat WWTP and the preparation of the Kampong Chhnang drainage master plan including the identification and detailed design of selected priority measures.
- Include short term input provisions for national specialists in structural, electrical and mechanical design to support detailed design of specific infrastructure components (bridge, large culverts, pumping stations, structural and electro-mechanical details of WWTPs etc.)
- Increase the budget allocation for equipment for the PMIS. It is proposed to include:
  - procurement of a video projector, which was included in the originally proposed equipment list but could not be procured because of lack of funds and;
  - to include a provision for the procurement of DGPS equipment and a drone including image processing software which would permit the PMIS to undertake, directly, supplementary image collection and survey work including level control for construction quality monitoring, without the need for subcontracting these services.

## 6 SAFEGUARDS

### 6.1 Environment

#### 6.1.1 Legislation & Policy context.

56. Confirmation with MoE on the 2016 guidance requirements. The team has confirmed to what extent the requirements are a practical guide, to be used with mitigation measures, or if they are to be followed directly. The key risk from an environmental perspective is the flooded nature of the sites and therefore the extent to which leachate can be managed without being pumped to higher ground for example and to ensure it does not come into contact with the water table.

#### 6.1.2 Domestic EIA Approval.

57. The Project Team has prepared a TOR for engaging a national registered firm for the preparation of the required IEIAs and MoE approval. These ToR require further review by the international environment specialists as they do not fully reflect the agreements reached with the MOE on requirements for preparation of the IEIAs

Discussions on the leachate issue have been initiated with ADB funded projects in the GMS areas in sensitive environments.

#### 6.1.3 Design for Landfills.

58. Total average rainfall in Kampong Chhnang is 1569 mm per year and evaporation is in same level (1650 mm/a mm/a). According of Feasibility study and EEI leachate water treatment is really not needed but because of environmental safety leachate water circulation pumping station with pressure pipe to the waste hill shall be constructed. Also leachate water ponds can be constructed at next phase of landfill construction if needed. Main idea of leachate water management is minimization of leachate water

59. After geotechnical and hydrological studies is clear that groundwater is not too far from the ground level and proper geological barrier shall be needed. Geological barrier shall be constructed; thickness minimum 600 mm and permeability shall be  $K \leq 1,0 \times 10^{-9}$  m/s. because there is insufficient highly plastic clay that could be reworked to form an impervious cell lining, it has been agreed to use an asphalt concrete lines. Asphalt concrete is an excellent waterproofing material and well established in hydraulic engineering for many decades. It is also easy to construct very durable and fire resistant. This is important as initially the filling of the cells will be slow and large sections of the bottom liner will remain exposed

60. The existing dump sites in both provinces to be closed by this project are on private land, operated by private companies. This is likely to mean that the opportunity to close these sites in an environmentally beneficial way cannot be realized through this project.

#### 6.1.4 Embankment design for Kampong Chhnang.

61. Drainage of the low lying areas behind the embankment will have to be critically reviewed. As these areas are presently only used for dry season agriculture, draining these areas by pumping to allow agriculture production is some sections during the rainy season will not be financially viable. As dry season agriculture relies on residual moisture, lowering water levels during the rainy season may reduce the build-up of residual moisture and have a negative impact on dry season agriculture

#### 6.1.5 Complete IEE / EMP review.

62. The review of gaps within the IEE and EMP will completed towards the end of the detailed design of the proposed infrastructure. This will then allow the EMPs to be finalized. It is proposed that instead of updating both the IEE and EMP documents as submitted during the PPTA, the team will concentrate on the EMP for each sub-project, and ensure that it includes:

- An outline of the sub-project based on detailed design and final site choice
- Updates to legislation since the PPTA if appropriate
- Environmental Receptors
- Updated table of mitigation measures and costs
- Implementation arrangements as per PPTA unless updates are required.

63. By focusing on the EMP, which is the most critical document to guide the construction process and to be included in the procurement process, the team will ensure effective use of time. However, IEE document completed at the PPTA stage, with exception for the new landfill construction, will require significant updates because of the proposed significant design changes i.

64. Climate change risks will be integrated into the design. The environmental team, in collaboration with the climate change specialist, will ensure that the risks are included in mitigation measures where appropriate, or into the design.

## 6.2 Resettlement

### 6.2.1 Progress in resettlement

65. Ministry of Economy and Finance (MEF) General Department of Resettlement (RD-MEF) has instructed the public consultation, data collection and Detailed Measurement Surveys (DMS)/Socio-Economic Survey (SES) works done by Provincial Resettlement Sub-Committees Working Groups (PRSC-WG). The activities started in November 2017, and are currently on-going. DMS and SES will cover 100% of the affected households (AHs) to provide accurate and comprehensive data, which also will be gender disaggregated. Grievance Redress Mechanism (GRM) is now in place in Kampong Chhnang and being established in Pursat. Cooperation and communication between RD-MEF, PMU, PRSC-WG and PMIS has improved, and demonstrated by several joint meetings on key issues.

66. In the Quarter 4 / 2017 the PMIS resettlement team completed a review of project documentation, legal situation, GAP, social development and livelihood options. The team met with key stakeholders (PMU, GDR/MEF, ADB and MOE) and undertook several field visits to sites in Kampong Chhnang and Pursat. The team also prepared questionnaires for upcoming public consultations and database of AHs for internal monitoring, initial LIRP structure and reviewed compliance of projects with ADB SPS, especially Kampong Chhnang embankment. The team has also supported both RD-MEF and PRSC-WG in all the activities.

67. In order to facilitate delays in DEDs and implementation of the construction projects with approved designs the PMIS recommends to separate each sub-project into its own uRP's as: (i) Kampong Chhnang embankment; (ii) Kampong Chhnang landfill; (iii) Pursat drainage; and (iv) Pursat landfill sub-projects.

68. RD-MEF will still need to update and dissemination the Public Information Booklets (PIB) to all the affected households (AH) as well as complete recruitment of the External Monitoring Organisation (EMO) and consultant for the Replacement Cost Survey (RCS).

69. It is expected that the resettlement budget will considerably increase from the ones estimated in the PPTA resettlement reports (for Kampong Chhnang PPTA figure is 203,618.84 USD and for Pursat 53,774.69 USD). This is mainly due to the PPTA underestimating the extent of land acquisition and resettlement (LAR), especially with Kampong Chhnang embankment, due to the alignment and design features. Secondly, PPTA was done prior to the new MOE guidelines (2016) on landfill site selection, which set a 350m zone around landfill sites where housing should not be allowed. Depending on how many AHs prefer relocation over local mitigation measures the resettlement budget will significantly increase also for both of the landfills sub-projects.

### 6.2.2 Resettlement in Pursat

#### **Drainage**

70. The main concern for resettlement and social development is in northwest corner of the sub-project, in Sangkat Phteah Prey, where drainage is to link to the existing irrigation canal. There are households located on both sides of the irrigation canal (Kbal Hong Canal), which is planned in the PPTA to be used for drainage and waste water outflow. The houses are built on the canal embankment, wholly or partially overhanging on top of the canal. In the PPTA plan a parallel drainage line to the irrigation canal is to be built, which can directly impact 42 AHs. LAR impact would also affect trees, structures, businesses and livelihoods. ROW for the irrigation canal according to the Provincial Authorities is 30m. None of these potential AHs have been consulted regarding the project.

71. Without the new parallel drainage line to the irrigation canal, and if the irrigation canal itself is not rehabilitated, the impact can be limited to only point-impact for outflow pipe connection to the irrigation canal. In this case LAR impact would be only on some structures, as it is assumed the houses in this location on the canal ROW are part of an informal settlement. If there is a need to rehabilitate the actual canal for active use, the LAR impact would be very high. Estimate based on satellite imagery interpretation is that between 90-140 AHs would be affected if the entire canal were to be rehabilitated from the Pursat River to the edge of the drainage system at the unused wastewater treatment plant. None of these potential AHs have been consulted regarding the project.

72. Part of the social and health development aspect of the drainage sub-project impact is the custom of households in the town to link household sewage overflow into the drainage network. Without appropriate treatment, and possibility of severe overflow during heavy rainfall events, this would have considerable impact on water quality and health of AHs along the irrigation canal. The irrigation canal water is being used by villagers on the northern side of the rice fields from the site. The irrigation canal water is used for all household activities like washing and bathing, in addition for being water source for irrigation and fishing. These villages do not have alternative water sources except for rainwater harvesting for drinking water. These villages have approximately 100 families. Pursat Provincial Authorities were clear that they need a lagoon based wastewater treatment plant instead of septic treatment plant, as it is difficult to build septic tanks in urban areas.

73. In Pursat town area key locations with need for improved drainage are around the market, while one traversing drainage line which has collapsed. These areas experience heavy flooding during rainfall events. The

market area has several dozen affected street sellers, but the Provincial Authorities have agreed to organize a location for market vendors to continue selling during the construction period, if affected. However, the alternative site should be equipped with running water for washing facilities, separate toilets for women and men, and effective solid waste collection.

74. Other businesses, land use and secondary structures will also experience potential impact due to the project. However, this impact on e.g. shop eaves and shop operations along the drainage lines is not clear yet, but can be minimized by ensuring the construction company will notify the AHs well in advance and ensure access to houses and businesses during construction.

75. Public consultations have started already with Sangkat office organizing events for the general public once or twice a month discussing all development projects in Pursat town. Drainage project has been highlighted in these meetings, but appropriate consultation with PMU / PIU detailing entitlements, GRM and other important aspects has not been done yet.

### **Landfill**

76. The landfill site is situated on public land, but there are several permanent households close-by. Depending on the size and shape of the planned landfill these households fall within 350 m of the landfill borders set at MOE guidelines for landfill site selection. This triggers the need for LAR or mitigation measures for any affected households. The access road is currently 4m wide, planned to be widened to 8m. This will have immediate LAR impact on both sides of the road on actively farmed land plots, some fruit and other trees, electricity line, and private property like fences. Screening of living conditions of AHs around the landfill site in Pursat within 350 m from the boundary of the landfill site as per Ministry of Environment recommendations has started while the identification of AHs along the access roads requiring widening has been completed. Public consultations with the AHs along the access road are beginning.

77. There are 13 AHs involved in waste picking, however, the number of waste pickers is depending on the day and time of the day, in what appears to be part-time employment for some of the waste pickers. A list of all AHs involved has been compiled by the Provincial Authorities, but the identification of vulnerable AHs is still ongoing. Some of the waste pickers are entirely dependent on the waste picking as primary income source, and due to their family situation do not have alternatives or options for change of livelihoods via vocational training. These AHs live in village of Sres Srang, right next to the existing landfill site. Consultations with the waste picker AHs, especially vulnerable ones, is essential to develop a suitable compensation plan and LIRP. No consultations by PIU has taken place yet with either waste pickers or AHs along the access road or landfill site.

78. Waste collection is done by private company, but the current contract has not been finalized with the new company. The new contract could be as long as 15 years. The current rates for MSW collection is 5000-7000 riel / HH / m and 20-30 USD/m for hotels, restaurants and businesses. Price increase with the new waste collecting company and a more distant landfill site is possible. Landfill management arrangement has not been decided yet.

### **Follow up steps in Pursat**

- Organise public consultations and SES data collection for Pursat drainage sub-project with: a) AHs residing along the Kbal Hong Canal; b) farmers and villagers using water from the Kbal Hong Canal; and c) street sellers around the Pursat market.
- Organise public consultations and SES data collection with waste pickers at times when waste trucks are not arriving to the site, preferably in the early mornings, and separate consultations, DMS and SES with AHs living within 350 m of the landfill site. Provide mitigation measures to people living within 350 m. Prepare updated resettlement plan for the landfill site.
- Prepare LIRP, which includes vocational training and alternative livelihood options such as small vegetable gardens (provide seeds and training) and chicken raising (provide chickens, livestock training, as well as chicken flu awareness). Provide necessary tools, equipment and initial stock for AHs completing vocational training courses to start associated businesses.

#### **6.2.3 Resettlement in Kampong Chhnang**

##### **Flood embankment**

79. Kampong Chhnang flood embankment project is currently in non-compliance with ADB SPS (2009) due to resettlement activities started by the Provincial Authorities prior to the approval of the updated Resettlement Plan (RP). Corrective action is being implemented to reach full compliance, which started in the beginning of October 2017. The embankment alignment and detailed engineering design (DED) has not been completed and approved, but it is obvious that the original PPTA design would cause severe and adverse resettlement and social impacts. Pending on the approval of the improved alternative alignment, DED and public consultations with affected households (AHs) the extent of LAR can be established, appropriate mitigation and compensation measures designed, and resettlement plan updated.

80. According to the Provincial Authorities the right-of-way (ROW) for the current embankment is 50m, meaning land acquisition will be limited along this line, but structures and livelihoods are required to be compensated for. All the low-lying areas surrounding the river system are situated below the height level of the National Road 5 (NR5), causing them to fall under category of Zone 2 of Tonle Sap Biosphere Reserve (TSBR) jurisdiction (see map below). Within TSBR only agricultural activities are allowed, but change of land use is allowed by permission from the Royal Government of Cambodia (RGC).

#### 6.2.4 A. Northern section (Chong Koh Village)

81. The Provincial Authorities have already started in March 2017 the relocation process of the affected households (AHs) located in Chong Koh Village on the northern/eastern side of the dry-season road along the Tonle Sap natural river embankment (embankment project location between 11+000 and 13+000). The exact number of AHs has now been confirmed by the Provincial Authorities during the on-going DMS, which started immediately after the floods receded. Relocation and self-relocation has been halted to wait for conclusions from the project compliance review based on ADB SPS (2009).

82. As of beginning of November 2017, 157 AHs out of 210 AHs have agreed to move to the resettlement site, out of which 45 AHs have already relocated. Each AH will receive a 5m x 20m plot of land as part of the contract between AHs and the company developing the resettlement site, but need to pay within two years 1,000 USD for the cost of backfilling the land. After completion of the payment, they will receive land titles. The AHs relocated already have dismantled their old houses on the river bank. 90 AH of these have been identified and re-contacted for verification purposes by the PRSC/RD-MEF. 157 AHs have already paid for the cost of backfilling (1,000 USD), and hence can obtain official land titles (hard titles) for the land plots immediately. There are at least 10 vulnerable (poor) AHs who have all agreed to relocate, but cannot pay for the 1,000 USD cost of backfilling, making them highly vulnerable.

83. 47 out of 210 AHs have agreed and already received funds from the Provincial Authorities for self-relocation. Each AH received between 400 and 1,000 USD / AH as lump sum. 4 AHs have not been paid yet though. All 47 AHs have been identified and contacted for verification and contact details by PRSC/RD-MEF. It appears that most of the self-relocating HH still remain in the area as the peak season for fishing started in the beginning of October.

84. A final 6 out of 210 AHs have refused both options, either to move to resettlement site or self-relocate, as provided by the Province. Refusal is apparently mainly due to AHs requiring a higher price for relocation.

85. Majority of the households in this section of the embankment are Cham Muslim, with their main livelihoods in fishing.

**Table 6-1: : Identified 210 Affected households for relocation (to be updated by GDR/MEF)**

Relocation option	AH	AP	Re-contacted by Province	Relocated
Relocate to resettlement site	157	TBC	157	45
Self-relocate	47	TBC	47	47
Not-agreed	6	TBC	6	0
<b>Total</b>	<b>210</b>	<b>TBC</b>	<b>210</b>	<b>82</b>

86. The houses in Chong Koh Village on the southwest side of the dry season access road are currently not to be relocated by the Provincial Authorities, and as such not recognized as AHs of the project. However, these HH are likely going to be severely affected by the flood embankment to be constructed between their houses and the river. First of all, this is likely to cause considerable flooding from rainfall from the sub-catchment draining through the area. The flooding is most likely exacerbated by the current JICA funded drainage project which will direct the storm water to the same area, as well as sewage. Drainage storm water will also have considerable amount of plastics and other solid wastes. It is expected that the lower lying areas where the households are located will be semi-permanently water logged, with no realistic options pumping or draining the water out during flooding season to the Tonle Sap River. Secondly, the embankment can permanently cut-off these HHs access to the river and key livelihood for many of them.

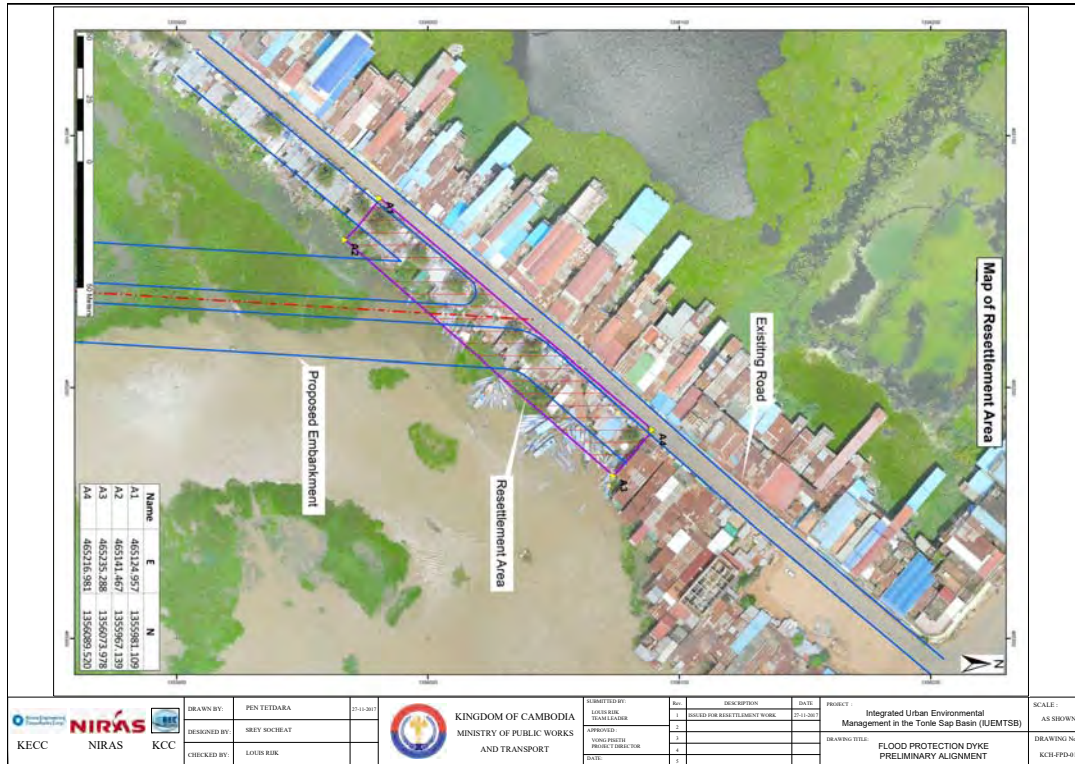
87. Based on remote sensing imagery calculation of rooftops there are anything between 100-160 AHs in the south-western side of the dry-season access road. It appears majority of the HHs are Cham Muslim. However, they have not been consulted about the project as of yet. Given the distance from the dry-season river bank these HHs are eligible for land titles (more than 50m from the dry season river edge), and have subsequently constructed higher quality and category of housing. The area also has large CPP party office and two mosques. The extent on the impact on the HHs will be depending on the detailed engineering design solutions, e.g. re-directing the natural stream and drainage storm water out of the area to be protected from river flooding by the embankment.

6.2.5 Tourist port section

88. In order to minimize the LAR impact of the project an alignment design change was agreed by PMU where the flood embankment cuts off and joins the road to the tourist port. The new alignment does not impact the 52 AHs living right next to the tourist port (see map below), except for 51 AHs (stall owners) located further west from the 52 AHs at the point of connection of the embankment to the existing road.

