

# Environmental Monitoring Report

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Environmental Monitoring Report  
July – December 2020

February 2021

## Cambodia: Provincial Water Supply and Sanitation Project

Prepared by the Ministry of Public Works and Transport for the Asian Development Bank.

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# **Semi-Annual Environmental Monitoring Report**

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## **COUNTRY Cambodia**

### **Ministry of Public Works and Transport**

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CAM: Provincial Water Supply and Sanitation Project –  
Sanitation Component

Project No. 48158-002

Loan 3630-CAM/Grant 0561-CAM, AFD CKH 1188 01 V

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**Reporting Period:** July to December 2020

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## Abbreviations

ADB	Asian Development Bank
AFD	Agence Française de Développement (French Development Agency)
BTB	Battambang
CEMP	Construction environmental management plan
CW	Civil works (subproject package)
DMS	Detailed measurement survey
EIA	Environmental impact assessment
EMP	Environmental management plan
GDR	General Department of Resettlement
GRC	Grievance Redress Committee
GRM	Grievance redress mechanism
HH	Household
H&S	Health and safety
IEE	Initial environmental examination
IESIA	Initial environmental and social impact assessment
MOE	Ministry of Environment
MPWT	Ministry of Public Works and Transport
PDPWT	Provincial Department of Public Works and Transport
PIAC	Project Implementation Assistance Consultant
PIB	Public information booklet
PIU	Project Implementation Unit
PMU	Project Management Unit
PPE	Personal protective equipment
PWSSP	Provincial Water Supply and Sanitation Project O(this project)
SES	Socio-economic survey
SRP	Siem Reap
SMR –E	Semi-annual safeguards monitoring report on the environment
WWTP	Wastewater treatment plant

# 1 ENVIRONMENTAL SAFEGUARDS SUMMARY

## 1.1 Introduction

1. The third Semi-annual Monitoring Report on the Environment (SMR-E) covers the period of July – December 2020 for the Provincial Water Supply and Sanitation Project – Sanitation Component (PWSSP). The SMR-E has been prepared to fulfil the safeguard policy requirement of ADB.
2. The SMR-E is prepared by the Project Implementation Assistance Consultant (PIAC) (Rambøll Danmark A/S in association with TANCONS (Cambodia) Co., Ltd) and checked by the Project Management Unit (PMU) of the Ministry of Public Works and Transport (MPWT).

## 1.2 Summary of Project Progress

3. A brief summary of the project progress for contract award, construction and key activities in this reporting period are presented in Table 1:

Table 1 Project Progress Summary

Safeguards Category	Environment	B	
Reporting Period:	July-December/2020	Date Last Report Published:	November 2020
Contracts Awarded to Date:	<ul style="list-style-type: none"> <li>• PWSSP/MPWT-01: Siem Reap Trunk Sewer Replacement awarded to Beijing Urban Construction Group Co., Ltd., 12 November 2018,</li> <li>• MPWT-CW-2: West Battambang Wastewater Treatment and Collection System awarded to Kiri Dangrek Construction Co., Ltd. and No. 203 Research Institute of Nuclear Industry (JV), 29 December 2020</li> </ul>		
Construction Progress to Date:	<ul style="list-style-type: none"> <li>• PWSSP/MPWT-01 Siem Reap Trunk Sewer Replacement: 98 % construction completed</li> <li>• MPWT-CW-2 West Battambang Wastewater Treatment and Collection System: 0 % construction completed, contract just awarded</li> </ul>		
Key Sub-project Activities in this Reporting Period:	<p><b>Construction Activities</b></p> <p>PWSSP/MPWT-01 Siem Reap Trunk Sewer Replacement:</p> <ul style="list-style-type: none"> <li>• The certificate for practical completion of the core activities was issued on 12 June 2020. Repair of the pump control board was completed in mid-October 2020 in order to commission the pipeline and put it in operation.</li> </ul> <p>MPWT-CW-2 West Battambang Wastewater Treatment and Collection System:</p> <ul style="list-style-type: none"> <li>• There were no construction activities in the reporting period.</li> </ul> <p><b>Permits or Consents Issued:</b></p> <p>PWSSP/MPWT-01 Siem Reap Trunk Sewer Replacement:</p> <ul style="list-style-type: none"> <li>• The operational acceptance certificate was issued on 7 July 2020 following the handover of the facilities to the PIU-Siem Reap (start of operations).</li> </ul> <p>MPWT-CW-2 West Battambang Wastewater Treatment and Collection System:</p> <ul style="list-style-type: none"> <li>• Unexploded Ordinance Clearance Statement was obtained from the Cambodian Mine and Victim Assistance Authority on 25 September 2020</li> <li>• The wastewater treatment plant site procurement was completed, and the site occupancy rights granted to GDR on 19 October 2020.</li> <li>• Approval of the Initial Environmental and Social Impact Assessment (IESIA), was issued by the Ministry of Environment on 1 December 2020</li> </ul>		