89. West of the tourist port there is an access road and causeway leading to the island/peninsula with Kandal Village. It is important that this is not interrupted with the embankment construction, and ideal design is to provide all-season access road to the village while maintaining adequate water flow capacity through the channel

**Figure 6-1: Map of the new design for tourist port area embankment**

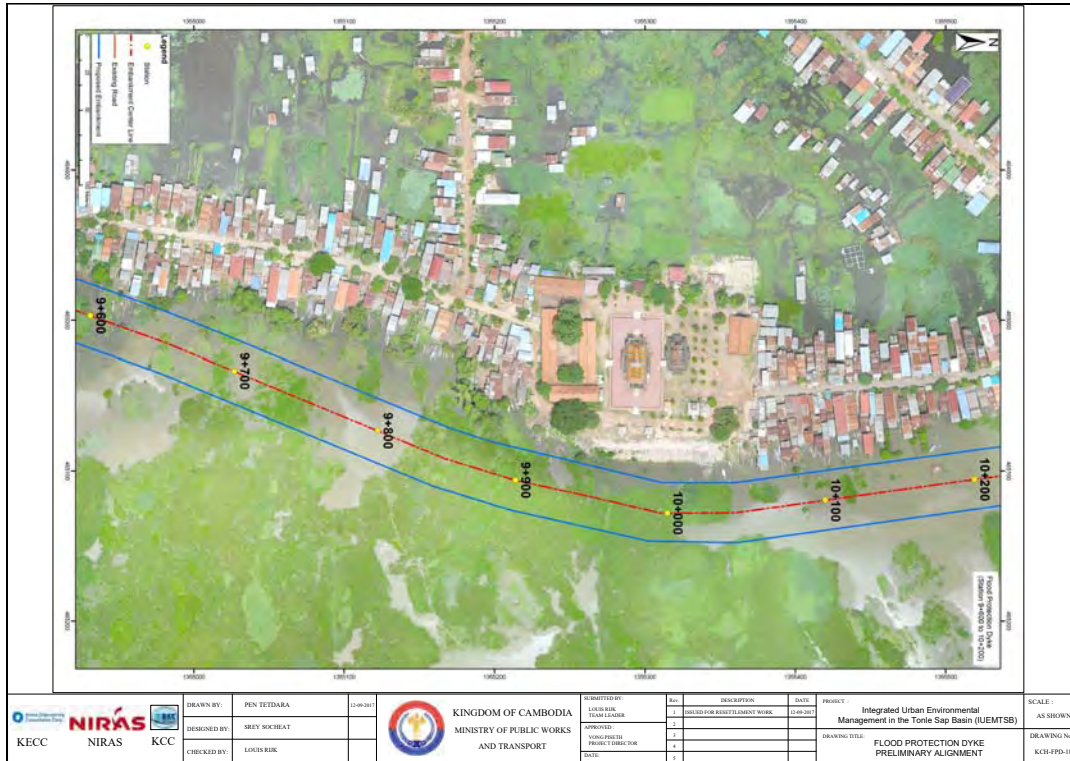


6.2.6 Samraong Village riverside settlement section

1. Between embankment locations 9+250 to 10+750, in Samraong Village, the embankment will be constructed on the wetland in front of all the houses on the existing embankment to avoid LAR. However, all of the houses have been constructed overhanging the embankment with supporting stilts. During construction, and subsequent backfilling of the gap between the embankments with sand to avoid creation of area of standing waste water, there is a high risk of collapse of these houses, especially the ones with wooden stilts. Therefore, if the embankment is constructed with the planned alignment there is a need to mitigate the impact of construction and reinforce the support structures of the houses with concrete pillars, as well as backfill the gap between the embankments. It is also important for maintaining access for the AHs to their fishing boats along the river with construction of walkways along the embankment.

2. Majority of the AHs are Khmer. They have not been consulted by the Provincial Authorities regarding the project as of yet. During the dry season the wetland is used for small scale agriculture, such as home gardens, and during rainy season for fishing using traditional arrow-head fish traps. Both will be affected by the construction of embankment, and the loss of livelihoods is required to be compensated.

Figure 6-2: Map of affected area and houses for access and foundation structures



6.2.7 Resettlement site (Village # 6, Sangkat Khsam)

3. Resettlement site is located northwest of 13+000 position of the embankment aside a public-private investment for a market place and residential area mainly intended for resettled AHs. The total area of the site is 17.5 ha, out of which 5 ha is reserved for the market area and public infrastructure. The area has plots to house 525 AHs. The sub-decree for establishment of the site was signed on March 27, 2016. However, no EIA or IEE was completed. The site has been given as a concession to a private company (Ly Leang Kim LKL Construction) to develop. The plots on the land are also for sale, in addition to the use as a resettlement site.
4. The site construction started in 2016 and has now been completed, except for areas where the backfilling was not done high enough and are water logged during the rainy season. The plan for the development of this area was made prior to the ADB embankment project implementation started in 2017. Borrow area for the backfilling is located less than two km west of the resettlement site, and is also located on Zone 2 of TSBR. Government permission was granted to turn the agricultural area into commercial fish ponds. There are no resettlement issues at borrow sites as they are all located on private land.
5. The resettlement site is going to be equipped with roads, electricity, water supply, drainage, health station and school. However, completion of the installation of the basic infrastructure has been very slow, and both paved roads and drainage are still completely missing. Also, health centre and school are not operational yet with staff, as they are waiting for main relocation of the AHs to take place first. Hence, at the moment the closest school is 0.5km away and health station 2km from the site. For the Cham AHs, the nearest mosque is about 1km and second one (Masjid Kampong Chhnang) about 2.2km away from the resettlement site, but both are surrounded by floods and hence inaccessible except by boat during the flooding.
6. The resettlement site is lacking waste water treatment for sewerage and sanitation services and facilities. Drainage is planned to be kept separate from wastewater treatment and sewerage, which is expected to be constructed during Tonle Sap 2 project. Sanitation is at least at first planned to be soak-away system, which could later be linked to wastewater system once the treatment plant is built.
7. The resettlement site is connected by a road to the new public fishing port (approximately 500m distance from the resettlement site), but it is unclear if all the boats of the relocated AHs can fit into it. Theoretically, the port will allow fisherman families to continue with their livelihoods fairly uninterrupted if they have cost-free access to it. The distance from the houses will probably require the AHs to find a solution for security, especially at night time. The new fishing port is of concrete construction and can withstand 11m high floods.

8. The land plots are available for free for relocated AHs, but with 1,000 USD cost for backfilling with two-year repayment period (see Annex 2). The Provincial Authorities have no plan set for situation where AHs default on the 1,000 USD payment after the two years, or sell before the two-years is full. Already, 10 AHs have been identified who cannot afford to pay the 1,000 USD even in the two years. All of the AHs will receive official land title once the loan for backfilling has been paid. The land plots are also available for purchase by anyone for 3,400 USD for land and 1,000 USD for backfilling with two-year repayment period, and hence not only designated to the AHs agreeing for relocation.

**Figure 6-3: Layout of plots for resettlement of affected households**



#### 6.2.8 Landfill

90. The selected new landfill site is situated partially on public and partially on private land. Private land has been acquired through negotiated land acquisition between the owners and MEF/GDR. The negotiated land acquisition has been completed, but 3rd party validation has not been done yet.

91. Existing waste pickers in Kampong Chhnang current landfill sites have been identified and recorded. There are 14 AHs involved in waste picking, however, the number of waste pickers is depending on the day and time of the day, in what appears to be part-time employment for some of the waste pickers.

92. Screening of living conditions of AHs around the landfill sites in Kampong Chhnang within 350 m from the boundary of the landfill sites as per Ministry of Environment recommendations has started.

### 6.2.9 Follow up steps in Kampong Chhnang

- Re-design flood embankment project to reduce LAR, livelihood and social impacts, as per Recommendations for Resettlement and Social Safeguards Compliance Report prepared by PMIS. Undertake public consultations with all AHs as per new design, followed by DMS/SES.
- Complete DMS/SES with the stall owners on the way to the tourist port (51 AHs) and the ones already resettled to the new resettlement site or self-relocated from the northern section of the embankment (210 AHs). Begin Replacement Cost Survey (RCS) after completion of DMS/SES.
- For compliance with ADB SPS (2009) regarding 210 AHs already relocated for flood embankment: (a) Finalise construction of the resettlement site public infrastructure as soon as possible to service the AHs already relocated there; (b) Compensate all relocated AHs for any loss of structures at replacement cost, but including right for AHs to salvage materials from their existing structures; (c) Provide all relocated AHs transfer (including transport and rental allowance) and life stabilization allowance; (d) Provide all AHs compensation for loss of income and livelihoods; (e) Identify all vulnerable and severely affected HH, including those living with HIV/AIDS and provide additional allowances for vulnerable and severely affected households; (f) Ensure relocated AHs, especially vulnerable and severely affected, avoid falling into debt due to relocation; (g) Facilitate house building at relocation site before actual physical relocation while provide soak-away toilets for all relocated families who qualify as IDPoor1 or IDPoor2 under the project NGO component (component 4); (h) Provide affordable public services for the relocated AHs, as well as land titles and new family books free-of-all-charges, and school changing for relocated children without additional charges; and (i) Provide cost-free access to fishing port facilities, while improved port facilities by adding water supply and separate toilets for men and women.
- For landfill complete 3rd party verification of the negotiated land acquisition and include in DED a separate support building for waste pickers, with separate toilets for men and women, washing and cooking facilities with running water, first aid point, children's play area and shaded rest area.
- Organise public consultations and SES data collection with waste pickers at times when waste trucks are not arriving to the site, preferably in the early mornings, and separate consultations, DMS and SES with AHs living within 350 m of the landfill site. Provide mitigation measures to people living within 350 m. Prepare updated resettlement plan for the landfill site.
- Prepare LIRP, which includes vocational training and alternative livelihood options such as small vegetable gardens (provide seeds and training) and chicken raising (provide chickens, livestock training, as well as chicken flu awareness). Provide necessary tools, equipment and initial stock for AHs completing vocational training courses to start associated businesses.

## 6.3 The indigenous peoples

93. The indigenous peoples safeguard category for the project has been set as C. Kampong Chhnang flood embankment has direct impact on ethnic Cham and they have been identified and meaningfully consulted by the Provincial Authorities at the PPTA phase, and again when their relocation to the resettlement site started. Ethnic Vietnamese are not directly impacted by the project, but will be consulted in their relation to the resettlement site in Kampong Chhnang. Both ethnic minorities live alongside the Khmer majority and are well integrated the larger community.

94. Design features are included to ensure the ethnic Cham are beneficiaries and are meaningfully consulted during the detailed design of the subprojects especially with regard to the required relocation of houses for the construction of the kampong Chhnang flood protection embankment. Output 3 pre-identifies villages where ethnic Cham and Vietnamese are a majority of beneficiaries.

## 6.4 Grievance Redress Mechanism (GRM).

95. Ministry of Economy and Finance (MEF) General Department of Resettlement (RD-MEF) have set up Provincial Resettlement Sub-Committees Working Groups (PRSC-WG) in October 2017 for Kampong Chhnang and are in process of setting it up in Pursat. RD-MEF has also provided guidance to the Provincial Resettlement Sub-Committees (PRSC) to operationalize Grievance Redress Mechanism (GRM) for the project in mid-October 2017.

## 6.5 Gender Action Plan

96. The Project is classified as 'Effective Gender Mainstreaming' (EGM) under the Asian Development Bank's (ADB) guidelines (March 2010). The Project impact is increased economic activities and environmental protection in towns in the Tonle Sap Basin and the outcome of the project will be improved urban services and enhanced climate change resilience in Kampong Chhnang and Pursat municipalities. A Gender Action Plan (GAP) has been prepared in accordance with ADB's Policy on Gender and Development (1998), ADB Operations Manual Section C2/BP (2010) Gender and Development in ADB Operations, and the Government's goal to strengthen the role and social status of women through capacity building for women in all sectors, changing discriminatory social attitudes, and safeguarding women's rights to actively and equally participate in nation building.

97. The Gender Action Plan includes specific gender actions to help ensure men and women actively participate in project activities, receive project information, and have access to opportunities during project implementation. In this report the performance indicators/targets of the plan as presented in the PAM have been reformulated based on the SMART criteria to be able to more accurately measure the level of achievement.

**Table 6-2: Gender Action Plan**

GENDER ACTIVITIES/ ACTIONS	PERFORMANCE INDICATORS/ TARGETS	RESPONSIBLE AGENCIES	STATUS
<b>Output 1: Kampong Chhnang Urban Environmental Improvements</b>			
1.1 Ensure social and gender inclusion in community participation, including women directly consulted during the project implementation. <i>- Record women participation in terms of numbers, percentage, and how their suggestions and concerns have been addressed.</i>	1.1.1 Number of local people who participate in consultations on project design and implementation disaggregated by sex. Target: at least 40% women for each sub-project.  1.1.2 Relevant clauses on core labor standards (including gender-specific ones such as equal pay for equal work, equal opportunities for employment) are included in all bidding and contract documents	PMU, PIU, PMIS consultants, PDOWA, contractors, IRC/MEF and WCCC	Consultations with local people on project design have been started, no disaggregated data are not yet available
1.2 Ensure improved access to and affordable cost for women to public services, health and safety, and cultural / religious facilities.	1.2.1 Improved and better all-year-round access to health and school services, and cultural / religious facilities for relocated AHs.  1.2.2 Cost of public services not increasing for relocated AHs.  1.2.3 Improved access, not impeded by flooding, to urban citizens.	PMU, PIU, PMIS consultants, contractors, IRC/MEF and WCCC	Not yet started
1.3 Incorporate health and safety (including menstrual hygiene) management features in communities for improved solid waste management.	1.3.1 Provide separate toilet and washing facilities for women and men waste pickers (if allowed) at the new landfill site.  1.3.2 Health and safety training and equipment provided as part of Livelihood and Income Restoration Program (LIRP). Target: all women and men continuing to work on landfill site (if allowed).	PMU, PIU, PMIS consultants, PDOWA, contractors, IRC/MEF and WCCC	Separate toilet and washing facilities for women and men waste pickers have been included in the designs for the new landfill sites

1.4 Generate unskilled jobs in embankment construction /maintenance for women.	1.4.1 Contractors' cumulative unskilled labor days will be for at least 20% women, for embankment sub-project, by 2020.	Contractors, with oversight from PMU	Not yet started
1.5 Equal pay for men and women for work of equal type. - <i>Keep accurate records of number or percent of men and women labor days and salary for skilled and unskilled labor for embankment sub-project.</i> - <i>Monitor core labor standards (CLS) enforcement on a monthly basis.</i>	1.5.1 Average daily wage paid for unskilled labor to women and to men per major types of work. Target: no gender difference.	Contractors, with oversight from PMU	Not yet started
1.6 Facilitate safe and conducive environment for women's employment in embankment works.	1.6.1 Safe and conducive women's employment environment ensured through creation of women's groups if appropriate; skills enhancement; on-site clean toilet facilities separately to men and women. Target: at least 1 women's group created, 100% of women workers participate in skills enhancement provided by contractor, and separate toilet facilities for workers.	Contractors, with oversight from PMU	Will be included in the specific conditions and technical specifications of the bidding documents
1.7 Households irrespective of income, ethnicity or sex of household head receives equal compensation and payment for any land acquisition or resettlement losses.	1.7.1 Equal compensation for similar losses. Target: no gender difference.	PMU, PIU, PMIS consultants, PDOWA, IRC/MEF and WCCC	DMS is ongoing, the consultant will ensure that irrespective of income, ethnicity or sex of household head receives equal compensation and payment for any land acquisition or resettlement losses will be provided
1.8 Mitigate HIV/AIDS and human trafficking risks during embankment works	1.8.1 Ensure contractors and labor force participate in training on HIV/AIDS. Target: 100% of contractors' labor force participate in HIV/AIDS training by 2020.	Contractors, with oversight from PMU	Not yet started
<b>Output 2: Pursat Urban Environmental Improvements</b>			
2.1 Ensure social and gender inclusion in community participation, including women directly consulted during the project implementation. - <i>Record women participation in terms of numbers, percentage, and how their suggestions and concerns have been addressed.</i>	2.1.1 Number of local people who participate in consultations on project design and implementation disaggregated by sex. Target: at least 40% women for each sub-project.  2.1.2 Relevant clauses on core labor standards (including gender-specific ones such as equal pay for equal work, equal opportunities for employment) are included in all bidding and contract documents	PMU, PIU, PMIS consultants, PDOWA, contractors, IRC/MEF and WCCC	Consultations with local people on project design have been started, no disaggregated data are yet available

2.2 Ensure improved access for women to public services, health and safety, market stalls and cultural / religious facilities.	2.2.1 Improved access, not impeded by flooding, to public services and facilities. 2.2.2 Reduced hardship for women street sellers from street flooding near the market.	PMU, PIU, PMIS consultants, contractors, IRC/MEF and WCCC	Not yet started
2.3 Incorporate health and safety (including menstrual hygiene) management features in communities for improved solid waste management.	2.3.1 Provide separate toilet and washing facilities for women and men waste pickers (if allowed) at the new landfill site. 2.3.2 Health and safety training and equipment provided as part of Livelihood and Income Restoration Program (LIRP). Target: all women and men continuing to work on landfill site (if allowed).	PMU, PIU, PMIS consultants, PDOWA, contractors, IRC/MEF and WCCC	Separate toilet and washing facilities for women and men waste pickers have been included in the designs for the new landfill sites
2.4 Generate unskilled jobs in drainage construction /maintenance for women.	2.4.1 Contractors' cumulative unskilled labor days will be for at least 20% women, for drainage sub-project, by 2020.	Contractors, with oversight from PMU	Not yet started
2.5 Equal pay for men and women for work of equal type. <i>- Keep accurate records of number or percent of men and women labor days and salary for skilled and unskilled labor for drainage sub-project.</i> <i>- Monitor core labor standards (CLS) enforcement on a monthly basis.</i>	2.5.1 Average daily wage paid for unskilled labor to women and to men per major types of work. Target: no gender difference.	Contractors, with oversight from PMU	Not yet started
2.6 Facilitate safe and conducive environment for women's employment in drainage works.	2.6.1 Safe and conducive women's employment environment ensured through creation of women's groups if appropriate; skills enhancement; on-site clean toilet facilities separately to men and women. Target: at least 1 women's group created, 100% of women workers participate in skills enhancement provided by contractor, and separate toilet facilities for workers.	Contractors, with oversight from PMU	Will be included in the specific conditions and technical specifications of the bidding documents
2.7 Households irrespective of income, ethnicity or sex of household head receives equal compensation and payment for any land acquisition or resettlement losses.	2.7.1 Equal compensation for similar losses. Target: no gender difference.	PMU, PIU, PMIS consultants, PDOWA, IRC/MEF and WCCC	Not yet started
2.8 Mitigate HIV/AIDS and human trafficking risks during drainage works	2.8.1 Ensure contractors and labor force participate in training on HIV/AIDS. Target: 100% of contractors' labor force	Contractors, with oversight from PMU	Not yet started

	participate in HIV/AIDS training by 2020.		
<b>Output 3: Community Mobilization and Environmental Improvements (CMEI)</b>			
3.1 Sanitation grants to IDPoor 1 and 2, including female-headed households, if categorized as IDPoor 1 or IDPoor 2.	3.1.1 Household sanitation grants benefit at least 40% women-headed households.	PMU, PIU, PMIS consultants, PDOWA, NGO, and WCCC	Not yet started
3.2 Meaningfully consultations with women in Kampong Chhnang and Pursat on priority small scale infrastructure improvements and design (e.g., gender-specific requirements for public infrastructure, such as separate latrines for women with trash bins, if appropriate).	3.2.1 Consultations with women groups on identification of infrastructure needs and their location. Target: 40% of participants in consultations are women. 100% of women groups in selected localities consulted.	PMU, PIU, PMIS consultants, PDOWA, NGO, and WCCC	Not yet started
3.3 Capacity development and IEC materials will be gender-sensitive.	3.3.1 At least 40% of participants in CMEI activities and training are women.  3.3.2 IEC materials are checked by MPWT gender working group and PDOWA.  3.3.3 Hygiene IEC campaigns cover topics that are important for women (e.g., at least 30% of hygiene campaigns focus on menstrual hygiene and solid waste management).	PMU, PIU, PMIS consultants, PDOWA, NGO, and WCCC	Not yet started
<b>Output 4: Strengthened sector coordination and operations</b>			
4.1 Women's sanitation issues are incorporated in updated building code applications for six provincial towns around Tonle Sap (e.g., space in public bathrooms and separate toilets).	4.1.1 Updated building code applications have been designed with women's sanitation issues incorporated.	PMU, PIU, PMIS consultants, PDOWA and WCCC	No data available
4.2 Tonle Sap Urban Areas Development Framework and individual urban development strategies for Kampong Chhnang and Pursat are explained to women's groups.	4.2.1 100% of women's groups consulted are explained on Tonle Sap Urban Areas Development Framework.  4.2.2 At least 1 sector coordination meeting, chaired by MPWT, will include a discussion related to women's needs in integrated urban environmental management over project implementation.	PMU, PIU, PMIS consultants, PDOWA and WCCC	Not yet started
4.3 Semi-autonomous urban service units in Kampong Chhnang and Pursat municipality are established, become operational and have women represented.	4.3.1 At least 20% of staff in each unit are women.	PMU, PIU, PMIS consultants, PDOWA and WCCC	Not yet started
<b>Output 5: Strengthened Capacity for Project Implementation, and Operations and Maintenance</b>			
5.1 At least 1 member of the Project Steering Committee is a woman.		PMU	Complied

5.2 At least 30% of PMU and 30% of staff in both PIUs are women (2014 Baseline: PMU=1 woman; PIUs have not been established).	PMU, PIUs	PMU, 13 members, 2 women PIU Kampong Chhnang, 11 members, 1 women PIU Pursat 11 members, 2 women
5.3 Project management and implementation consultants include an international social development /resettlement specialist (6 person-months) and national gender specialist (6-person months).	PMU, PMIS	Inputs of the international social development specialist has been started. The national gender specialist has not yet been mobilized
5.4 A resettlement/social development officer is appointed in the PMU	PMU	No yet done
5.5 The NGO appoints at least 30% women as part of their team for each town in Kampong Chhnang and Pursat.	PMU, NGO	NGO recruitment is ongoing
5.6 A government community coordinator is appointed in Pursat PIU and two government community coordinators are in Kampong Chhnang PIU.	PMU, PIUs	Not yet appointed
5.7 A representative from the PDOWA is appointed to the provincial coordination committee in Pursat and Kampong Chhnang.	PMU, PIUs, PDOWA	No data available
5.8 Project performance monitoring system includes sex-disaggregated data.	PMU, PMIS	PPMS to be set up
5.9 The annual project performance monitoring and evaluation reports will include progress against sex-disaggregated indicators. Routine monitoring will be done, and indicators and risks added to logical framework.	PMU, PMIS	To be started
5.10 Progress reports (e.g., quarterly, safeguards, annual project performance monitoring and evaluation, and PPCR reports) include information on gender activities. The GAP monitoring table is updated and attached to the project progress report (twice a year).	PMU, PMIS	Ongoing
5.11 GAP performance included in mid-term and final project reviews.	PMU, PMIS	No due
5.12 At least 20% of technical training participants are professional staff women of PMU and PIUs.	PMU, PIUs	Not yet started

**7 PROJECT PERFORMANCE**

98. The following provides a summary assessment of the likelihood of reaching the targets set out in the DMF, and areas where the DMF needs to be changed.