*PWSSP – Provincial Water Supply and Sanitation Project; MPWT – Ministry of Public works and Transport; GDR – General Department of Resettlement; IESIA – Initial Environmental and Social Impact Assessment;*

### 1.3 Summary of Environmental Management Plan Implementation

#### 1.3.1 Siem Reap Trunk Sewer Replacement

4. The implementation of the environmental management plan (EMP) in the reporting period is summarized below:
  - No construction activities carried out in the reporting period, and the certificate of operational acceptance was issued for the core sewer replacement works (see Table 1).
  - Progress of work (98% civil works and construction) – trench stabilization and road resealing, and installation of valve at pump station are outstanding works, but they are subject to approval of the variation. The road works are also dependent on the completion of the sewer and drainage connection project completion (being carried out by others under another project).
  - Temporary re-seal has been applied to the roads while the concept for trench stabilization and road rehabilitation is being finalized so the road is fully operational.
5. Progress with the monitoring of the EMP implementation during the reporting period is summarized below:
  - Number of monitoring visits to construction site and wider area:
    - No monitoring visits by PMU/PIU, but one visit was made to review the additional works
    - 1 visit by the PIAC's environmental safeguard expert
    - 2 visits by PIAC's social safeguard experts,
  - Number of environmental samples tested:
    - [nil] water quality samples tested
    - [nil] air quality samples tested
    - [nil] groundwater quality samples tested

#### 1.3.2 West Battambang Wastewater Treatment and Collection System

6. Construction and environmental management plan (EMP) implementation have not commenced during the reporting period. Progress on pre-construction activities is summarized below:
  - Various documents have been completed – specifically, the unexploded ordinance (UXO) clearance and the initial environmental and social impact assessment have been completed in the reporting period (refer Table 1).
  - Consultations in connection with initial environmental and social impact assessment (IESIA) were conducted in July 2020
7. Construction and (EMP) implementation have not yet commenced in the reporting period. EMP supervision is summarised in the following points, for this reporting period:
  - Number of monitoring visits to construction site and wider area:
    - [nil] visits by PMU and/or Project Implementation Unit (PIU)
    - [nil] visits by other parties (e.g. independent monitoring organization, Ministry of Environment (MOE), CSC)
  - Number of environmental samples tested:
    - [nil] water quality samples tested
    - [nil] air quality samples tested
    - [nil] groundwater quality samples tested

## 1.4 Summary of Complaints, Issues and Corrective Action

### 1.4.1 Siem Reap Trunk Sewer Replacement

8. Complaints, issues and corrective actions that have been identified or implemented in Siem Reap (SRP) during this reporting period are summarized overleaf:
- *Issues Raised:* People in Vihear Chean village, Svay Dankum commune complained in September 2020 that during rainy season the existing road in this section was flooded by rain water and that runoff is taking longer time than before construction, which they expect is caused by silted up drains and culverts. They proposed that as part of road improvement, the project should improve/rehabilitate the side drains and culverts. The fact of the matter is that the storms in September were one of the heaviest events in the past 25 years and therefore inundation due to pooling of surface runoff lasted longer than in recent memory.
  - *Grievances Raised with the Grievance Redress Committee (GRC):* No grievances in the reporting period
  - *Corrective Action Issued to the Contractor:*
    - There were no construction activities in the reporting period and so there have been no problems at construction sites that required corrective action.

### 1.4.2 West Battambang Wastewater Treatment and Collection System

9. Any complaints, issues and corrective action that has been identified or implemented in Battambang (BTB) are summarized in the following points, for this reporting period:
- *Issues Raised:* there have been no issues at construction sites (e.g. related to dust, noise, traffic) as construction has not started as yet
  - *Grievances Raised with GRC:* [nil] grievances
  - *Corrective Action Issued to the Contractor:*
    - There have been no problems at construction sites that required corrective action.

## 2 SAFEGUARDS STAFF, TRAINING AND DOCUMENTATION

### 2.1 Implementation Arrangements

10. The environmental safeguards roles and responsibilities are defined in the EMP. The roles are required to be filled in order to meet the EMP requirements. The status of the key roles for EMP implementation are presented in Table 2.

**Table 2. Status of Environmental Safeguard Roles**

Safeguards Role	Status and Comments			
Social and Environmental Specialist (MPWT)	<b>Date Started:</b>	April 2020	Full Time/ Part Time	PT (on multiple projects)
	<b>Comment</b>	MPWT established Social – Environmental Office (SEO) and appointed Mr. Penh Socheat as Environmental Officer responsible for the project. Tel: 087 431 777		
Social and Environmental Specialist (SES) (PDPWT- Battambang)	<b>Date Started:</b>	22 August 2018	Full Time/ Part Time	PT
	<b>Comment</b>	Mr. Teng Kemsean, Social and Environmental Officer. Tel: 012 864 861		
Social and Environmental Specialist (SES) (PDPWT Siem Reap)	<b>Date Started:</b>	2019	Full Time/ Part Time	PT
	<b>Comment</b>	Mr. Thern Soveat, Social and Environmental Officer. Tel: 017 529 979		
International Environment Specialist	<b>Date Started:</b>	19 May 2019/14 May 2020	Full Time/ Part Time	PT
	<b>Comment</b>	Replaced Dr Hoan, Trung Thanh by Mr Alexander Timmermann. Tel: +45 51 61 28 44		
National Environment Specialist	<b>Date Started:</b>	27 May 2019	Full Time/ Part Time	PT
	<b>Comment</b>	Mr Yim Chamnan, Tel: 012 945 546		

Safeguards Role	Status and Comments			
Contractor Social, Environmental and Safety Specialist – Siem Reap	<b>Date Started:</b>	2019	Full Time/ Part Time	FT
	<b>Comment</b>	Contractor Focal: Ms. Laing Lenghieng 098 213 575, demobilised following completion of construction		
Contractor Social, Environmental and Safety Specialist – Battambang	<b>Date Started:</b>		Full Time/ Part Time	
	<b>Comment</b>	To be appointed at start of construction.		
Contractor GRM Person - Battambang	<b>Date Started:</b>		Full Time/ Part Time	
	<b>Comment</b>	To be appointed at start of construction.		

11. It was concluded that the environmental safeguards roles are adequate considering the activities in the reporting period.

## 2.2 Training and Capacity Building

12. The environmental safeguards training courses that have been completed during this reporting period and the planned training courses for the next six months are shown in Table 3.

**Table 3. Environmental Safeguards Training Provided and Planned**

Training Course Title	Training Date	Participants	Training Provider
BTB - EMP adjustment and implementation - Development and adjustment of the EMP, roles and responsibilities, monitoring, supervision and reporting	Expected Q1 2021	PMU, PIU, contractor	PIAC
BTB - GRC – roles and responsibilities	Expected Q1 2021	PMU, PIU, contractor, commune councils	PIAC

Training Course Title	Training Date	Participants	Training Provider
BTB - Environmental protection - Pollution control on construction sites (air, noise, wastewater, solid waste)	Expected Q1 2021	PMU, PIU, contractor	PIAC
BTB - Environmental monitoring - Monitoring methods, data collection and processing, reporting systems	Expected Q1 2021	PMU, PIU, contractor, operator	PIAC

## 2.3 ADB Approvals

13. Information on the status of the safeguards documents are summarized in Table 4.

**Table 4. Status of Environmental Safeguard Documents**

Safeguards Documents	Update Issued (Latest Version)	Submitted to MOE	Submitted to ADB
SRP – EMP for Siem Reap Trunk Sewer Replacement Subproject	June 2019 (7 May 2020)	Not Applicable	07 May 2020
BTB - IESIA for West Battambang Wastewater Treatment and Collection System	22 September 2020	22 September 2020, Approved 1 December 2020	Not Applicable
BTB – IEE for West Battambang Wastewater Treatment and Collection System	11 November 2020	Not Applicable	11 November 2020
BTB – EMP for West Battambang Wastewater Treatment and Collection System	14 September 2020	Not Applicable	14 September 2020

## 2.4 National Approvals

14. An update on the necessary national approvals required for the project to proceed are presented in Table 5.

15.