Design Summary	Performance Targets and Indicators with Baselines	Assessment of the Project Implementation
<p><b>Outcome</b> Improved urban services and enhanced climate change resilience in Kampong Chhnang and Pursat municipalities.</p>	<p>By 2023: a. At least 100,000 residents benefit from the project in Kampong Chhnang and Pursat municipalities (2013: 42,500 residents in Kampong Chhnang and 51,400 residents in Pursat). b. Households affected by floods in Kampong Chhnang reduced by 80% (2013: 5,400 households).</p>	<p>Too early to assess</p>
<p><b>Outputs</b>  <b>Outputs 1</b>  Kampong Chhnang urban area environmental improvements</p>	<p>By 2022: (Baseline: not applicable, if not otherwise stated) 1a. At least 15.1 km of embankment and road improved and constructed to a once in 50 years frequency flood level or 1:50 year flood levels (2013: range 1:1–1:20) 1b. 365 ha of urban land in 14 villages, and 950 ha of agricultural land in 14 villages are free from flooding from Tonle Sap.  1c. About 10 ha is converted into a controlled landfill.  1d. Two open dumpsites are closed and capped.  1e. Household collection increases to at least 60% in the municipality of Kampong Chhnang (2013: 4% or 400 households)</p>	<p>It has been agreed to adopt a shorted low cost alignment with the main objective to protect the lower section in the Kampong Chhnang urban area, mainly located adjacent to the tourist port area, from flooding. The resulting savings will be applied to the improvement of the drainage of the urban areas and possibly the construction of a WWTP.  Cumulative waste collection after 10 years is estimated to be between 60.000 to 80.000 tonnes, which can be accommodated in one or two landfill cells with a total area of 1 ha. The open dumpsites are located on private land. The legal implications for closing these dumpsites which would require public investment on private property, will have to be assessed  SWM operation modalities would focus on achieving this target</p>
<p><b>Output 2</b>  Pursat urban area environmental improvements</p>	<p>By 2022: (Baseline: not applicable, if not otherwise stated) 2a. At least 9.89 km of drains are improved and extended (2013: 5.64 km of drains) controlled landfill.</p>	<p>During the validation of the PPTA it was found that there are 24 km of existing drains. Deferred maintenance which has resulted a partial blockage of pipes and outfalls seems to be the main problem. The proposed new drains in the PPTA do not match the existing system.</p>

Design Summary	Performance Targets and Indicators with Baselines	Assessment of the Project Implementation
	<p>2f. Two open dumpsites are closed and capped (2013: 1 of 2 landfill sites is closed)</p> <p>2g. Household collection increases to at least 60% in Pursat municipality (2013: 11%)</p>	<p>Moreover, installing new pipelines next to existing blocked lines is no solution for deferred maintenance problems. The detailed design is focusing on the improvement of the existing system and introduction of better O&amp;M practices.</p> <p>The open dumpsites are located on private land. The legal implications for closing these dumpsites which would require public investment on private property, will have to be assessed</p> <p>SWM operation modalities would focus on achieving this target</p>
<p><b>Output 3</b></p> <p>Community mobilization and environmental improvements</p>	<p>By 2022: (Baseline: 0)</p> <p>3a. At least 40% of participants in output activities and training are women.</p>	<p>NGO under package IV will be mobilized in February 2018</p>
<p><b>Output 4</b></p> <p>Strengthened sector coordination and operations</p>	<p>By 2022: (Baseline: not applicable)</p> <p>4a. A plan for climate change adaptation in urban areas around the Tonle Sap is adopted by Tonle Sap provinces</p> <p>4b. Building codes with refined latrine standards are adopted by Tonle Sap provinces.</p> <p>4c. MPWT chairs at least two coordination meetings per year</p> <p>4d. Semi-autonomous USUs in Kampong Chhnang and Pursat municipalities are established and become operational (20% of staff are women).</p>	<p>Ongoing, no progress data available</p> <p>Ongoing, no progress data available</p> <p>Ongoing, no progress data available</p> <p>Delayed, package IV consultant could not be engaged and sifting this responsibility to the PMIS will need a contract variation and internal agreement within the JV</p>
<p><b>Output 4</b></p> <p>5. Strengthened capacity for project implementation, and operations and maintenance</p>	<p>By 2022:</p> <p>5a. At least 20% of training participants are qualified women (2013: 5%-10%)</p> <p>5b. A capacity development program is adopted by each municipality (baseline: not applicable).</p>	<p>A training needs assessment will be initiated during the next quarter</p>

## 8 LOAN COVENANTS

### 8.1 Loan covenants and other conditions.

99. 42 households located along the embankment alignment in Kampong Chhnang have been moved to a new resettlement site. This was done as part of an ongoing provincial initiative with no direct relation to the Project. However as a large number of HHs under the provincial resettlement programme are residing within or close to the proposed alignment of the flood protection embankment and that this alignment was known before the provincial authorities embarked on their resettlement initiative, the ADB was of the opinion that the required steps as per ADB SPS (2009) should have been followed and that the project is not in compliance with Schedule 5, Paragraph 10 (Land Acquisition and Involuntary Resettlement) and Schedule 5, Paragraph 14 (Safeguards Monitoring and Reporting) of the loan agreement.

100. As a first step to bring the project in compliance with the loan covenant, the GDR has largely completed a DMS of households still in their current abode along the embankment and has collected information and data from households that had already been moved. The agreed Khmer version of the entitlement matrix has not yet been provided to AHs identified along the embankment alignment.

101. The project is not in compliance with Sched 5, para 3 of the covenants that requires the completion of a roadmap for establishing Urban Service Units within 12 months of the Effective Date, at this date the plans for establishing semi-autonomous USUs within the municipalities of Kampong Chhnang and Pursat should be in place, including relevant draft ministerial prakas (or ministerial decisions) to be signed by MPWT for the establishment of USUs, its board of directors (or its equivalent), staffing requirements, human resource recruitment plan, office location, reporting responsibilities, financial management and audit requirements, good governance actions, assets transfer, and timeline and process of conversion from a PIU to a USU.

102. It is understood that Ministerial Prakas (103 PRK/SK for Pursat and 104 PRK/SK for Kampong Chhnang), issued on 29 March 2017, establishes the Ministry's commitment for formally establishing a self-financed wastewater and solid waste management unit in each of the municipalities. However, it has not been possible to obtain a copy of these documents. Moreover, from discussions with local officials it transpired that Municipalities are not aware of these Ministerial Prakas 103 and 104. and no further action for establishment of the USUs have been taken by them. One of the reasons of this inaction is that the institutional support for the establishment of the USUs have so far not been provided as the CS03 consultancy package could not be awarded. It is proposed to include the ToR of this package in the ToR of the PMIS and this would have to be agreed in a second contract variation. During the next quarter the PMIS will start discussions with the Municipalities on the formation of the USUs.

103. The project is not in compliance with Sched 5, para 4 of the covenants which requires that within 18 months of the Effective Date, each USU has conducted a review of existing Environmental Sanitation Fees levied in the municipalities of Kampong Chhnang and Pursat and has completed a feasibility study on levying Environmental Sanitation Fees that recovers operations and maintenance costs and gradual depreciation of solid waste management, flood control and drainage, taking into account affordability for the poor.

104. USUs have not yet been established, but the PMIS has conducted a review of the existing arrangements and fees for solid waste collection and set up a model for the calculation of environmental sanitation fees. A final proposal for such fees can only be completed after the completion of the detailed designs for the sanitary landfill sites and with the O&M requirements and cost for these facilities including the O&M cost of the related equipment. A list of equipment required for SWM can only be finalized after a decision on the modalities for operation of SWM activities; force account, contracts with the private sector or a mix of both.

105. The compliance with loan covenants is presented in Annex 6.

## 9 ASSESSMENT OF VALIDITY OF KEY ASSUMPTIONS AND RISKS

106. In the Project Design and Monitoring Framework the following risks that could adversely affect effective implementation and sustainable benefits had been identified. The present validity of those risks can be summarized as follows:

Assumptions and Risks	Validity
Outcome Improved urban services and enhanced climate change resilience in Kampong Chhnang and Pursat municipalities.	
Economic activities are adversely affected by natural disasters and lack of climate change impact mitigation. Municipalities are not prepared to collect revenues for O&M of urban infrastructure.	Some design parameters, especially with regard to maximum water levels in the Tonle Sap, will have to be carefully evaluated. The capacity for resource mobilization by Municipalities will have to be studied in more detail. Detailed designs will take into account the initial investment cost versus O&M cost of the infrastructures.
<b>Output 1. Kampong Chhnang urban area environmental improvements</b>	
Project start-up delays increase the number of affected people along the embankment alignment CSOs and/or NGOs raise concerns during project implementation.	Comparing Google Earth imagery from 2013/14 with imagery from 3/2/207 does not show a notable increase in the number of houses along the embankment.
<b>Output 2. Pursat urban area environmental improvements</b>	
NGOs raise concerns during project implementation	The INGO under package 4 will close cooperate with local NGOs and timely address the concerns of affected people. Beneficiary population and the general population. The implementation of the stakeholder communication plan should timely address and mitigate these concerns.
<b>Output 3. Community mobilization and environmental improvements</b>	
CSOs and/or NGOs raise concerns during project implementation.	See above
<b>Output 4. Strengthened sector coordination and operations</b>	
A plan for climate change adaption will be difficult to formulate as short and midterm environmental impacts will mainly result from the flow alterations in the Mekong River, due to development activities in the upstream countries. These will cause negative effects for ecosystem productivity, and thus also for livelihoods of the inhabitants of Tonle Sap floodplain, who directly depend on the lake's natural resources. The projected changes in the dry-season water levels, estimated to increase the water level in Tonle Sap Lake by 0.15– 0.60 m, would, in particular, be harmful to the present ecosystem of the lake.	The Mekong River Commission has commissioned a study on Modelling of Future Land-Use, Infrastructure & Flood Behaviour across the Cambodian Floodplain, Tonle Sap and The Mekong Delta of Cambodia under different lans use, development and climate change scenarios. A draft report with the results of the study will be available by February 2018
<b>Output 5. Strengthened capacity for project implementation, and operations and maintenance</b>	
Participants might not be fully receptive to the training and capacity building	A detailed training needs assessment will be initiated during the next quarter. This assessment will be based on detailed consultations with all the potential recipients of training activities
<b>Financial Management Arrangements</b>	
Municipalities are not prepared to collect revenues for O&M of urban infrastructure.	Problems in revenue collection should be timely identified by the municipal financing specialists and addressed under output 5. It is proposed to establish a special municipal office for collection of user fees from private and institutional users. The municipal financing specialists will support these units to introduce business plans to recover O&M costs for the services provided.
The project implementation units (PIUs) in Kampong Chhnang and Pursat are new entities and may have difficulty in managing project sub-	The PIUs will draw management staff from PDPWTs and municipalities. A PMU in the MPWT will support the PIUs in project implementation. The PMU will use a project financial

accounts and adhering to accounting policies and procedures.	management system developed under previous ADB projects, and will be responsible for all procurement. It will support the PIUs, with assistance from the PMIS consultants. A provincial coordination committee will guide the project in each town. Each PIU sub-account will have a ceiling of \$5,000. To ensure strict financial controls, each PIU will be required to liquidate every month. A late submission of liquidation (more than 10 days from the end of the month) will be grounds for suspension of the sub-account—
Fund mismanagement	The implementation arrangements are outlined in the project administration manual. All procurement will be done from within the PMU; a representative from each PIU will be invited to participate on the procurement committee. An imprest account will be established in the PMU. A sub-account will be established in each PIU, with a ceiling of \$5,000 and requirement for monthly liquidations. The proposed fund allocation also helps minimize fund mismanagement—reducing the risk to low.
Inadequate internal audit	Each government ministry has a Department of Inspectorate, whose role is to carry out the functions of an internal auditor within the ministry, and ensure that government rules and regulations are observed at all times. The MPWT has extensive experience in undertaking audits for externally financed projects. The Standard Operating Procedures for all Externally Financed Projects/Programs in Cambodia (May 2012) outline the requirements for internal audit
Inadequate external audit	The MEF will recruit an independent auditor to carry out external audits of all externally financed projects, including ADB-supported projects. The Standard Operating Procedures for all Externally Financed Projects/Programs in Cambodia (May 2012) outline the requirements for external audit

## 10 TARGETS FOR THE NEXT QUARTER

107. The targets for the next quarter can be summarized as follows:

### 10.1 Sanitary Landfills

108. The aim is to complete the detailed design, cost estimates, design reports and bidding documents for the kampong Chhnang and Pursat landfill sites during the next quarter. The International SWM specialist will be mobilized in January to assist in finalizing the detailed designs, the design report and the technical specifications. Draft bidding documents will be prepared and submitted to ADB for review and approval

### 10.2 Pursat Drainage System and WWTP

#### 10.2.1 Pursat Drainage System

109. Based on the details collected during the inspection and inventory of the drainage system, a drainage simulation model has been set up. This model will be the basis for the detailed design of the required improvements and extensions of the system. The model will be fine-tuned during the next quarter to identify the most cost effective solution for improvement of the system. Based on model results the detailed design of the selected system improvement and extension options will be finalized.

#### 10.2.2 WWTP

110. The selection of a new site for the WWTP will be confirmed and the requirements for detailed design will be assessed. The additional requirements for topographical survey works will have to be included in a variation of the Consultant Services Contract

### 10.3 Kampong Chhnang Flood Protection Embankment

111. The detailed design and cost estimate for the agreed short low cost embankment will be completed during the next quarter.

112. The detailed requirement for the preparation of a Drainage Master Plan will be assessed and included in a variation of the Consultant Services Contract.

113. The international river engineer will be mobilized during the next quarter to support the completion of the detailed designs for the Pursat drainage System and WWTP, and the Kampong Chhnang Flood Embankment. He will also provide guidance for the improvement of drainage in the low lying areas behind the flood embankment and the preparation of a drainage master plan for Kampong Chhnang.

### 10.4 Resettlement

114. During the next quarter the International resettlement expert will be mobilized. The focus of his activities can be summarized as follows.

115. To ensure compliance of SPS for resettlement site and 210 Ahs the following information will have to be obtained:

- Complete data of DMS/SES of AHs & APs (including vulnerable and poor),
- Compliance report (being prepared by the GDR),
- Contract between Province and private company, and (4) minutes of all public consultations (such as 10-11-17) organized by the Province.

This information will be entered in DMS/SES data into resettlement M&E DB (framework sent in Nov 2017)

116. For Public Consultations support will be provided to the GDR in conducting consultations with AHs near landfill sites and waste pickers, all potential AHs for KCH embankment and for consultation of ethnic minorities (Vietnamese floating community and Cham in Kampong Chhnang) and women groups separately.

117. In the detailed design process, it will be ensured that involuntary resettlement safeguard categorization remain as B. Designs will be checked to ensure that recommendations of compliance report and field mission reports are followed. Proposed borrow areas for the construction of the flood embankment in Kampong Chhnang

and the land filling for the Pursat landfill construction will be checked for LAR and adverse social impact (for example due to truck traffic increasing risk of accidents and dust).

118. For the preparation of the Detailed Resettlement Plans (DRP documentation will be collected for negotiated resettlement for Kampong Chhnang landfill site, and signed minutes of meeting with PMU, ADB and MOE on landfill site safety zoning. Separate DRPs will be prepared for 1) Kampong Chhnang landfill and 2) Pursat landfill by separating each as their own document

119. For safeguard monitoring and public information contact details and composition of GRM in each Province will be collected and follow up will be provided on any complaints sent to GRM in both provinces, implementation of the resettlement activities will closely have followed and Public information booklet will be prepared updated to ensure that updated information about project scope, entitlements and allowances (LIRP, mitigation etc), GRM (including contact details) and ADB SPS policy is included. Follow up will be provided for the implementation of the Gender Action Plan as presented in this report.

## **10.5 Environment**

120. Priority will be given to updating the IEEs for the Kampong Chhnang and Pursat landfill construction and operation and the preparation of the EMPs for construction and operation of these two landfills. TOR the government mandated IEIA to be prepared by an external national consultant registered with the MoE will be finalized. It will be ensured that these ToRs are in compliance with the agreements reached with the MoE during this reporting period on the scope of the tasks to be undertaken by the external consultant.

121. To support the updating of the IEEs and preparation of the EMPs and to finalize the ToR for the external consultant for the preparation of the IEIAs, the international environmental specialist will be mobilized.

## **10.6 Institutional Support**

The international institutional development expert will be mobilized during the next quarter. His input will focus on a training needs assessment for the PMU and PIUs and the outline of a comprehensive training plan to be implemented under the project. Although not yet formally part of the PMIS ToR the specialist will also initiate preparatory activities for the establishment of a road map for the formation of USUs in the 2 municipalities. The assessment of the possible modalities for SWM operations, including the participation of the private sector will be initiated.

## **Annexes**

**Annex 1 : Revised Implementation Schedule**









**Annex 2 : Revised Personnel Schedule**



**Annex 3 : Fund Utilization**

<b>Status of Loan Utilization (Loan 3311)</b>							
<b>As of 31 Dec 2017</b>							
<b>Cat. Ref.</b>	<b>Category Name</b>	<b>US Dollars</b>					
		<b>Allocation</b>	<b>Contracts Awarded</b>	<b>Uncontracted Loan Balance</b>	<b>Contracts Disbursed</b>	<b>Undisbursed Loan Balance</b>	<b>Undisbursed Contract Balance</b>
		<b>A</b>	<b>B</b>	<b>C = A - B</b>	<b>D</b>	<b>E = A - D</b>	<b>F = B - D</b>
01A	CW - KC Flood Protection	14,218,837	-	14,218,837	-	14,218,837	-
01B	CW - KC Solid Waste Mgt.	434,163	-	434,163	-	434,163	-
01C	CW - Pursat Flood Protection	604,727	-	604,727	-	604,727	-
01D	CW - Pursat Drainage	4,898,430	-	4,898,430	-	4,898,430	-
01E	CW - PS Solid Waste Mgt	1,029,023	-	1,029,023	-	1,029,023	-
01F	CW - KC Small-scale Inf. Dev.	740,051	-	740,051	-	740,051	-
01G	CW - PS Small-scale Inf. Dev.	740,051	-	740,051	-	740,051	-
02A	GD - KC Solid Waste Mgt.	737,231	-	737,231	-	737,231	-
02B	GD - PS Solid Waste Mgt	821,808	-	821,808	-	821,808	-
02C	GD - KC Embank. Manual Equipment	36,650	-	36,650	-	36,650	-
02D	GD - PS Flood Manual Equipment	36,650	-	36,650	-	36,650	-
02E	GD - PS Drainage Manual Equipment	36,650	-	36,650	-	36,650	-
03A	WS - Project Mgt & Implement Supp.	580,757	534,000	46,757	82,035	498,722	451,965
03B	WS - SSCD	9,867	-	9,867	-	9,867	-
04A	CS - PM & IS	3,407,553	3,577,913	(170,360)	536,381	2,871,172	3,041,532
04B	CS - SSCD	97,264	-	97,264	-	97,264	-
04C	CS - Survey & Investigations	67,010	85,000	(17,990)	12,621	54,389	72,379
05A	IA - Office and Travel Expense	401,742	40,369	361,373	48,337	353,405	(7,968)
05B	IA - Vehicles	152,239	134,500	17,739	134,500	17,739	-
05C	IA - Equipment	15,506	51,453	(35,947)	41,453	(25,947)	10,000
06	Interest During Implementation	1,402,476	-	1,402,476	8,633	1,393,843	(8,633)
07	Unallocatd	6,687,237	-	6,687,237	-	6,687,237	-
	Imprest Account	(22,509)	-	(22,509)	211,710	(234,219)	(211,710)
	<b>Total</b>	<b>37,133,413</b>	<b>4,423,235</b>	<b>32,710,178</b>	<b>1,075,670</b>	<b>36,057,743</b>	<b>3,347,565</b>

<b>Status of Loan Utilization (Loan 8295)</b>							
<b>As of 31 Dec 2017</b>							
<b>Cat. Ref.</b>	<b>Category Name</b>	<b>US Dollars</b>					
		<b>Allocation</b>	<b>Contracts Awarded</b>	<b>Uncontracted Loan Balance</b>	<b>Contracts Disbursed</b>	<b>Undisbursed Loan Balance</b>	<b>Undisbursed Contract Balance</b>
		A	B	C = A - B	D	E = A - D	F = B - D
1	CW - KC Flood Protection	4,982,000	-	4,982,000	-	4,982,000	-
2	Service During Implementaton	18,000	-	18,000	-	18,000	-
	Imprest Account			-	-	-	-
	<b>Total</b>	<b>5,000,000</b>	<b>-</b>	<b>5,000,000</b>	<b>-</b>	<b>5,000,000</b>	<b>-</b>
<b>Status of Grant Utilization (Grant 0454)</b>							
<b>As of 31 Dec 2017</b>							
<b>Cat. Ref.</b>	<b>Category Name</b>	<b>US Dollars</b>					
		<b>Allocation</b>	<b>Contracts Awarded</b>	<b>Uncontracted Loan Balance</b>	<b>Contracts Disbursed</b>	<b>Undisbursed Loan Balance</b>	<b>Undisbursed Contract Balance</b>
		A	B	C = A - B	D	E = A - D	F = B - D
01A	CW - PS Drainage	2,460,000	-	2,460,000	-	2,460,000	-
01B	CW - KC Sanitation Improvement	510,000	-	510,000	-	510,000	-
01C	CW - PS Sanitation Improvement	510,000	-	510,000	-	510,000	-
02A	WS - NGO SCEI	200,000	-	200,000	-	200,000	-
02B	WS - CCAUD	10,000	10,000	-	-	10,000	10,000
03A	CS - CCAUD	200,000	200,000	-	47,159	152,841	152,841
03B	CS - NGO SCEI	810,000	-	810,000	-	810,000	-
03C	CS - Survey and Investigation	100,000	165,796	(65,796)	-	100,000	165,796
04	Unallocated	200,000		200,000	-	200,000	-
	Imprest Account	-	-	-	146,841	-	-
	<b>Total</b>	<b>5,000,000</b>	<b>375,796</b>	<b>4,624,204</b>	<b>194,000</b>	<b>4,952,841</b>	<b>328,637</b>
							4%

<b>Annex 4 : Contract Award and Disbursement Projections</b>
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CONTRACT AWARD AND DISBURSEMENT PLAN -- L3311/L8295/G0454-CAM

Quarterly Contract Awards Projections

No.	Category	Project and Item	Cost Est.	2016				2017				2018				2019				2020				2021				2022							
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
1	G07	Supply of KC Solid Waste Management Equipment	0.88																																
2	G08	Supply of Pursat Solid Waste Management Equipment	0.97																	0.44															
3	CW04	Construction of KC Embankment	22.42																	0.49															
4	CW05 (a)	Construction of Pursat Drainage (a)	2.86																																
5	CW06	Construction of Pursat Drainage (b)	4.69																																
6	CW06	Construction of Pursat Landfill Site	1.66																																
7	CW07	Construction of Pursat River Embankment Protection	0.69																																
8	CW08	Construction of KC Landfill Site	0.69																																
9	CW09	KC and Pursat Community-driven Env. Improvements	2.48																																
10	CS01	Project Management and Implementation Support	4.21																																
11	CS02	Climate Change Adaptation in Urban Development	0.29																																
12	CS03	Strengthening Sector Development	-																																
13	CS04	NGO Support for Output 3 (CMEI)	0.90																																
14	G01	Supply of 5 units 4WD double cabin pick-up trucks	0.13	0.13																															
15	G02	Supply of 8 motorcycles	0.01	0.01																															
16	G03	Office furniture for PMU and PIUs (KC and Pursat)	0.02	0.02																															
17	G04	Office equipment for PMU and PIUs (KC and Pursat)	0.03	0.03																															
18	G05	Equipment for Pursat Drainage and Flood Protection	0.08																																
19	G06	Manual Equipment for KC Embankment	0.04																																
20	CW01	Office Repairs (PMU)	0.01	0.01																															
21	CW02	Office Repairs (PIU KC)	0.02	0.02																															
22	CW03	Office Repairs (PIU Pursat)	0.01	0.01																															
<b>Total</b>			<b>43.10</b>	<b>0.23</b>	<b>-</b>	<b>4.21</b>	<b>-</b>	<b>-</b>	<b>0.29</b>	<b>-</b>	<b>0.90</b>	<b>0.69</b>	<b>4.52</b>	<b>24.06</b>	<b>4.69</b>	<b>-</b>	<b>-</b>	<b>0.83</b>	<b>-</b>	<b>0.92</b>	<b>-</b>	<b>0.83</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.92</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>				

Quarterly Disbursement Projections

No.	Category	Project and Item	Cost Est.	2016				2017				2018				2019				2020				2021				2022							
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
1	G07	Supply of KC Solid Waste Management Equipment	0.88																																
2	G08	Supply of Pursat Solid Waste Management Equipment	0.97																																
3	CW04	Construction of KC Embankment	22.42																																
4	CW05 (a)	Construction of Pursat Drainage (a)	2.86																																
5	CW06	Construction of Pursat Drainage (b)	4.69																																
6	CW06	Construction of Pursat Landfill Site	1.66																																
7	CW07	Construction of Pursat River Embankment Protection	0.69																																
8	CW08	Construction of KC Landfill Site	0.69																																
9	CW09	KC and Pursat Community-driven Env. Improvements	2.48																																
10	CS01	Project Management and Implementation Support	4.21																																
11	CS02	Climate Change Adaptation in Urban Development	0.29																																
12	CS03	Strengthening Sector Development	-																																
13	CS04	NGO Support for Output 3 (CMEI)	0.90																																
14	G01	Supply of 5 units 4WD double cabin pick-up trucks	0.13	0.13																															
15	G02	Supply of 8 motorcycles	0.01	0.01																															
16	G03	Office furniture for PMU and PIUs (KC and Pursat)	0.02	0.02																															
17	G04	Office equipment for PMU and PIUs (KC and Pursat)	0.03	0.03																															
18	G05	Equipment for Pursat Drainage and Flood Protection	0.08																																
19	G06	Manual Equipment for KC Embankment	0.04																																
20	CW01	Office Repairs (PMU)	0.01	0.01																															
21	CW02	Office Repairs (PIU KC)	0.02	0.02																															
22	CW03	Office Repairs (PIU Pursat)	0.01	0.01																															
<b>Total</b>			<b>43.10</b>	<b>0.23</b>	<b>-</b>	<b>0.63</b>	<b>-</b>	<b>-</b>	<b>0.03</b>	<b>0.45</b>	<b>0.43</b>	<b>0.43</b>	<b>1.14</b>	<b>6.43</b>	<b>4.19</b>	<b>3.39</b>	<b>3.39</b>	<b>3.20</b>	<b>3.17</b>	<b>4.00</b>	<b>2.53</b>	<b>2.53</b>	<b>2.53</b>	<b>2.53</b>	<b>2.53</b>	<b>0.54</b>	<b>1.09</b>	<b>0.12</b>	<b>0.12</b>	<b>-</b>	<b>-</b>				

Disbursement Pattern (%)

No.	Category	Packages	CA Amount	2016				2017				2018				2019				2020				2021				2022			
				Q1-12	Q2-12	Q3-12	Q4-12	Q1-13	Q2-13	Q3-13	Q4-13	Q1-14	Q2-14	Q3-14	Q4-14	Q1-15	Q2-15	Q3-15	Q4-15	Q1-16	Q2-16	Q3-16	Q4-16	Q1-17	Q2-17	Q3-17	Q4-17	Q1-18	Q2-18	Q3-18	Q4-18
1	G07	Supply of KC Solid Waste Management Equipment	0.88	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.02%	0.00%	0.00%	0.00%	0.00%	0.00%	1.02%	0.00%	0.00%	0.00%	0.00%
2	G08	Supply of Pursat Solid Waste Management Equipment	0.97	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.13%	0.00%	0.00%	0.00%	0.00%	0.00%	1.13%	0.00%	0.00%	0.00%	0.00%
3	CW04	Construction of KC Embankment	22.42	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.40%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%	4.16%
4	CW05 (a)	Construction of Pursat Drainage (a)	2.86	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5	CW06	Construction of Pursat Drainage (b)	4.69	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6	CW06	Construction of Pursat Landfill Site	1.66	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7	CW07	Construction of Pursat River Embankment Protection	0.69	0.00%	0.00%	0.00%	0.00%																								

**Annex 5 : Overview of the input by Key International and National Specialists**

**(A) REMUNERATION  
KEY EXPERT (INTERNATIONAL)**

No.	Expert / Position	Original Contract		Previous Up to Last Quarter		This Quarter		Total Up to This Quarter		Balance		
		Inputs (Person-Months)		Total Inputs	Total Inputs (Person-Months)		Total Inputs (Person-Months)		Total Inputs (Person-Months)		Total Inputs (Person-Months)	
		Home	Field		Home	Field	Home	Field	Home	Field	Home	Field
<b>A. Remuneration</b>												
	<b>Key Expert (International)</b>											
K-1	<b>Christopher Konecki/Louis RIJK</b> <i>Team Leader / Municipal Engineer</i>		35.00	35.00		5.10		2.40		7.50	27.50	
K-2	<b>KIM, Dong Min</b> <i>Geotechnical Engineer</i>		4.00	4.00		1.57		-		1.57	2.43	
K-3	<b>Ricky Kwan/ Prashant MALLA</b> <i>River Engineering Specialist</i>		8.00	8.00		-		0.50		0.50	7.50	
K-4	<b>Herkko Kristian Torssonen</b> <i>Solid Waste Management Specialist</i>		6.00	6.00		1.43		-		1.43	4.57	
K-5	<b>Cliff Massey/Rachel Wildblood</b> <i>Environment Specialist</i>		4.00	4.00		-		0.77		0.77	3.23	
K-6	<b>Paul Van Strijp/Teemu Antero Jantunen</b> <i>Social Development and Resettlement Specialist</i>		6.00	6.00		-		2.00		2.00	4.00	
K-7	<b>Kerry Maxwell Blanch</b> <i>Municipal Finance Specialist/Economist</i>		6.00	6.00		1.00		-		1.00	5.00	
K-8	<b>Eric Baye</b> <i>Private Sector Specialist</i>		3.00	3.00		-		-		-	3.00	
K-9	<b>Claes Clifford</b> <i>Institutional Specialist</i>		6.00	6.00		-		-		-	6.00	
	<b>Subtotal Key Expert (International)</b>			<b>78.00</b>		<b>9.11</b>		<b>5.67</b>		<b>14.78</b>	<b>63.22</b>	

**(A) REMUNERATION  
KEY EXPERT (NATIONAL)**

No.	Expert / Position	Original Contract		Previous Up to Last Quarter		This Quarter		Total Up to This Quarter		Balance		
		Inputs (Person-Months)		Total Inputs	Total Inputs (Person-Months)		Total Inputs (Person-Months)		Total Inputs (Person-Months)		Total Inputs (Person-Months)	
		Home	Field		Home	Field	Home	Field	Home	Field	Home	Field
	<b>Key Expert (National)</b>											
KN1	<b>Phai Sokheng</b> <i>Deputy Team Leader/Civil Engineer 1</i>	33.00		33.00		2.11		-		2.11	30.89	
KN2	<b>Srey Socheat</b> <i>Deputy Team Leader/Civil Engineer 2</i>	33.00		33.00		7.00		3.00		10.00	23.00	
KN3	<b>Ty Sopheak/Chea Ketia</b> <i>National Geotechnical Engineer</i>	12.00		12.00		0.20		3.00		3.20	8.80	
KN4	<b>Som Kosal</b> <i>Senior Civil Engineer 1</i>	12.00		12.00		-		-		-	12.00	
KN5	<b>Sim Sen</b> <i>Senior Civil Engineer 2</i>	12.00		12.00		-		1.97		1.97	10.03	
KN6	<b>Phung Katry/ Mam Sanoun</b> <i>Civil Engineer-River Hydrology</i>	12.00		12.00		-		2.97		2.97	9.03	
KN7	<b>Yim Mong Toeun</b> <i>Civil Engineer-Solid Waste Management</i>	10.00		10.00		1.83		3.00		4.83	5.17	
KN8	<b>Chhoeum Ravann</b> <i>Resident Engineer 1</i>	12.00		12.00		-		-		-	12.00	
KN9	<b>So Saran</b> <i>Resident Engineer 2</i>	12.00		12.00		-		-		-	12.00	
KN10	<b>Chhor Ratha</b> <i>Site Engineer 1</i>	20.00		20.00		-		-		-	20.00	
KN11	<b>Ro Rosbunnat</b> <i>Site Engineer 2</i>	20.00		20.00		-		-		-	20.00	
KN12	<b>Pong Veasna</b> <i>Site Engineer 3</i>	20.00		20.00		-		-		-	20.00	
KN13	<b>Vuth Ratha</b> <i>Site Engineer 4</i>	20.00		20.00		-		-		-	20.00	
KN14	<b>Chhay Theara</b> <i>AutoCAD Operator-Solid Waste Management</i>	10.00		10.00		-		2.53		2.53	7.47	
KN15	<b>Norm Mara</b> <i>AutoCAD Operator-Drainage and River Bank Protection</i>	8.00		8.00		-		-		-	8.00	
KN16	<b>Pen Titdara</b> <i>AutoCAD Operator-Flood Control</i>	8.00		8.00		2.00		3.00		5.00	3.00	
KN17	<b>Hep Srey Leak</b> <i>Gender and Development Specialist</i>	6.00		6.00		-		-		-	6.00	
KN18	<b>Chap Samoeun</b> <i>Resettlement Specialist 1- Pursat</i>	6.00		6.00		1.80		3.00		4.80	1.20	
KN19	<b>Mel Sophanna</b> <i>Resettlement Specialist 2- Kampon Chhnang</i>	18.00		18.00		-		-		-	18.00	
KN20	<b>Chea Mong</b> <i>Environment Specialist</i>	12.00		12.00		-		1.97		1.97	10.03	
KN21	<b>Ouk Monyroath</b> <i>Financial Management/Accounting Specialist</i>	60.00		60.00		-		-		-	60.00	
KN22	<b>Bun Sangvar</b> <i>Procurement Specialist</i>	24.00		24.00		-		-		-	24.00	
KN23	<b>Chan Vannak</b> <i>Municipal Finance/Tariff/Economic Specialist</i>	24.00		24.00		1.60		3.00		4.60	19.40	
KN24	<b>Houth Ratanak</b> <i>Human Resource/Training Coordinator</i>	24.00		24.00		-		-		-	24.00	
	<b>Subtotal Key Expert (National)</b>			<b>428.00</b>		<b>16.54</b>		<b>27.44</b>		<b>43.98</b>	<b>384.02</b>	
	<b>Total Remuneration (International + National)</b>			<b>506.00</b>		<b>25.65</b>		<b>33.11</b>		<b>58.76</b>	<b>447.24</b>	

<b>Annex 6 : Compliance with Loan Covenants</b>
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Ref	COVENANT	STATUS	ACTIONS	REMARKS
<b>Covenants in the Loan Agreement</b>				
Sched 5, para 2	<b>Tonle Sap Urban Areas Development Framework. Within 18 months of the Effective Date, the Borrower shall ensure the adoption of the Tonle Sap Urban Areas Development Framework,</b> an urban planning document that guides sustainable and climate resilient infrastructure development and growth of urban areas in the Tonle Sap basin.	Due in September 2017.  Under review by Under Secretary of State.	Prakas to be adopted following further review by Secretary of State, Minister MPWT.	Adoption is pending.
Sched 5, para 3	<b>Roadmap for Establishing Urban Service Units: Within 12 months of the Effective Date,</b> the Borrower shall ensure, and cause the Project Executing Agency to ensure, that the plans for establishing semi-autonomous USUs within the municipalities of Kampong Chhnang and Pursat are in place, including relevant draft ministerial <u>prakas (or ministerial decisions) to be signed by MPWT</u> for the establishment of USUs, its board of directors (or its equivalent), staffing requirements, human resource recruitment plan, office location, reporting responsibilities, financial management and audit requirements, good governance actions, assets transfer, and <u>timeline and process of conversion from a PIU to a USU.</u>	Due by 02 March 2017. <b>Non-compliant</b>	Ministerial Prakas (103 PRK/SK for Pursat and 104 PRK/SK for Kampong Chhnang), issued on 29 March 2017, establishes the Ministry's commitment for formally establishing a self-financed "wastewater and solid waste management unit in each of the municipalities.	Municipalities are not aware of the Ministerial Prakas 103 and 104. and no further action for establishment of the USUs have been taken, this mainly because the CS03 consultancy package could not be awarded. It has so far not been possible to include the TOR of this package under the PMIS.
Sched 5, para 4	<b>Environmental Sanitation Fees. Within 18 months of the Effective Date,</b> the Borrower shall ensure, and cause the Project Executing Agency to ensure, that each USU conducts a <b>review of existing Environmental Sanitation Fees</b> levied in the municipalities of Kampong Chhnang and Pursat and completes a <b>feasibility study on levying Environmental Sanitation Fees that recovers operations and maintenance costs and gradual depreciation</b> of solid waste management, flood control and drainage, taking into account affordability for the poor.	Due in September 2017. <b>Non-compliant</b>	Review ongoing under PMIS. In light of the scheduling of other activities related to the construction of solid waste and waste water/drainage infrastructure the date for the establishment of an environmental sanitation fee was premature	Studies on environmental sanitation fees that would ensure O&M cost recovery and gradual depreciation cost will be completed in the 2 <sup>nd</sup> quarter of 2018. However initial assessments have revealed that self-financing of wastewater and SWM will be very difficult
Sched 5, para 5	<b>Project Performance Monitoring and Evaluation.</b> Within 18 months of the Effective Date, the Borrower shall ensure, and cause the Project Executing Agency to ensure, that a project performance monitoring and evaluation is established, acceptable to ADB, to monitor and evaluate the Project performance during implementation.	Due in September 2017	Project Performance Monitoring is Ongoing, but a uniform data collection and retrieval system has to be developed	Since multiple consultant teams are involved in the implementation of the project responsibilities for and coordination of data collection will need proper coordination. And possibly the development of an online data collection system

<p><b>Sched 5, para 6</b></p>	<p><b>Environmental Decommissioning of Open Dumpsites.</b> 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.</p>	<p>Not yet due</p>	<p>The existing open dumpsites are mainly located on private land owned or leased by the SWM contractors. The legal implications of closing these private dumpsites with public funds still have to be explored</p>	<p>It is proposed to add a national legal specialist to the PIMS team for assessment of legal issues with regard to closing private dumpsites</p>
<p><b>Sched 5, para 7</b></p>	<p><b>Plan for Climate Change Adaptation. Within 36 months of the Effective Date,</b> the Borrower shall ensure that the Project Executing Agency has adopted the plan for climate change adaptation in urban areas around the Tonle Sap and revised building codes.</p>	<p>Not yet due.</p>		
<p><b>Sched 5, para 8</b></p>	<p><b>Counterpart Funds.</b> The Borrower shall ensure that all counterpart funds necessary for the Project is provided on a timely basis.</p>	<p>Ongoing.</p>		
<p><b>Sched 5, para 9</b></p>	<p><b>Environment.</b> 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 source.</p>	<p>Ongoing.</p>	<p>Preparatory activities are ongoing for updating the subproject IEEs and the preparation of the EMPs, as well as for the preparation of the government mandates IEAEs to be prepared by an independent licensed firm.</p>	<p>Updating of IEEs and preparation of EMP can only be done after the detailed designs have been substantially completed. It is expected that the detailed designs for the sanitary landfills will be completed by April 2018</p>
<p><b>Sched 5, para 10</b></p>	<p><b>Land Acquisition and Involuntary Resettlement.</b> 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>Resettlement and land acquisition for the construction of the flood embankment, landfill facilities and drainage improvement is being brought in compliance with</p>	<p>Recruitment of external monitoring organization to monitor implementation of the RPs to be undertaken by the IRC.</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> <p>(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;</p> <p>(b) compensation and other entitlements have been provided to affected people in accordance with the RPs; and</p> <p>(c) a comprehensive income and livelihood improvement program has been put in place in accordance with the RPs.</p>	<p>the required steps as per ADB SPS (2009) This covers the AH who were relocated to the new resettlement area in the first half of 2017, but it is not clear if this requirement would also apply to the HH on floating houses who were removed from mooring along the proposed embankment between September and November 2015</p>	<p>GDR is conducting a DMS of the AH located and already moved from the Kampong Chhnang Flood Embankment alignment. This includes conducting consultations with AH and collecting the DMS and socio-economic profile of the AHs and develop a plan to compensate them retroactively in accordance with ADB SPS (2009). GRD is coordinating with the PMU and the PMIS on the ongoing activities</p>	<p>Preparation of the DMS under responsibility of the GDR is ongoing for the AH in the alignment of the flood protection embankment between the tourist port and the new port and in a section where the tourist port access connects with the new embankment.</p>
<p><b>Sched 5, para 11</b></p>	<p><b>Indigenous Peoples.</b> 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>	<p>Not yet due</p>		
<p><b>Sched 5, para 12</b></p>	<p><b>Human and Financial Resources to Implement Safeguards Requirements.</b> 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.</p>	<p>Not yet due</p>		
<p><b>Sched 5, para 13</b></p>	<p><b>Safeguards – Related Provisions in Bidding Documents and Works Contracts.</b> 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>	<p>Not yet due</p>		

	(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.			
<b>Sched 5, para 15</b>	<b>Safeguards Monitoring and Reporting.</b> The Borrower shall ensure, and cause the Project Executing Agency to do the following:	Being brought in compliance	External monitoring organization to be recruited by GDR	To be recruited
	(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 semi-annual 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;			
	(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			
	(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><b>Sched 5, para 16</b></p>	<p><b>Gender and Development.</b> The Borrower shall ensure, and cause the Project Executing Agency to ensure, that (a) the GAP is implemented in accordance with its terms; (b) the bidding documents and contracts include relevant provisions for contractors to comply with the measures set forth in the GAP; (c) adequate resources are allocated for implementation of the GAP; (d) progress on implementation of the GAP, including progress toward achieving key gender outcome and output targets, are regularly monitored and reported to ADB; and (e) key gender outcome and output targets including, but not limited to, 30% of staff in the PMU and PIUs and 20% of staff of USUs shall be composed of women.</p>	<p>Ongoing.</p>	<p>This quarterly report includes the status of compliance with the Gender Action Plan.</p>	
<p><b>Sched 5, para 17</b></p>	<p><b>Labor.</b> The Borrower shall ensure, and cause the Project Executing Agency to ensure (i) compliance with all applicable labor laws of the Borrower on the prohibition of child and forced labor; (ii) giving of equal pay for equal work regardless of gender, ethnicity or social group; and (iii) dissemination of information on sexually transmitted diseases (including HIV/AIDS) and human trafficking to sub-contractors/employees and local communities surrounding the Project construction sites.</p>	<p>Ongoing</p>		
<p><b>Sched 5, para 18</b></p>	<p><b>Governance and Anticorruption.</b> The Borrower, the Project Executing Agency and the Project Implementing Agencies shall (a) comply with ADB's Anticorruption Policy (1998, as amended to date) and acknowledge that ADB reserves the right to investigate directly, or through its agents, any alleged corrupt, fraudulent, collusive or coercive practice relating to the Project; and (b) cooperate with any such investigation and extend all necessary assistance for satisfactory completion of such investigation.</p>	<p>Ongoing</p>		
	<p>The Borrower, the Project Executing Agency and the Project Implementing Agencies shall ensure that the anticorruption provisions acceptable to ADB are included in all bidding documents and contracts, including provisions specifying the right of ADB to audit and examine the records and accounts of the executing and implementing agencies and all contractors, suppliers, consultants, and other service providers as they relate to the Project.</p>	<p>Ongoing</p>		
<p><b>Sched 5, para 19</b></p>	<p><b>Prohibited List of Investments.</b> The Borrower shall ensure that no proceeds of the Loan are used to finance any activity included in the list of prohibited investment activities provided in Appendix 5 of the SPS.</p>	<p>Ongoing</p>		

**Annex 7 : Maps**

**Fig. 1: Short Low Cost Flood Protection Embankment**



Temporary Embankment for Protection of the Resettlement Area

Area reserved for future Urban and Commercial Development

Proposed Drainage Canal

Drainage Outflow Structure in Embankment

New Wide Embankment (allows for future river front development)

New Flood Protection Embankment

Reconstruction of Existing Embankment

New Embankment Connecting Existing Embankment with Road Embankment

Strengthening Existing Road Embankment

0 500 1,000 2,000 Meters



**Fig. 2: Variant Low Cost Flood Protection Embankment with Extension to the North**



**Annex 8 : Recommendations for Resettlement and Social Safeguards  
Compliance**

November 2017

## **CAM: Integrated Environmental Management in the Tonle Sap Basin**

## ABBREVIATIONS

ADB	–	Asian Development Bank
DMS	–	Detailed measurement survey
IOL	–	Inventory of losses
IRC	–	Inter-ministerial Resettlement Committee
M&E	–	Monitoring and evaluation
MEF	–	Ministry of Economy and Finance
MPWT	–	Ministry of Public Works and Transport
NR	–	National Road
PDPWT	–	Provincial Department of Public Works and Transport
PIB	–	Public Information Brochure
PIU		Project Implementation Unit
PMU	–	Project Management Unit
RCS	–	Replacement Cost Study
ROW	–	Right-of-Way
SES	–	Socioeconomic survey
TA	–	Technical Assistance
TBC	–	To be confirmed

## NOTE

In this report, “\$” refers to United States dollars unless otherwise stated.

## DEFINITION OF TERMS

Affected Household/ Affected People	–	Persons who are physically displaced (relocation, loss of residential land, or loss of shelter) and/or economically displaced (loss of land, assets, access to assets, income sources, or means of livelihood) as a result of (i) involuntary expropriation of land, or (ii) involuntary restrictions on land use or on access to legally designated parks and protected areas. In the case of affected household, it includes all members residing under one roof and operating as a single economic unit, who are adversely affected by a project or any of its components.
Compensation	-	Payment made in cash or in kind to AHs at replacement cost for assets, resources or income acquired or adversely affected by the project.
Corridor of Impact	-	This is the area that will be cleared of all structures and obstructions.
Cut-off date	–	This refers to the date prior to which the occupation or use of the project area makes residents/users of the same eligible to be categorised as affected people. Persons not covered in the census are not eligible for compensation and other entitlements, unless they can show proof that (i) they have been inadvertently missed out during the census and the inventory of losses (IOL); or (ii) they have lawfully acquired the affected assets following completion of the census and the IOL and prior to the conduct of the detailed measurement survey (DMS).
Detailed Measurement Survey	–	This activity involves the finalization and/or validation of the results of the IOL, severity of impacts, and list of affected people earlier done during resettlement plan preparation. The final cost of resettlement can be determined following completion of the DMS
Entitlement	–	Refers to a range of measures comprising compensation, income restoration support, transfer assistance, income substitution, relocation support, etc. which are due to the affected people, depending on the type and severity of their losses, to restore their economic and social base.
Income restoration	–	This is the re-establishment of sources of income and livelihood of the affected households.
Inventory of Losses	–	This is the process where all fixed assets (i.e. lands used for residence, commerce, agriculture, including ponds; dwelling units; stalls and shops; secondary structures, such as fences, tombs, wells; trees with commercial value; etc.) and sources of income and livelihood inside the Project right-of-way are identified, measured, their owners identified, their exact location pinpointed, and their replacement costs calculated. Additionally, the severity of impact to the affected assets and the severity of impact to the livelihood and productive capacity of affected people will be determined.
Involuntary Resettlement	–	It is the displacement of people from their homes, assets, sources of income and employment on account of the project undertaken by the Royal Government of Cambodia (RGC). Involuntary resettlement may result in any or a combination of the following: loss of land, abode and other fixed assets, loss of income and/or employment, relocation, separation of family members, disintegration of communities, etc. Unless appropriate and adequate mitigation measures are carried out, involuntary resettlement will result to further hardship and impoverishment among the AHs, especially the marginal sectors of

		society (see definition of “vulnerable groups”). These adverse social impacts of development projects are often borne by AHs not of their own desire but involuntarily.
Land acquisition	–	Refers to the process whereby an individual, household, firm or private institution is compelled by a public agency to alienate all or part of the land it owns or possesses to the ownership and possession of that agency for public purposes in return for compensation at replacement costs.
Rehabilitation		Additional support provided to AHs losing productive assets, incomes, employment or sources of living, to supplement payment of compensation for acquired assets, in order to achieve, at a minimum, full restoration of living standards and quality of life. In this project, this term is synonymous with “Income Restoration”. It means the process to restore income earning capacity, production levels and living standards in a longer term. Rehabilitation measures are provided in the entitlement matrix as an integral part of the entitlements.
Relocation	–	This is the physical displacement of project-affected persons(s) from her/his pre-project place of residence and/or business.
Replacement Cost		Means the amount in cash or in kind needed to replace an asset in its existing condition, without deduction of transaction costs or for any material salvaged, at prevailing market value, or its nearest equivalent, at the time of compensation payment. The replacement rates of affected assets as determined during the conduct of the replacement cost study (RCS) will be updated to reflect prevailing market values at the time of payment of compensation.
Replacement Cost Study	–	This refers to the process involved in determining replacement costs of affected assets based on empirical data.
Resettlement Plan	–	This is a time-bound action plan with budget, setting out the resettlement objectives and strategies, entitlements, activities and responsibilities, resettlement monitoring, and resettlement evaluation.
Right-of-Way	–	The right of way (ROW) is a publicly available and government-owned strip of land following a centreline (such as for roads, canals, etc.) providing an area of access. The Project will use the entire area where necessary. In case part of the ROW has been encroached upon by informal occupiers/formal users (for example people now living, doing business, or cultivating land within the ROW), the project intends to adopt a COI within the ROW to avoid adverse land acquisition and resettlement related impacts.
Severely affected households	–	This refers to affected households who will (i) lose 10% or more of their total productive land and/or assets, (ii) have to relocate; and/or (iii) lose 10% or more of their total income sources due to the Project.
Vulnerable groups	–	These are distinct groups of people who might suffer disproportionately or face the risk of being further marginalized by the effects of resettlement and specifically include: (i) households headed by women with dependents, (ii) disabled household heads, (iii) households falling under the generally accepted indicator for poverty, (iv) children and the elderly households who are landless and with no other means of support; (v) landless households; (vi) indigenous peoples or ethnic minorities

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## I. EXECUTIVE SUMMARY

1. Kampong Chhnang embankment project is currently in non-compliance with ADB SPS (2009) due to resettlement activities started by the Provincial Authorities prior to the approval of the updated Resettlement Plan (RP). Corrective action is being implemented to reach full compliance, which started in the beginning of October 2017. The embankment alignment and detailed engineering design (DED) has not been completed and approved, but it is obvious that the original PPTA design would cause severe and adverse resettlement and social impacts. Pending on the approval of the improved alternative alignment, DED and public consultations with affected households (AHs) the extent of LAR can be established, appropriate mitigation and compensation measures designed, and resettlement plan updated.

2. Both Kampong Chhnang and Pursat have landfill projects, which have similar issues in terms of AHs located along the access roads and within 1km radius of the landfill site, based on recommendations from MOE guidelines on landfill site selection. In both towns, there is a need for securing livelihoods for current waste pickers on the existing landfill sites. Based on public consultations, mitigation and compensation measures will be developed along with a livelihood and income restoration program (LIRP) for the vulnerable and severely affected households as well as the waste pickers.

3. Pursat drainage project alignment and DED are being prepared, hence detailed measurement survey (DMS), socio-economic survey (SES) and updating of the RP is currently on hold. There are potentially considerable social and environmental issues with water quality along the irrigation canal, where effluent from the drainage, including sewage, will outflow from the drainage project. The irrigation canal is under MOWRAM responsibility, so inter-ministerial agreement as well as comprehensive public consultations and DMS/SES with affected households are needed prior to updating of the RP.

4. In order to facilitate delays in DEDs and implementation of the construction projects with approved designs the PMIS recommends to separate each sub-project into its own uRP's as: (i) Kampong Chhnang embankment; (ii) Kampong Chhnang landfill; (iii) Pursat drainage; and (iv) Pursat landfill sub-projects.

5. It is expected that the resettlement budget will considerably increase from the ones estimated in the PPTA resettlement reports (for Kampong Chhnang PPTA figure is 203,618.84 USD and for Pursat 53,774.69 USD). This is mainly due to the PPTA underestimating the extent of land acquisition and resettlement (LAR), especially with Kampong Chhnang embankment, due to the alignment and design features. Secondly, PPTA was done prior to the new MOE guidelines (2016) on landfill site selection, which set a 1km zone around landfill sites where housing should not be allowed. Depending on how many AHs prefer relocation over local mitigation measures the resettlement budget will significantly increase also for both of the landfills sub-projects.

## II. INTRODUCTION

6. The Integrated Urban Environmental Management in the Tonle Sap Basin Project will enhance the urban environment, improve public health, and contribute to better quality, coverage and reliability of services to over 100,000 residents in the two towns 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, organizational development and capacity building.

7. The outcome of project investments will be improved urban environment, climate change resilience and urban management in the towns around the Tonle Sap. This will in turn: (i) ensure that Kampong Chhnang and Pursat can support and benefit from economic growth along the GMS Southern Economic Corridor, (ii) stimulate improved economic competitiveness of the urban areas, and (iii) enhance the sustainability of socio-economic gains. The outcome will include enhanced quality, coverage, and reliability of drainage,

wastewater, solid waste management, and local road access, and reduced incidence of flooding from Tonle Sap and due to storm water.

8. The basic compensation and rehabilitation principles adopted in this project LAR activities are: (i) land acquisition is minimized if avoidance is not possible; (ii) compensation and other assistance, as described in the entitlement matrix, will be provided to help ensure that affected persons are able to maintain, if not improve, their pre-Project living standards; (iii) affected persons are fully informed and consulted on compensation options; (iv) the project resettlement policy will be equally apply to women and men; (v) lack of formal title will not be a bar to compensation and rehabilitation for non-land affected assets; (vi) particular attention will be extended to vulnerable groups, such as the poor, and households headed by women and the elderly with no other social support; (vii) resettlement is planned and implemented as an integral part of the project and that the budget for resettlement is part of Project costs; and, (viii) affected persons are not displaced from assets until they are fully compensated for the same.

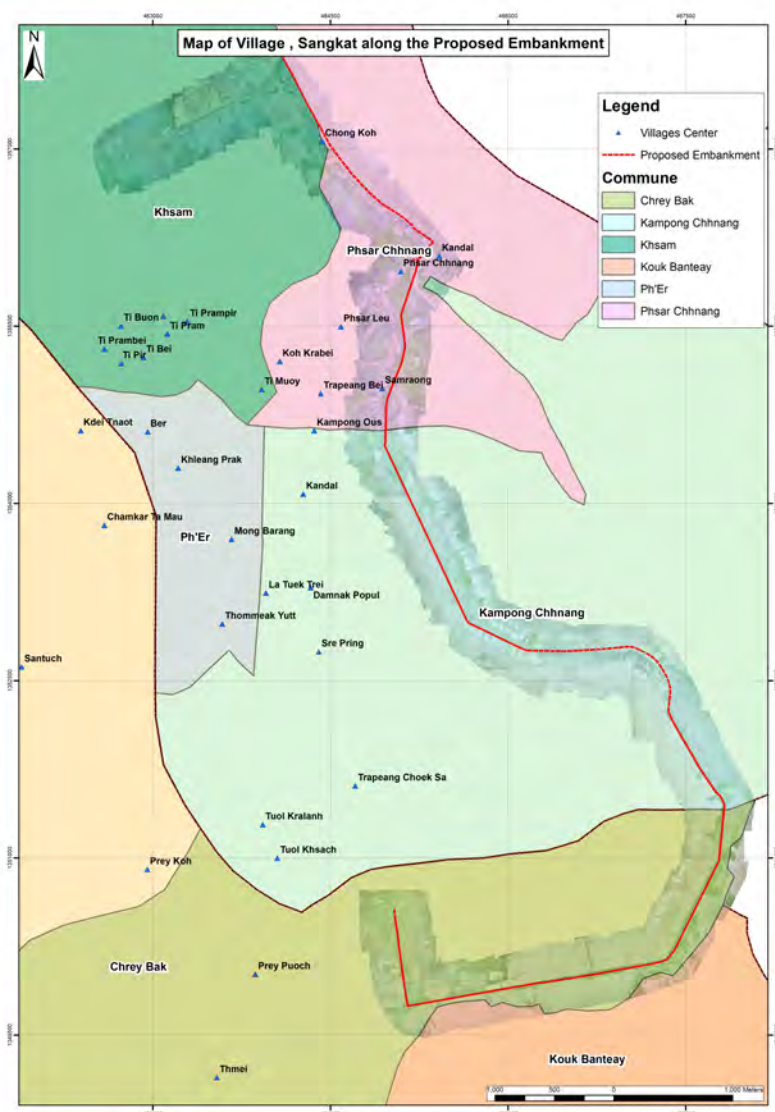
9. The MPWT, through the Project Management Unit (PMU), and the IRC, through the Resettlement Department of the Ministry of Economy and Finance (RD-MEF), have overall responsibility for preparing, updating, implementing and financing the LAR activities. A Project Implementation Unit (PIU) will be set up in both Kampong Chhnang and Pursat to work with the IRC in guiding, supporting and endorsing the work of Provincial Resettlement Sub-Committees (PRSC) and working groups for all activities related to planning and implementing LAR. At the local government level, the PRSC, through Resettlement Sub-Committee Working Groups (RSWG) at the provincial, municipal and sangkat levels, assists MPWT and IRC.

10. The PMU is the Project's internal monitor, while an external monitoring organization will be hired by IRC to conduct external monitoring and evaluation (M&E). During resettlement plan implementation, which is expected to begin at the time of the DMS, quarterly internal monitoring reports and semi-annual external monitoring reports will be submitted to ADB. Within one year after the completion of resettlement plan implementation, a resettlement completion report will be submitted to ADB that includes lessons learned to improve resettlement work in future projects.

### **III. KAMPONG CHHNANG FLOOD EMBANKMENT SUB-PROJECT**

11. According to the Provincial Authorities the right-of-way (ROW) for the current embankment is 50m, meaning land acquisition will be limited along this line, but structures and livelihoods are required to be compensated for. All the low-lying areas surrounding the river system are situated below the height level of the National Road 5 (NR5), causing them to fall under category of Zone 2 of Tonle Sap Biosphere Reserve (TSBR) jurisdiction (see map below). Within TSBR only agricultural activities are allowed, but change of land use is allowed by permission from the Royal Government of Cambodia (RGC).

**Figure 1:** Map of communes, villages and original embankment sections as based on PPTA



**A. Northern section (Chong Koh Village)**

12. The Provincial Authorities have already started in March 2017 the relocation process of the affected households (AHs) located in Chong Koh Village on the northern/eastern side of the dry-season road along the Tonle Sap natural river embankment (embankment project location between 11+000 and 13+000). The exact number of AHs is not confirmed as there can be several families living in each of the identified houses. Also, it is not confirmed whether all of the 210 AHs are AHs of the ADB financed embankment sub-project as the exact original location of each household is not confirmed and the final alignment has not been approved. This will be done during the DMS, scheduled to take place immediately after the floods have receded. Relocation and self-relocation has been halted to wait for conclusions from the project compliance review based on ADB SPS (2009).

13. As of beginning of November 2017, 157 AHs out of 210 AHs have agreed to move to the resettlement site, out of which 39 AHs have already relocated. Each AH will receive a 5m x 20m plot of land as part of the contract between AHs and the company developing the resettlement site, but need to pay within two years 1,000 USD for the cost of backfilling the land. After completion of the payment, they will receive land titles. The AHs relocated

already have dismantled their old houses on the river bank. 90 AH of these have been identified and re-contacted for verification purposes by the PRSC/RD-MEF. 107 AHs have already paid for the cost of backfilling (1,000 USD), and hence can obtain official land titles (hard titles) for the land plots immediately. There are at least 10 vulnerable (poor) AHs who have all agreed to relocate, but cannot pay for the 1,000 USD cost of backfilling, making them highly vulnerable.

14. 47 out of 210 AHs have agreed and already received funds from the Provincial Authorities for self-relocation. Each AH received between 400 and 1,000 USD / AH as lump sum. 4 AHs have not been paid yet though. 37 AHs have been identified and contacted for verification and contact details by PRSC/RD-MEF. It appears that most of the self-relocating HH still remain in the area as the peak season for fishing started in the beginning of October.

15. A final 6 out of 210 AHs have refused both options, either to move to resettlement site or self-relocate, as provided by the Province. Refusal is apparently mainly due to AHs requiring a higher price for relocation.

16. Majority of the households in this section of the embankment are Cham Muslim, with their main livelihoods in fishing.

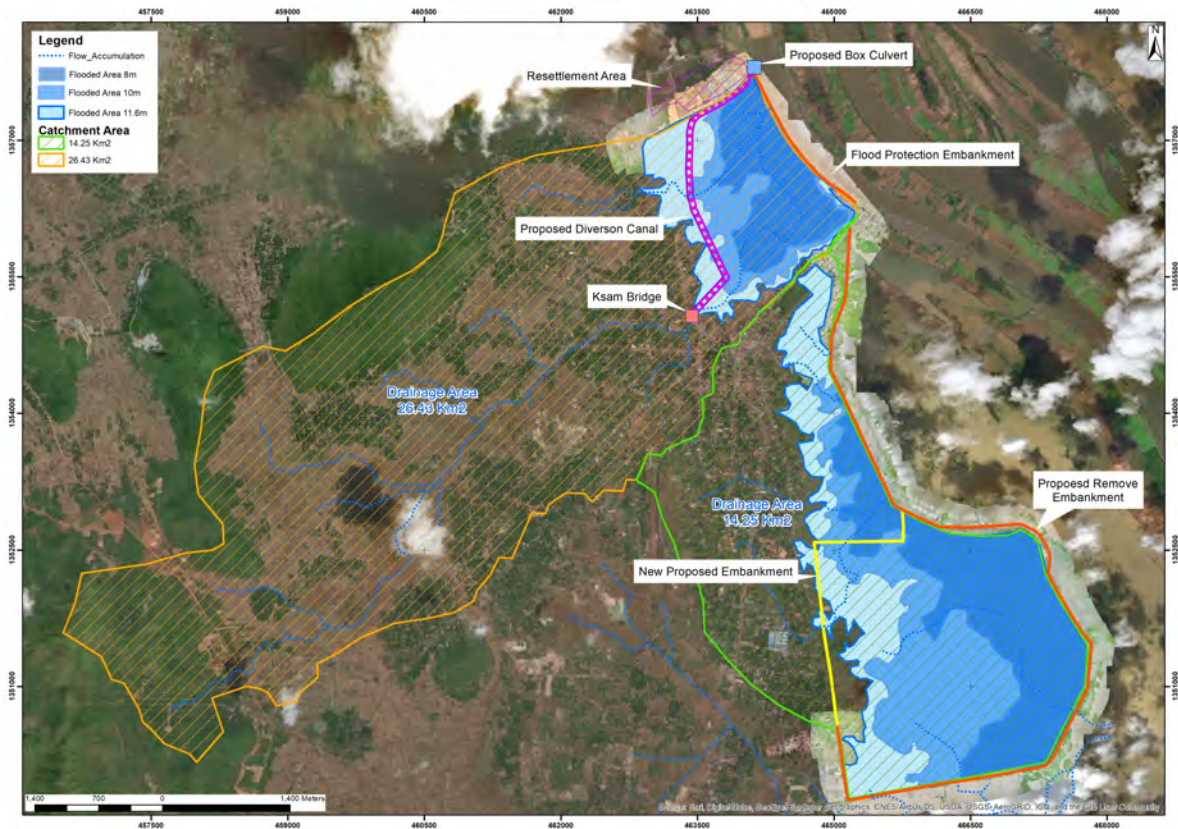
Table 1: Identified 210 Affected households for relocation (to be updated by GDR/MEF)

<b>Relocation option</b>	<b>AH</b>	<b>AP</b>	<b>Re-contacted by Province</b>	<b>Relocated</b>
Relocate to resettlement site	157	TBC	90	39
Self-relocate	47	TBC	37	43
Not-agreed	6	TBC		
<b>Total</b>	<b>210</b>	<b>TBC</b>	<b>127</b>	<b>82</b>

17. The houses in Chong Koh Village on the southwest side of the dry season access road are currently not to be relocated by the Provincial Authorities, and as such not recognized as AHs of the project. However, these HH are likely going to be severely affected by the flood embankment to be constructed between their houses and the river. First of all, this is likely to cause considerable flooding from rainfall from the sub-catchment draining through the area (see map below). The flooding is most likely exacerbated by the current JICA funded drainage project which will direct the storm water to the same area, as well as sewage. Drainage storm water will also have considerable amount of plastics and other solid wastes. It is expected that the lower lying areas where the households are located will be semi-permanently water logged, with no realistic options pumping or draining the water out during flooding season to the Tonle Sap River. Secondly, the embankment can permanently cut-off these HHs access to the river and key livelihood for many of them.

18. Based on remote sensing imagery calculation of rooftops there are anything between 100-160 AHs in the western side of the dry-season access road. It appears majority of the HHs are Cham Muslim. However, they have not been consulted about the project as of yet. Given the distance from the dry-season river bank these HHs are eligible for land titles (more than 50m from the dry season river edge), and have subsequently constructed higher quality and category of housing. The area also has large CCP party office and two mosques. The extent on the impact on the HHs will be depending on the detailed engineering design solutions, e.g. re-directing the natural stream and drainage storm water out of the area to be protected from river flooding by the embankment.

**Figure 2:** Map of alternative alignment, and predicted flooding inside original embankment



## B. Tourist port section

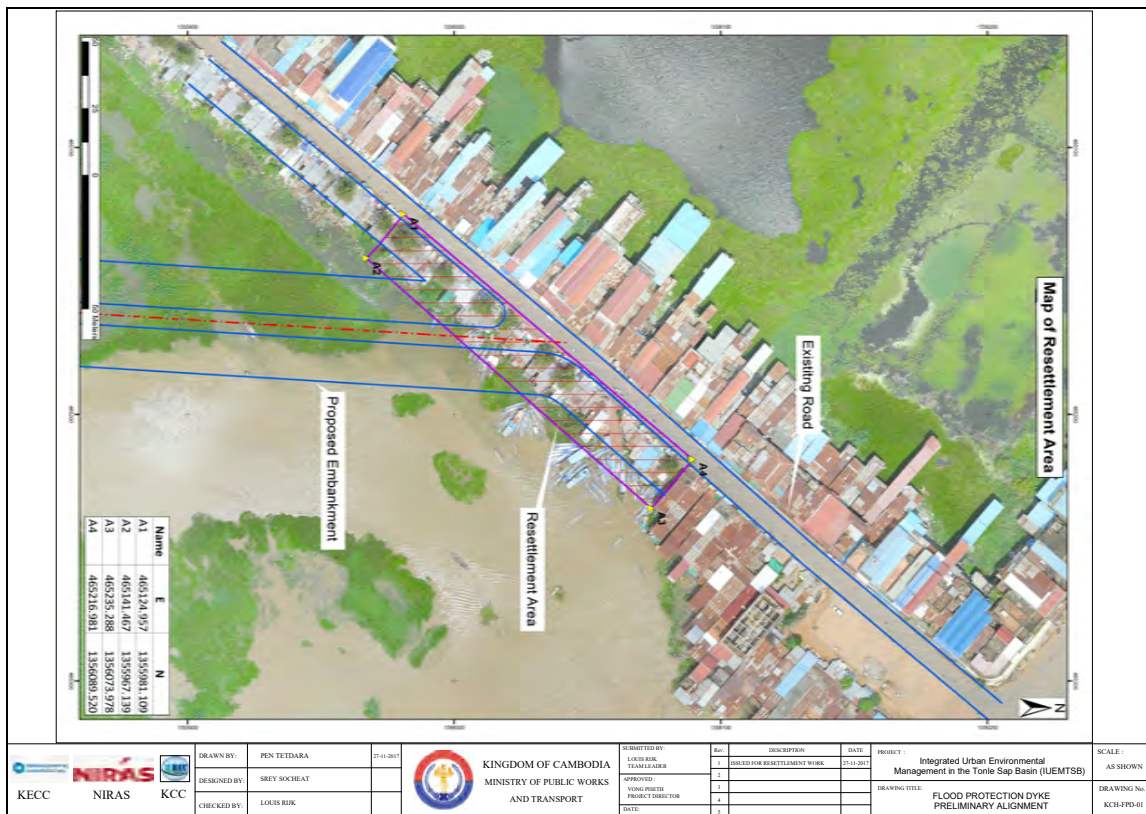
19. On the southern side of the tourist port there are 52 AHs identified along the embankment between locations 10+750 to 10+950 in Phsar Chhnang village. The AHs have occupied the area since late 1980s, and it was designated as a market area in the 1990's. Four (4) of these AHs have hard land titles and the rest soft titles. However, many of the houses seem to be located less than 50 m from the dry-season river bank as they are built on stilts over the current embankment illegally. Majority of the AHs are Khmer.

20. Public consultation with the 52 AHs took place on 10th November 2017. Generally, the AHs refused relocation and wanted the project to construct the embankment as agreed during the PPTA (in the wetland behind the houses). Initial reference price for a house in the area was given between 40,000 and 50,000 USD. Hence, it is estimated that the cost of resettlement for this area would be high, with very low public acceptance.

21. In order to minimize the LAR impact of the project an alignment design change was agreed by PMU. The new alignment does not impact the 52 AHs (see map below), except for 35-40 AHs (small market stalls) located further west from the 52 AHs at the point of connection of the embankment to the existing road.

22. West of the tourist port there is an access road and causeway leading to the island/peninsula with Kandal Village. It is important that this is not interrupted with the embankment construction, and ideal design is to provide all-season access road to the village while maintaining adequate water flow capacity through the channel.

**Figure 3: Map of the new design for tourist port area embankment**

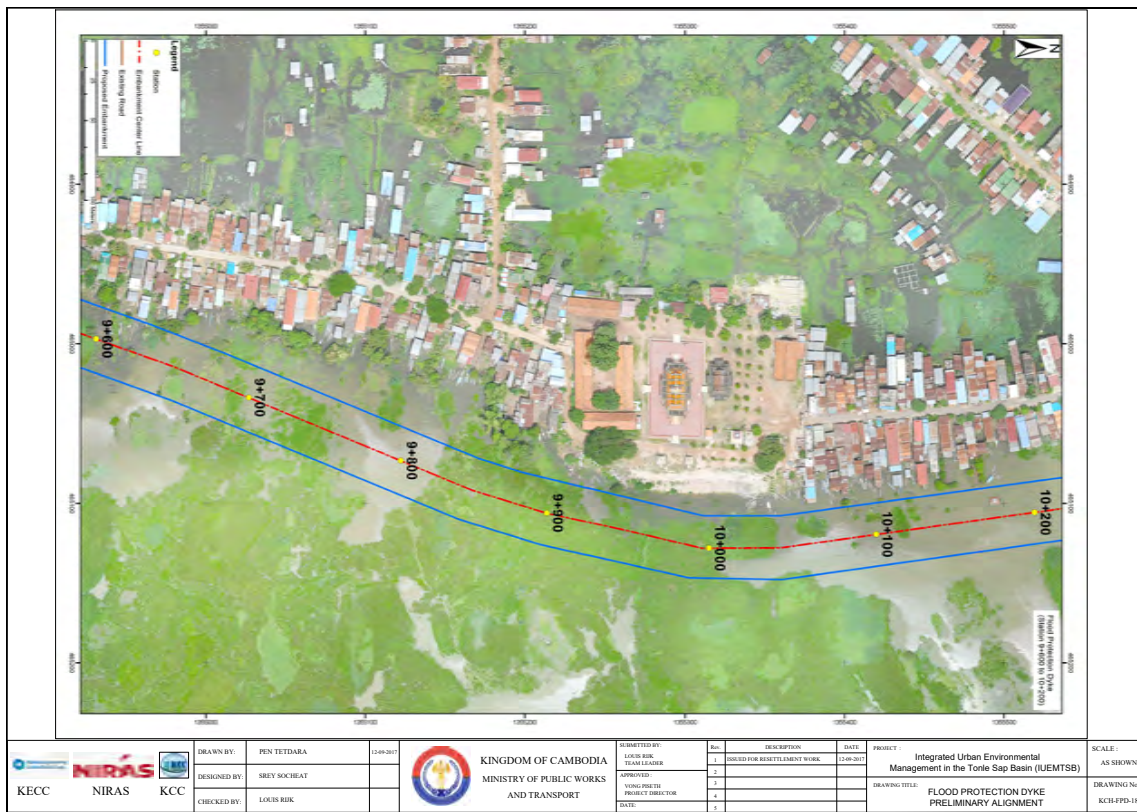


**C. Samraong Village riverside settlement section**

23. Between embankment locations 9+250 to 10+750, in Samraong Village, the embankment will be constructed on the wetland in front of all the houses on the existing embankment to avoid LAR. However, all of the houses have been constructed overhanging the embankment with supporting stilts. During construction, and subsequent backfilling of the gap between the embankments with sand to avoid creation of area of standing waste water, there is a high risk of collapse of these houses, especially the ones with wooden stilts. Therefore, if the embankment is constructed with the planned alignment there is a need to mitigate the impact of construction and reinforce the support structures of the houses with concrete pillars, as well as backfill the gap between the embankments. It is also important for maintaining access for the AHs to their fishing boats along the river with construction of walkways along the embankment.

24. Majority of the AHs are Khmer. They have not been consulted by the Provincial Authorities regarding the project as of yet. During the dry season the wetland is used for small scale agriculture, such as home gardens, and during rainy season for fishing using traditional arrow-head fish traps. Both will be affected by the construction of embankment, and the loss of livelihoods is required to be compensated.

**Figure 4:** Map of affected area and houses for access and foundation structures



#### D. Southern section (Kampong Chhnang and Chrey Bak communes)

25. It appears the Southern part, between embankment locations 0+000 to 9+250, some of the land owners were issued land titles in 2001. However, land titles have not been issued since for any below the height level of the National Road 5 due to TSBR, but land use is allowed, land can be sold and with the Government permission land use can be changed. The land is owned and used by farmers mainly from Kampong Chhnang town. Currently most of them can get two harvest per year, while remainder of the year when the area is flooded they take part-time work elsewhere (such as motodop drivers etc). According to consultations organized by the Provincial Authorities during the PPTA the farmers generally were happy about the embankment sub-project as it will ease flooding and increase the value of the land.

26. Similarly, as in the northern section of the embankment, natural water flow from the sub-catchment is likely to cause flooding and water logging especially in lower laying areas further in the east. Drainage will be impossible to organise during the rainy season when the river will be at a high level, and difficult also otherwise due to need of a comprehensive drainage network.

27. Construction of the embankment along the original alignment could affect some semi-permanent structures and livelihoods due to paddy fields. In addition, access to livelihoods, mainly agriculture and fisheries, could be affected by the embankment if adequate number of access points on both sides of the embankment are not provided.

28. Due to the potential problem with flooding and water logging an alternative alignment has been prepared for review. The alternative follows the existing south-north road. Re-construction the road to a slightly higher elevation would be straightforward, and as the road alignment is fairly wide LAR impact would be limited.

## **E. Resettlement site (Village # 6, Sangkat Khsam)**

29. Resettlement site is located northwest of 13+000 position of the embankment aside a public-private investment for a market place and residential area mainly intended for resettled AHs. The total area of the site is 17.5 ha, out of which 5 ha is reserved for the market area and public infrastructure. The area has plots to house 525 AHs. The sub-decree for establishment of the site was signed on March 27, 2016 (see Annex 1). However, no EIA or IEE was completed. The site has been given as a concession to a private company (Ly Leang Kim LKL Construction) to develop. The plots on the land are also for sale, in addition to the use as a resettlement site.

30. The site construction started in 2016 and has now been completed, except for areas where the backfilling was not done high enough and are water logged during the rainy season. The plan for the development of this area was made prior to the ADB embankment project implementation started in 2017. Borrow area for the backfilling is located less than two km west of the resettlement site, and is also located on Zone 2 of TSBP. Government permission was granted to turn the agricultural area into commercial fish ponds. There are no resettlement issues at borrow sites as they are all located on private land.

31. The resettlement site is going to be equipped with roads, electricity, water supply, drainage, health station and school. However, completion of the installation of the basic infrastructure has been very slow, and both paved roads and drainage are still completely missing. Also, health centre and school are not operational yet with staff, as they are waiting for main relocation of the AHs to take place first. Hence, at the moment the closest school is 0.5km away and health station 2km from the site. For the Cham AHs, the nearest mosque is about 1km and second one (Masjid Kampong Chhnang) about 2.2km away from the resettlement site, but both are surrounded by floods and hence inaccessible except by boat during the flooding.

32. The resettlement site is lacking waste water treatment for sewerage and sanitation services and facilities. Drainage is planned to be kept separate from wastewater treatment and sewerage, which is expected to be constructed during Tonle Sap 2 project. Sanitation is at least at first planned to be soak-away system, which could later be linked to wastewater system once the treatment plant is built.

33. The resettlement site is connected by a road to the new public fishing port (approximately 500m distance from the resettlement site), but it is unclear if all the boats of the relocated AHs can fit into it. Theoretically, the port will allow fisherman families to continue with their livelihoods fairly uninterrupted if they have cost-free access to it. The distance from the houses will probably require the AHs to find a solution for security, especially at night time. The new fishing port is of concrete construction and can withstand 11m high floods.

34. The land plots are available for free for relocated AHs, but with 1,000 USD cost for backfilling with two-year repayment period (see Annex 2). The Provincial Authorities have no plan set for situation where AHs default on the 1,000 USD payment after the two years, or sell before the two-years is full. Already, 10 AHs have been identified who cannot afford to pay the 1,000 USD even in the two years. All of the AHs will receive official land title once the loan for backfilling has been paid. The land plots are also available for purchase by anyone for 3,400 USD for land and 1,000 USD for backfilling with two-year repayment period, and hence not only designated to the AHs agreeing for relocation.

**Figure 5: Maps of resettlement area design**



*Recommendations for ADB SPS compliance*

- Detailed Engineering Design (DED) should consider the following design changes: a) re-alignment of the embankment to avoid unnecessary LAR and flooding of the land and houses from behind the embankment; b) reduce the height of the embankment to a reasonable expected peak flood level to avoid impact on 52 AHs at tourist port and narrow the footprint of the embankment along the entire alignment for reduced livelihood and LAR impact; c) re-direct stream flow and drainage water away from areas where they would cause flooding of property; d) provide adequate number of access points for both sides of the embankment for AP to continue with their livelihoods; e) strengthen foundations of stilted houses near embankment construction, or where backfilling with sand will take place; and f) provide a road / causeway to Kandal village where the new embankment otherwise would cut-off their dry season access road.
- Finalise construction of the resettlement site public infrastructure as soon as possible to service the AHs already relocated there.
- Organise public consultations with: a) AHs at Chong Koh Village potentially flooded by the above sub-catchment; b) households in Kandal village on all-season access road options; c) AHs Samraong Village on project impact on house foundations and access to river; d) Kampong Chhnang and Chrey Bak communes on embankment alignment and access to livelihoods; and e) Vietnamese floating community on sharing facilities and access to relocation sites. Further, it is essential to continue consultations with the 210 AHs whose relocated has already started by the Province Authorities.
- Undertake DMS/SES once embankment alignment is finalised, first with AHs not currently flooded to be followed once the floods recede with AHs now flooded. Distribute updated Public Information Booklet to all AHs.

- Compensate all AHs for any loss of structures at replacement cost, but including right for AHs to salvage materials from their existing structures.
- Provide all relocated AHs transfer (including transport and rental allowance) and life stabilization allowance. Provide all AHs compensation for loss of income and livelihoods.
- Identify all vulnerable and severely affected HH, including those living with HIV/AIDS. Provide additional allowances for vulnerable and severely affected households. Ensure relocated AHs, especially vulnerable and severely affected, avoid falling into debt due to relocation.
- Facilitate house building at relocation site before actual physical relocation. Provide soak-away toilets for all relocated families who qualify as IDPoor1 or IDPoor2 under the project NGO component (component 4).
- Provide affordable public services for the relocated AHs, as well as land titles and new family books free-of-all-charges, and school changing for relocated children without additional charges. Also, provide cost-free access to fishing port facilities. Improved port facilities by adding water supply and separate toilets for men and women.
- Prepare LIRP, which includes vocational training and alternative livelihood options such as small vegetable gardens (provide seeds and training) and chicken raising (provide chickens, livestock training, as well as chicken flu awareness). Provide necessary tools, equipment and initial stock for AHs completing vocational training courses to start associated businesses. Follow up LIRP activities after initial training and provision of materials. Engage Provincial Vocational Training institute and Provincial Department of Woman Affairs in providing vocational training. For illiterate AHs provide access to literacy courses organised by the Provincial Education Department. Cooperate with Save the Children NGO in setting up a women's group in the resettlement area to improved livelihood and business possibilities for women as part of LIRP.
- During construction, ensure contractors are liable to: a) give preference on employing AHs, especially women, for construction work; b) provide equal salary to women and men; c) provide separate toilet facilities for women and men construction workers; and d) provide HIV/AIDS and health & safety awareness training to all workers.

#### IV. KAMPONG CHHNANG LANDFILL SUB-PROJECT

35. The selected new landfill site is situated partially on public and partially on private land. Private land has been acquired through negotiated land acquisition between the owners and MEF/GDR. The negotiated land acquisition has been completed, but 3rd party validation has not been done yet.

36. In the immediate vicinity of the landfill site there is 4 AHs within 250m. In addition to these, the 1km safety distance from the landfill site border as set by Ministry of Environment (MoE) guideline for the selection of landfill sites (2016) for residential housing will mean a much higher number of AHs can be affected by the project. Estimation from satellite imagery include two housing clusters with approximately 30-40 AHs, in addition to a Pagodas, schools and health centre within the radius of 3km to 5km safety zone (MoE, 2016) from the new landfill site. For example, the following Pagodas and Churches are within the safety zone: HaeMoon Church (2.5km), Wat Sovann Kirivann (2.7km), unnamed Pagoda (3km) and Wat Santuch (3.5km). There will be a need for LAR or mitigation measures as per the landfill Environmental Management Plan (EMP) for any AHs within the minimum distance set by MoE.

37. The new landfill site will be initially operated by the municipality, but they are trying to secure an investor for the landfill to operate waste sorting and recycling operations.

Waste collection from the town is done by both private company and municipality. It is not clear whether informal waste collectors are allowed access to the new landfill site.

38. There are 14 AHs involved in waste picking, however, the number of waste pickers is depending on the day and time of the day, in what appears to be part-time employment for some of the waste pickers.

*i. Recommendations for ADB SPS compliance*

- DED should consider the following design changes: a) locate the waste cells along the side of the hill within the landfill site to reduce wind speeds blowing over the open stored waste (due to the drag effect of the hill), while enabling moving the cells further away from the closest houses; b) plant two parallel rows of trees around the landfill site to block waste flying off, smell and flies; and c) construct a separate support building for waste pickers, with separate toilets for men and women, washing and cooking facilities with running water, first aid point, children's play area and shaded rest area.
- Organise public consultations and SES data collection with waste pickers at times when waste trucks are not arriving to the site, preferably in the early mornings, and separate consultations, DMS and SES with AHs living within 1 km of the landfill site.
- Complete 3rd party verification of the negotiated land acquisition.
- Provide AHs within 1 km radius option for relocation or mitigation measures, except to the direction where natural block / mitigation is provided by the hill. Compensate all relocating AHs for loss of land and structures at replacement cost, but including right for AHs to salvage materials from existing structures.
- Provide all relocated AHs transfer (including transport and rental allowance) and life stabilization allowance. Provide all AHs compensation for loss of income and livelihoods.
- Identify all vulnerable and severely affected HH, including those living with HIV/AIDS. Provide additional allowances for vulnerable and severely affected households. Ensure relocated AHs, especially vulnerable and severely affected, avoid falling into debt due to relocation.
- Prepare LIRP, which includes vocational training and alternative livelihood options such as small vegetable gardens (provide seeds and training) and chicken raising (provide chickens, livestock training, as well as chicken flu awareness). Provide necessary tools, equipment and initial stock for AHs completing vocational training courses to start businesses and trade. Follow up LIRP activities after initial training and provision of materials. Engage Provincial Vocational Training institute and Provincial Department of Woman Affairs in vocational training. For illiterate AHs provide access to literacy courses at the Provincial Education Department. Provide health & safety training, and safety equipment (boots and metal pickers) for the waste pickers continuing at the new landfill. Follow up LIRP activities after initial training and provision of materials.

## **V. PURSAT DRAINAGE SUB-PROJECT**

39. The main concern for resettlement and social development LAR is in northwest corner of the sub-project, in Sangkat Phteah Prey, where drainage is to link to the existing irrigation canal. There are households located on both sides of the irrigation canal (Kbal Hong Canal), which is planned in the PPTA to be used for drainage water outflow. The houses are built on the canal embankment, wholly or partially overhanging on top of the canal. In the PPTA plan a parallel drainage line to the irrigation canal is to be built, which can directly impact 42 AHs. LAR impact would also affect trees, structures, businesses and livelihoods. ROW for the irrigation canal according to the Provincial Authorities is 30m. None of these potential AHs have been consulted regarding the project.

40. Without the new parallel drainage line to the irrigation canal, and if the irrigation canal itself is not rehabilitated, the impact can be limited to only point-impact for outflow pipe connection to the irrigation canal. In this case LAR impact would be only on some structures, as it is assumed the houses in this location on the canal ROW are part of an informal settlement. If there is a need to rehabilitate the actual canal for active use, the LAR impact would be very high. Estimate based on satellite imagery interpretation is that between 90-140 AHs would be affected if the entire canal were to be rehabilitated from the Pursat River to the edge of the drainage system at the unused wastewater treatment plant. None of these potential AHs have been consulted regarding the project.

41. Part of the social development aspect of the drainage sub-project impact is the custom of households in the town to link household sewage overflow into the drainage network. Without appropriate treatment, and possibility of severe overflow during heavy rainfall events, this would have considerable impact on water quality and health of AHs along the irrigation canal. The irrigation canal water is being used by villagers on the northern side of the rice fields from the site. The irrigation canal water is used for all household activities like washing and bathing, in addition for being water source for irrigation and fishing. These villages do not have alternative water sources except for rainwater harvesting for drinking water. These villages have approximately 100 families. Pursat Provincial Authorities were clear that they need a lagoon based wastewater treatment plant instead of septic treatment plant, as it is difficult to build septic tanks in urban areas.

42. In Pursat town area key locations with need for improved drainage are around the market, while one traversing drainage line which has collapsed. These areas experience heavy flooding during rainfall events. The market area has several dozen affected street sellers, but the Provincial Authorities have agreed to organize a location for market vendors to continue selling during the construction period, if affected. However, the alternative site should be equipped with running water for washing facilities, separate toilets for women and men, and effective solid waste collection.

43. Other businesses, land use and secondary structures will also experience potential impact due to the project. However, this impact on e.g. shop eaves and shop operations along the drainage lines is not clear yet, but can be minimized by ensuring the construction company will notify the AHs well in advance and ensure access to houses and businesses during construction.

44. Public consultations have started already with Sangkat office organising events for the general public once or twice a month discussing all development projects in Pursat town. Drainage project has been highlighted in these meetings, but appropriate consultation with PMU / PIU detailing entitlements, GRM and other important aspects has not been done yet.

#### *Recommendations for ADB SPS compliance*

- Undertake DMS/SES with AHs once drainage alignment is finalised and agreed.
- Organise public consultations and SES data collection with: a) AHs residing along the Kbal Hong Canal; b) farmers and villagers using water from the Kbal Hong Canal; and c) street sellers around the Pursat market.
- During construction, ensure contractors are liable for: a) give preference to employing AHs, especially women, for construction work; b) provide equal salary to women and men; c) provide separate toilet facilities for women and men construction workers; d) provide HIV/AIDS and health & safety awareness training to all workers; e) provide alternative market location for street sellers around the market during construction, equipped with separate toilet facilities for men and women; and f) notify residents along the drainage lines of the construction timetable and works at least one month in advance of start of construction.

## VI. PURSAT LANDFILL SUB-PROJECT

45. There are two options for the new landfill site, both east side of Pursat town. The other one (option 1) is located 1.5km and the other (option 2) 5km from the National Road no. 5. Both of the sites are situated on public land, but need access road improvement which will affect private land, land use and livelihoods, structures, and trees and crops.

46. Option 1 (closer to Pursat town) landfill site is situated on public land, but there are several permanent households close-by. Depending on the size and shape of the planned landfill these households fall within 1km of the landfill borders set at MOE guidelines for landfill site selection. This trigger the need for LAR or mitigation measures for any affected households. The access road is currently 4m wide, planned to be widened to 8m. This will have immediate LAR impact on both sides of the road on actively farmed land plots, some fruit and other trees, electricity line, and private property like fences.

47. Option 2 (further away from Pursat town) for landfill site is much further from National Road No. 5, Pursat town centre and the existing landfill site on private land with waste pickers. There are two access way options for the first part of the entire access road, one with ROW 10m (closer to Pursat) and another with ROW 20m. Both have adequate width for not requiring any LAR, but with the crops sown and trees close to the road will be impacted. The remainder of the access road has rice and cassava fields, and some plantations on both sides of the road. All AHs in the area have land titles. There are only a couple AHs within the 1km range from the landfill site. This would still trigger the need for LAR or mitigation measures as per the landfill Environmental Management Plan (EMP) for any AHs within the minimum distance. However, there are no places of worship or schools within MOE guideline range, making the site more suitable from resettlement perspective for landfill than Option 1.

48. There are 13 AHs involved in waste picking, however, the number of waste pickers is depending on the day and time of the day, in what appears to be part-time employment for some of the waste pickers. A list of all AHs involved has been compiled by the Provincial Authorities, but the identification of vulnerable AHs is still on-going. Some of the waste pickers are entirely dependent on the waste picking as primary income source, and due to their family situation do not have alternatives or options for change of livelihoods via vocational training. These AHs live in village of Sres Srang, right next to the existing landfill site. Consultations with the waste picker AHs, especially vulnerable ones, is essential to develop a suitable compensation plan and LIRP. No consultations by PIU has taken place yet with either waste pickers or AHs along the access road or landfill site.

49. Waste collection is done by private company, but the current contract has not been finalized with the new company. The new contract could be as long as 15 years. The current rates for MSW collection is 5000-7000 riel / HH / m and 20-30 USD/m for hotels, restaurants and businesses. Price increase with the new waste collecting company and a more distant landfill site is possible. Landfill management arrangement has not been decided yet.

### *Recommendations for ADB SPS compliance*

- DED should consider the following design changes: a) consider relocating the landfill to the site (option 2) further away from Pursat town to avoid LAR, negative impact of landfill on nearby AHs and future growth plans of Pursat town; b) locate the waste cells onto the southwest corner of the landfill site (in case of Option 1) to increase distance from the cells to the closest AHs; c) plant two parallel rows of trees around the landfill site to block waste flying off, smell and flies; and d) construct a separate support building for waste pickers, with separate toilets for men and women, washing and cooking facilities with running water, first aid point, children's play area and shaded rest area.

- Organise public consultations and SES data collection with waste pickers at times when waste trucks are not arriving to the site, preferably in the early mornings, and separate consultations, DMS and SES with AHs living within 1 km of the landfill site.
- Provide AHs within 1 km radius option for relocation or mitigation measures. Compensate all relocating AHs for loss of land and structures at replacement cost, but including right for AHs to salvage materials from existing structures.
- Provide all relocated AHs transfer (including transport and rental allowance) and life stabilization allowance. Provide all AHs compensation for loss of income and livelihoods.
- Identify all vulnerable and severely affected HH, including those living with HIV/AIDS. Provide additional allowances for vulnerable and severely affected households. Ensure relocated AHs, especially vulnerable and severely affected, avoid falling into debt due to relocation.
- Prepare LIRP, which includes vocational training and alternative livelihood options such as small vegetable gardens (provide seeds and training) and chicken raising (provide chickens, livestock training, as well as chicken flu awareness). Provide necessary tools, equipment and initial stock for AHs completing vocational training courses to start businesses and trade. Follow up LIRP activities after initial training and provision of materials. Engage Provincial Vocational Training institute and Provincial Department of Woman Affairs in vocational training. For illiterate AHs provide access to literacy courses at the Provincial Education Department. Provide health & safety training, and safety equipment (boots and metal pickers) for the waste pickers continuing at the new landfill. Follow up LIRP activities after initial training and provision of materials.

## **ANNEX 1: SUB-DECREE ON ESTABLISHMENT OF RESETTLEMENT SITE**

### **SUB-DECREE**

#### **ON**

17.50-HA LAND ALLOCATING IN KAMPONG CHHANG MUNICIPALITY, KAMPONG CHHNANG PROVINCE, FROM TANLE SAP BASIN 2 AND DIRECTIVE # SRNN DATED MARCH 27, 2016 OF ROYAL GOVERNMENT TO TRANSFER THE STATE-OWNED LAND TO BE GRANTED TO COMMUNITY AND REMAINING LAND FOR INFRASTRUCTURE.

- Having seen the Constitution of the Kingdom of Cambodia
- Having seen sub-decree NS/RKT/0913/903 dated September 24, 2013 on the appointment of the Royal Government of Cambodia;
- Having seen Royal Kram 02/NS/94 dated July 20, 1994 on the organization and functioning of the Council of Ministers
- Having seen Royal Kram NS/RKM/0699/09 dated June 23, 1999 on the creation of the Ministry of Land Management, Urban Planning and Construction
- Having seen Royal Kram NS/RKM/0196/13 dated January 24, 1996 on the creation of the Ministry of Agriculture, Forestry and Fisheries
- Having seen Royal Kram NS/RKM/0801/14 dated August 30, 2001 on Land Law of Cambodia
- Having seen Royal Kram NS/RKM/0802/16 dated August 31, 2002 on Forestry Law of Cambodia
- Having seen Sub-decree NS/RKT/0806/339 dated August 3, 2006 on Guideline and Transitional Provisions

### **Hereby Decide**

- Article 1: State-owned land cutting of 17.50 ha from Tonle Sap Basin 2 and Directive # SRNN Dated March 27, 2016 of Royal Government to transfer the state-turned-private land to be granted to community and remaining land of 5 ha reserved for infrastructure around Khsam Sangkat, Kampong Chhnang municipality according to Project UTM Zone 48N Datum WGS 1984 as stated in annex of scaled map of sub-decree.
- Article 2: To be entitled to own and offer concessional land as stipulated in Article 1 to State-Owned Management Committee to manage and offer land titles to community of 525 families to be resettled in Village # 6Sangkat Khsam, Kampong Chhnang Municipality, Kampong Chhnang province.
- Article 3: Land titles of 531 land plots, in which 525 land plots are for households and 6 land plots for construction, 1 for religious hall, 1 more for market and parking space and 4 more for public park in Village # 6, Sangkat Khsam, Kampong Chhnang Municipality, Kampong Chhnang province.
- Article 4: All provisions contrary to this law shall be abrogated.
- Article 5: Minister in charge of council ministers, Minister of Interior, Minister of Economy and Finance, Minister of Land Management, Urban Planning and Construction, Minister of Environment Minister of Agriculture, Forestry and Fisheries, Ministers and Secretaries of State of Miniseries and Relevant Institutions and Governor of Kampong Chhnang Province shall enforce this sub-decree from the date of signing onwards.

**ANNEX 2: CONTRACT FORM FOR AFFECTED HOUSEHOLDS RELOCATING TO RESETTLEMENT SITE**

KINGDOM OF CAMBODIA  
Nation Religion King  
Agreement

I, ....., Sex: ....., Year of Birth: ....., Address: ..... Village, Sangkat ....., Kampong Chhnang Municipality, Citizen ID ..... dated ..... / ..... / 20..... and Mr./Ms. ....Year of Birth..... Citizen ID..... date..... is .....

We have agreed to accept land lot, title deed No. .... from commission of Affection Resolution River Bank Development. We assure to pay landfill work of US\$1000 to the company by full payment or by instalment (starting from .....to.....

I assure to move house from river upon receipt of land plot from commission on ...../...../20..... at the latest.

In case and to avoid any change, I have agreed affix my thumbprint for evidence. In case I shall not comply with the above contract. I am responsible before the existing law in force.

Seen and approved  
Dated ...../...../20.....  
.....Commission

Kampong Chhnang,  
dated ...../...../20.....  
Thumbprint of Land Lot Recipient  
Husband  
Wife

**Annex 9 : List of PMU and PIU staff and their TOR**

## 1. List of PMU Staff and TOR

No.	Name /	Terms of Reference (TOR)
1	<u>H.E. Vong Pisith</u> Project Director	<p><i>Directing management of project implementation-with overall responsibilities as described below;</i></p> <ul style="list-style-type: none"> <li>• Conducts meeting of Project Steering Committee (PSC) on the overall supervision and implementation of the project and ensures that the NPSC, Sub-regional Project Steering Committee (SPSC) and ADB are kept informed of project developments, issues and progress.</li> <li>• Oversees the work of PCU and PIU staff, and the recruitment and performance of international and national consultants, ensuring budgets and work plans are approved and executed on time and on target.</li> </ul>
2	<u>H.E. Vong Pisith</u> Project Manager	<p><i>Directed co-management supporting Project Director in project implementation with responsibilities assigned and deputed as described below</i></p> <ul style="list-style-type: none"> <li>• Manages PMU/PIU staff and work activities during implementing the project.</li> <li>• Reports to the Project Director, ensuring effective coordination and implementation of the project and assist the PIU's prepare and implement detailed annual work plans and budgets, including project implementation plan and rolling annual action plans.</li> <li>• Oversee consultant recruitment and procurement, and implementation of the Project Performance Monitoring System (PPMS), including monitoring of environmental and involuntary resettlement, implementation of the poverty reduction and social strategy, and gender action plans.</li> <li>• Responsible for ensuring that the day-to-day management and administration of the project implementation is in line with Updated Standard Operating Procedures for All Externally Financed Projects/ Programs in Cambodia.</li> </ul>
3	<u>Mr. Vong Rada</u> Supervisory Engineer (1)	<ul style="list-style-type: none"> <li>• Manages and administers the technical aspects of the project implementation process.</li> <li>• Establishes and maintains project implementation schedules.</li> <li>• Manages and administers the implementation of contracts.</li> <li>• Monitors and evaluates progress and performances of technical staff, consultants, and contractors. Certifies progress for payments.</li> <li>• Prepares and distributes technical reports to the different stakeholder groups.</li> <li>• Carries out any other technical functions and responsibilities considered necessary by the project manager.</li> <li>• Receives instructions from and reports directly to the Project Manager /Project Director.</li> </ul>
4	<u>Mr. Prok Novinda</u> Supervisory Engineer (2)	
5	Mr. Eap Visoth Social & Resettle-ment Officer	<ul style="list-style-type: none"> <li>• Review and update the resettlement plans as with Consultant team per the detailed design based on the results of the DMS and the replacement cost survey.</li> <li>• Provide necessary support and capacity building to concerned agencies for RP implementation, including orientation and training on the RP activities and implementation mechanisms to PMU staff.</li> <li>• Work closely with the local authorities and concerned agencies at all levels on resettlement related activities and assist PIU in obtaining local and national clearances and approvals for the RP</li> <li>• Work with the Consultant team to ensure that the small-scale infrastructure improvements in CMEI do not entail resettlement or indigenous people's impact.</li> <li>• Coordinate with the Consultant team in the monitoring of land acquisition and resettlement, in accordance with the approved resettlement plans and ADB's Safeguard Policy Statement.</li> <li>• Establish and implement liaison mechanisms to ensure proper technical and logistical support between the Project to the PMU, local administrative authorities, resettlement committees and concerned government departments.</li> <li>• Assist in updating the public information booklets as necessary;</li> </ul>

		<ul style="list-style-type: none"> <li>• Ensure compliance with relevant Royal Government of Cambodia laws and regulations and ADB for all project components.</li> </ul>
6	Mr. No Kilarith Environment Officer	<ul style="list-style-type: none"> <li>• Coordination and liaison with counterparts in the consultants' team;</li> <li>• Coordination with the environment consultants on the implementation of the EMP and the application of environment safeguards in both towns;</li> <li>• Assisting the environment consultants in the design and conduct of environmental monitoring, including water quality testing and air pollution;</li> <li>• Advising on relevant government policies and guidelines relevant to the environment sector;</li> <li>• Coordination and liaison with key stakeholders, including government agencies, private sector companies and project affected communities; and</li> <li>• Attending training seminars and workshops as part of the capacity building program.</li> </ul>
7	<u>Mr. Pou Manith</u> Office Manager	<ul style="list-style-type: none"> <li>• Responsible for personnel management and administration.</li> <li>• Manages and administers project assets and facilities and ensures that they are only used for approved project purpose by authorized personnel and are properly secured and maintained</li> <li>• Prepares and coordinates regular scheduled and non-scheduled meetings related to administration of the project.</li> <li>• Coordinates reporting and information exchange.</li> <li>• Undertakes any other duties and responsibilities assigned by the Project Manager/ Deputy and Project Director.</li> <li>• Receives instructions from, and reports directly to Project Manager/Deputy and Project Director.</li> <li>• Responsible for ensuring project documents are properly maintained and retained for project activities.</li> </ul>
8	<u>Mr. Pheang Pheourn</u> Procurement Officer	<ul style="list-style-type: none"> <li>• Incorporate and coordinate with Consultants to establish capacity to accomplish all procurement in accordance with RCG and ADB policies and procedures, including the identification of responsibilities, requirements for approvals, oversight, documentation and reporting for all outputs, including CMEI.</li> <li>• To procure civil works, equipment purchase and installation, consulting services, and other contracts to implement the project for all outputs, including CMEI</li> <li>• To prepare the necessary bid documents required for local and international competitive bidding. The bid documents will include instruction to bidders; general and special conditions of contract, technical specifications, bills of quantities, tender drawings, and forms of contract. The specification will be detailed and use locally applicable standards as well as follow ADB procedures. The bill of quantities will be based on detailed calculations of quantities and costs estimates will be based on market prices. This shall be for all outputs, including CMEI.</li> <li>• TO prepare bid documents for design and contracts including input data and status, output requirements, technical specifications, bills of quantities, tender drawings for all outputs including CMEI.</li> <li>• To evaluate th bid proposals and prepare bid evaluation report, contract negotiations with the successful bidders and preparing contract documents for all outputs, including CMEI.</li> <li>• To provide inputs for training and capacity development; coordinate with other team specialists to carry out the training program, and provide support to the capacity development activities for PIU and NGO staff.</li> </ul>
9	<u>Mr. Mao Dor</u> Accounting and Financial Management Officer	<ul style="list-style-type: none"> <li>• Responsible for managing and administering the financial and accounting affairs of the project in accordance with the RGC's financial policies, guidelines and procedures, all financial covenants and other obligations in the Financing , Project and TA agreements.</li> <li>• Establishes and maintains the different budgets for the project ensuring the project is included in the Public Investment program (PIP) of the Ministry/Agency leading to financial commitments in the Budget Strategic Plan (BSP) and Annual Budget Plan (BP).</li> <li>• Establishes and maintains project accounts (accounting and financial management systems and records) in compliance with the procedures</li> </ul>

		<p>and guidelines outlined in the Financial Management Manual.</p> <ul style="list-style-type: none"> <li>• Maintains proper internal controls within the financial operations of the project, particularly for bank accounts and cash advances</li> <li>• Supervises the management and administration of all financial transactions under the project.</li> <li>• Approves expenditure within delegated authority.</li> <li>• Generates and distributes the different financial reports and information necessary for effective and responsible financial management and decision-making.</li> <li>• Carries out any other financial and accounting duties and responsibilities assigned by the project manager.</li> <li>• Receives instructions from, and reports directly to, the project manager.</li> <li>• Prepares financial statements and reports for audit and facilitates the conduct of audits of the project.</li> <li>• Coordination and liaison with counterparts in the consultants' team;</li> <li>• Coordination with the financial and administration specialists on all the financial, accounting and auditing aspects of the project in both towns;</li> <li>• Assisting in the implementation and operation of the financial management systems and for financial accounting, reporting and loan disbursements, financial projections and budgeting;</li> <li>• Advising on government policies and guidelines relevant to the project's financial management and accounting; and</li> <li>• Attending training seminars and workshops for capacity development.</li> </ul>
10	<p><u>Ms. Thab Solini</u> Accounting Officer</p>	<ul style="list-style-type: none"> <li>• Responsible for managing and administering the financial affairs of the project in accordance with the RGC's financial policies, guidelines and procedures, all financial covenants and other obligations in the Financing , Project and TA agreements.</li> <li>• Establishes and maintains the different budgets for the project ensuring the project is included in the Public Investment program (PIP) of the Ministry/Agency leading to financial commitments in the Budget Strategic Plan (BSP) and Annual Budget Plan (BP).</li> <li>• Establishes and maintains project accounts (accounting and financial management systems and records) in compliance with the procedures and guidelines outlined in the Financial Management Manual.</li> <li>• Maintains proper internal controls within the financial operations of the project, particularly for bank accounts and cash advances</li> <li>• Supervises the management and administration of all financial transactions under the project.</li> <li>• Approves expenditure within delegated authority.</li> <li>• Generates and distributes the different financial reports and information necessary for effective and responsible financial management and decision-making.</li> <li>• Carries out any other financial and accounting duties and responsibilities assigned by the project manager.</li> <li>• Receives instructions from, and reports directly to, the project manager.</li> <li>• Prepares financial statements and reports for audit and facilitates the conduct of audits of the project.</li> <li>• Coordination and liaison with counterparts in the consultants' team;</li> <li>• Coordination with the financial and administration specialists on all the financial, accounting and auditing aspects of the project in both towns;</li> <li>• Assisting in the implementation and operation of the financial management systems and for financial accounting, reporting and loan disbursements, financial projections and budgeting;</li> <li>• Advising on government policies and guidelines relevant to the project's financial management and accounting; and</li> <li>• Attending training seminars and workshops for capacity development.</li> </ul>
11	<u>To be named</u>	<ul style="list-style-type: none"> <li>• Assist to accounting officer.</li> </ul>

	Assistant Accounting	
12	<u>Mr. Ngan Kosal</u>  Secretary/Office Assistant	<ul style="list-style-type: none"> <li>• Assists to office manager;</li> <li>• Responsible for personnel management and administration;</li> <li>• Manages and administers project assets and facilities and ensures that they are only used for approved project purpose by authorized personnel and are properly secured and maintained.</li> <li>• Prepare and coordinates regular schedule and non-scheduled meeting related to administration of the project;</li> <li>• Coordinates reporting and information exchange;</li> <li>• Undertakes any other duties and responsibilities assigned by the Project Manager/ Project Director;</li> <li>• Receive instructions form, and reports directly to, the Project Manager/ Project Director;</li> <li>• Responsible for ensuring project documents are properly maintained and retained for project activities.</li> </ul>
13	<u>Mr. Khim Sothea</u>  Driver	<ul style="list-style-type: none"> <li>• Drive and maintain the project vehicle;</li> <li>• Perform other tasks as may be assigned.</li> </ul>

## 2. List of Kampong Chhnang PIU Staff and TOR

No.	Name / Position in PAM	Terms of Reference (TOR)
1	<u>Mr. Chay Leaphea</u>  Project Manager	<ul style="list-style-type: none"> <li>• Ensuring design and implementation of the sub-project in a time manner and to a high quality;</li> <li>• Advising on relevant government policies and guidelines relevant to the design and implementation of the subproject;</li> <li>• Advising on relevant government policies and guidelines relevant to the design and implementation of the subprojects;</li> <li>• Providing overall support to the consultant selection process; and</li> <li>• Establishing the consultant services office and facilities.</li> </ul>
2	<u>Mr. Yin Borin</u>  Deputy Project Manager	<ul style="list-style-type: none"> <li>• Supports the PIU manager in;</li> <li>• Coordination and liaison with central government agencies, PPC, water and communes and other stakeholders;</li> <li>• Management of the PMU staff and the Consultants;</li> <li>• Oversight of Contract Management, construction, works, monitoring and operation and maintenance;</li> <li>• Ensuring design and implementation of the sub-project in the timely manner and to the high quality.</li> <li>• Advising on relevant government policies and guideline relevant to the design and implementation of the sub-project,</li> <li>• Advising on relevant government policies and guidelines relevant to the design and implementation of the subprojects;</li> <li>• Providing overall support to the consultant selection process; and</li> <li>• Establishing the consultant services office and facilities.</li> </ul>
3	<u>Mr. Keo Vith</u>  Construction Engineer	<ul style="list-style-type: none"> <li>• Manages and administers the technical aspects of the project implementation process.</li> <li>• Establishes and maintains project implementation schedules.</li> <li>• Manages and administers the implementation of contracts.</li> <li>• Monitors and evaluates progress and performances of technical staff, consultants, and contractors. Certifies progress for payments.</li> <li>• Prepares and distributes technical reports to the different stakeholder groups.</li> <li>• Carries out any other technical functions and responsibilities considered necessary by the project manager.</li> <li>• Receives instructions from and reports directly to the Project Manager/ Project Director</li> </ul>

4	<p><u>Mr. Eang Hour</u> Construction Engineer</p>	<ul style="list-style-type: none"> <li>• Manages and administers the technical aspects of the project implementation process.</li> <li>• Establishes and maintains project implementation schedules.</li> <li>• Manages and administers the implementation of contracts.</li> <li>• Monitors and evaluates progress and performances of technical staff, consultants, and contractors. Certifies progress for payments.</li> <li>• Prepares and distributes technical reports to the different stakeholder groups.</li> <li>• Carries out any other technical functions and responsibilities considered necessary by the project manager.</li> <li>• Receives instructions from and reports directly to the Project Manager/ Project Director</li> </ul>
5	<p><u>To be named</u> Water Resources Engineer</p>	<ul style="list-style-type: none"> <li>• Supervises the surveys and investigations;</li> <li>• Incorporates climate change projections in the design of civil works based on the information provided by surveys completed and information from consultants;</li> <li>• Undertakes periodic inspections during construction to ensure that the river works comply with the design intent;</li> <li>• Contribute to all necessary reporting under the Project, as determined by consultants and stakeholders;</li> <li>• Assist in any other related works as deemed necessary by the Consultant team.</li> </ul>
6	<p><u>Mr. Meas Yuthinavann</u> Community Coordinator</p>	<ul style="list-style-type: none"> <li>• Coordinate and liaises with counterparts in the consultant's team;</li> <li>• Coordinates with the other consultants in and in the particular the consultants concerned with Enabling Strategic Local Economic Development Plan (SLEDP) Implementation;</li> <li>• Provides assistance in ensuring that design and implementation of the subproject component are done in a timely manner and to a high quality;</li> <li>• Coordination and liaison with key stakeholders, including government agencies, private sectors, companies and the project affected communities;</li> <li>• Assists the social, gender and livelihood consultants in coordination and liaison with key stakeholders, including the project affected communities</li> <li>• Assists the social, gender and livelihood consultants in working closely with the Department of Women's Affairs and communities on the environmental awareness and livelihood related initiatives proposed in both towns;</li> <li>• Provides advice on relevant government policies and guidelines relevant to the social development and gender sectors; and</li> <li>• Attending training seminars and workshops as part of the capacity building program</li> </ul>
7	<p>Mr. Mak Salim Community Coordinator</p>	
8	<p><u>Mr. Prum Chansophea</u> Resettlement Officer</p>	<ul style="list-style-type: none"> <li>• Preparation and updating the RAPs, and conduct of Community Development activities;</li> <li>• Coordination with counterparts in the PMU, consultant's team local authorities on involuntary resettlement safeguards matters;</li> <li>• Assist the PMU and PIU to ensure that ADB's involuntary resettlement safeguard categorization remains B;</li> <li>• Assist in the preparation of updated RPs;</li> <li>• Assist in monitoring that the grievances are addressed promptly and properly and that the grievance redress mechanism is functioning well;</li> <li>• Assist in the training on grievance if needed;</li> <li>• Assist PMU and PIU with ongoing internal monitoring for resettlement based on the approved updated resettlement plan and affected households database, including contributing towards quarterly internal monitoring report for involuntary resettlement as an attachment to the quarterly project progress reports;</li> <li>• Assist the PIU in updating the public information booklets and translating them into Khmer.</li> </ul>
9	<p><u>Mr. Sok Chanveasna</u></p>	<ul style="list-style-type: none"> <li>• Coordination and liaison with counterparts in the Consultant's team;</li> </ul>

	Project Accountant	<ul style="list-style-type: none"> <li>• Coordination with the financial and administration specialists on all the financial, accounting, and auditing aspects of the project in both towns;</li> <li>• Assisting in the implementation and operation of the Financial management systems and for Financial Accounting, reporting and loan disbursements, Financial projections and budgeting;</li> <li>• Advising on government policies and guidelines relevant to the project's Financial Management and Accounting; and</li> <li>• Attending training seminars and workshops as part of the capacity building program.</li> </ul>
10	<u>Ms. Rum Sreyroth</u> Office Manager	<ul style="list-style-type: none"> <li>• Responsible for personnel management and administration;</li> <li>• Manages and administers project assets and facilities and ensures that they are only used for approved project purpose by authorized personnel and are properly secured and maintained</li> <li>• Prepares and coordinates regular scheduled and non-scheduled meetings related to administration of the project.</li> <li>• Coordinates reporting and information exchange.</li> <li>• Undertakes any other duties and responsibilities assigned by the Project Manager/Project Director.</li> <li>• Receives instructions from, and reports directly to, the Project Manager/Project Director; and</li> <li>• Responsible for ensuring project documents are properly maintained and retained for project activities.</li> </ul>
11	<u>Mr. Touch Virak</u> Driver	<ul style="list-style-type: none"> <li>• Drive and maintain the project vehicle;</li> <li>• Perform other tasks as may be assigned.</li> </ul>

### 3. List of Pursat PIU Staff and TOR

No.	Name / Position in PAM	Terms of Reference (TOR)
1	<u>Mr. Sy Vuth</u> Project Manager	<ul style="list-style-type: none"> <li>• Ensuring design and implementation of the sub-project in a time manner and to a high quality;</li> <li>• Advising on relevant government policies and guidelines relevant to the design and implementation of the subproject;</li> <li>• Advising on relevant government policies and guidelines relevant to the design and implementation of the subprojects;</li> <li>• Providing overall support to the consultant selection process; and</li> <li>• Establishing the consultant services office and facilities.</li> </ul>
2	<u>Mr. Yom Ya</u> Deputy Project Manager	<ul style="list-style-type: none"> <li>• Supports the PIU manager in;</li> <li>• Coordination and liaison with central government agencies, PPC, water and communes and other stakeholders;</li> <li>• Management of the PMU staff and the Consultants;</li> <li>• Oversight of Contract Management, construction, works, monitoring and operation and maintenance;</li> <li>• Ensuring design and implementation of the sub-project in the timely manner and to the high quality.</li> <li>• Advising on relevant government policies and guideline relevant to the design and implementation of the sub-project,</li> <li>• Advising on relevant government policies and guidelines relevant to the design and implementation of the subprojects; and</li> <li>• Providing overall support to the consultant selection process; and Establishing the consultant services office and facilities</li> </ul>
3	<u>Mr. Kaing Kimchhun</u> Construction Engineer	<ul style="list-style-type: none"> <li>• Manages and administers the technical aspects of the project implementation process.</li> <li>• Establishes and maintains project implementation schedules.</li> <li>• Manages and administers the implementation of contracts.</li> </ul>

		<ul style="list-style-type: none"> <li>• Monitors and evaluates progress and performances of technical staff, consultants, and contractors. Certifies progress for payments.</li> <li>• Prepares and distributes technical reports to the different stakeholder groups.</li> <li>• Carries out any other technical functions and responsibilities considered necessary by the project manager.</li> <li>• Receives instructions from and reports directly to the Project Manager/ Project Director</li> </ul>
4	Mr. Chak Say  Community Coordinator	<ul style="list-style-type: none"> <li>• Coordinate and liaises with counterparts in the consultant's team;</li> <li>• Coordinates with the other consultants in and in the particular the consultants concerned with Enabling Strategic Local Economic Development Plan (SLEDP) Implementation;</li> <li>• Provides assistance in ensuring that design and implementation of the subproject component are done in a timely manner and to a high quality;</li> <li>• Coordination and liaison with key stakeholders, including government agencies, private sectors, companies and the project affected communities;</li> <li>• Assists the social, gender and livelihood consultants in coordination and liaison with key stakeholders, including the project affected communities</li> <li>• Assists the social, gender and livelihood consultants in working closely with the Department of Women's Affairs and communities on the environmental awareness and livelihood related initiatives proposed in both towns;</li> <li>• Provides advice on relevant government policies and guidelines relevant to the social development and gender sectors; and</li> <li>• Attending training seminars and workshops as part of the capacity building program.</li> </ul>
5	Mr. Phin Narin Procurement Officer	<ul style="list-style-type: none"> <li>• Incorporates and coordinates with Consultants to establish capacity to accomplish all procurement in accordance with RCG and ADB policies and procedures, including the identification of responsibilities, requirements for approvals, oversight, documentation and reporting for all outputs, including CMEI.</li> <li>• To procure civil works, equipment purchase and installation, consulting services, and other contracts to implement the project for all outputs, including CMEI</li> <li>• To prepare the necessary bid documents required for local and international competitive bidding. The bid documents will include instruction to bidders; general and special conditions of contract, technical specifications, bills of quantities, tender drawings, and forms of contract. The specification will be detailed and use locally applicable standards as well as follow ADB procedures. The bill of quantities will be based on detailed calculations of quantities and costs estimates will be based on market prices. This shall be for all outputs, including CMEI.</li> <li>• TO prepare bid documents for design and contracts including input data and status, output requirements, technical specifications, bills of quantities, tender drawings for all outputs including CMEI.</li> <li>• To evaluate th bid proposals and prepare bid evaluation report, contract negotiations with the successful bidders and preparing contract documents for all outputs, including CMEI.</li> <li>• To provide inputs for training and capacity development; coordinate with other team specialists to carry out the training program, and provide support to the capacity development activities for PIU and NGO staff.</li> </ul>
6	Mr. Than Sophearoun  Resettlement Officer	<ul style="list-style-type: none"> <li>• Preparation and updating the RAPs, and conduct of Community Development activities;</li> <li>• Coordination with counterparts in the PMU, consultant's team local authorities on involuntary resettlement safeguards matters;</li> <li>• Assist the PMU and PIU to ensure that ADB's involuntary resettlement safeguard categorization remains B;</li> <li>• Assist in the preparation of updated RPs;</li> <li>• Assist in monitoring that the grievances are addressed promptly and properly and that the grievance redress mechanism is functioning well;</li> <li>• Assist in the training on grievance if needed;</li> </ul>

		<ul style="list-style-type: none"> <li>• Assist PMU and PIU with ongoing internal monitoring for resettlement based on the approved updated resettlement plan and affected households database, including contributing towards quarterly internal monitoring report for involuntary resettlement as an attachment to the quarterly project progress reports;</li> <li>• Assist the PIU in updating the public information booklets and translating them into Khmer.</li> </ul>
7	Miss. Svay Chanchakriya  Project Accountant	<ul style="list-style-type: none"> <li>• Coordination and liaison with counterparts in the Consultant's team;</li> <li>• Coordination with the financial and administration specialists on all the financial, accounting, and auditing aspects of the project in both towns;</li> <li>• Assisting in the implementation and operation of the Financial management systems and for Financial Accounting, reporting and loan disbursements, Financial projections and budgeting;</li> <li>• Advising on government policies and guidelines relevant to the project's Financial Management and Accounting; and</li> <li>• Attending training seminars and workshops as part of the capacity building program.</li> </ul>
8	Miss. Kim Chakriya  Office Manager	<ul style="list-style-type: none"> <li>• Responsible for personnel management and administration;</li> <li>• Manages and administers project assets and facilities and ensures that they are only used for approved project purpose by authorized personnel and are properly secured and maintained</li> <li>• Prepares and coordinates regular scheduled and non-scheduled meetings related to administration of the project.</li> <li>• Coordinates reporting and information exchange.</li> <li>• Undertakes any other duties and responsibilities assigned by the Project Manager/Project Director.</li> <li>• Receives instructions from, and reports directly to, the Project Manager/Project Director; and</li> <li>• Responsible for ensuring project documents are properly maintained and retained for project activities.</li> </ul>
9	Mr. Tan Sophal  Driver	<ul style="list-style-type: none"> <li>• Drive and maintain the project vehicle;</li> <li>• Perform other tasks as may be assigned.</li> </ul>