**Table 5. Status of National Approvals for Environmental Documents**

Documents	Submitted to MOE	Approved By MOE:	Status – if not approved	Comment
BTB - IESIA for West Battambang Subproject	22 September 2020	01 December 2020	Approved	IEIA includes EMP
SRP – EMP for Siem Reap Subproject	Not Applicable	Not Applicable	Final	
BTB – IEE for West Battambang Subproject	Not Applicable	Not Applicable	Under update	Changes / improvements requested in ADB comments and observations, 04 December 2020.
BTB – EMP for West Battambang Subproject	Not Applicable	Not Applicable	Cleared for inclusion in the bid document	EMP cleared for inclusion in the bid document. Minor updates consistent with changes or improvements suggested in the IEE are expected. Final cleared EMP to be shared with the contractor for update to their CEMP. The contractor to re-submit the revised CEMP to the PMU for clearance.

## 2.5 Construction Environmental Management Plan Approvals

16. The status of the construction environmental management plan (CEMP) for each civil works package is shown in Table 6.

**Table 6. Status of CEMP Approvals**

Civil Works Package/ Subproject	CEMP Given to PMU	Approved by PMU:	Comment:
PWSSP/MPWT-01 Siem Reap Subproject	April 2019	Yes, May 2019	Updated/revised following comments.
MPWT-CW-2 West Battambang Subproject	Expected Q1 2021	Expected in Q1 2021	Contractor to submit to PMU for clearance.

### 3 ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION

#### 3.1 Environmental Performance

##### 3.1.1 Siem Reap Trunk Sewer

17. Table 7 gives the environmental impact mitigation measures in the Project EMP and the corresponding CEMP, as well as how the project is progressing with implementing the mitigation measures, for the Siem Reap Trunk Sewer Replacement subproject. For the Siem Reap subproject construction was completed in the previous reporting period (June 2020).

18. The evidence for the compliance is through a combination of:

- Site visits to observe site practices (site visit conducted September 2020);
- Consultation with affected people (consultations conducted in July 2020 as part of social safeguards and in September 2020 as part of site visits);
- Regular environmental reporting from construction supervisor and contractor.

**Table 7. Status of EMP Compliance Siem Reap Subproject**

Item	EMP Requirement (Mitigation Measure)	Compliance and Description (Yes, No, Partial)	Comment or Further Explanation if Needed	Reasons for Not Full Compliance
1	Backfilling and temporary reseal of road at manholes	Yes	Based on site visit, September 2020, backfilling and temporary reseal of road at manholes conducted satisfactory. Permanent seal to be provided under the road rehabilitation and upgrade (VO).	-
2	Site maintenance, clean-up and restoration	Yes	Based on site visit, September 2020, the site has been cleaned up, there are no construction materials, unsuitable material, and wastes remaining at the project site. No private or public structures have been damaged or disturbed. Road rehabilitation along full length recommended.	
3	Reinstatements to be verified and confirmed acceptable	Partial	Reinstatements outstanding will be completed along with road reseal; to be verified and confirmed acceptable through consultations.	Reinstatements will be along with road reseal as part of the road rehabilitation and upgrade once concept design cleared

19. For all 'Partial' or 'No' compliance issues in Table 7, the actions needed to solve the compliance issues are in Table 8 below:

**Table 8. EMP– Actions Needed for Compliance Siem Reap Subproject**

Item	EMP Requirement	Further Action to be taken	Date for Action	Who will Implement Action
Ad 3	Reinstatements to be verified and confirmed as acceptable	Reinstatement outstanding to be completed along with road resealing To be verified and confirmed acceptable through consultations	Expected H1 2021	Contractor

20. Information on environmental performance issues from previous environmental monitoring reports are shown in Table 9. Whether the action was completed or it is outstanding can be seen in Table 9.

**Table 9. EMP Compliance Outstanding Issues – Siem Reap Subproject**

EMP Requirement / Issue	Further Action to be Taken	Responsibility and Timing	Resolution	Required Action
Stabilization of the old trench is needed, and given the condition of existing road, rehabilitation of the full width along the entire length is recommended	Finalize concept design for the trench stabilization and road rehabilitation	PIAC, PMU, Q1 2021	Outstanding/ Await concept and detailed design	Confirm scope or extent of road resealing as project

### 3.1.2 West Battambang Wastewater Treatment and Collection System

21. Construction and EMP implementation have not commenced in the reporting period. Status of EMP compliance and EMP compliance issues will commence in next reporting period.

### 3.2 Health and Safety Performance

22. The health and safety impact mitigation measures in the Project EMP and how the project is progressing with implementing the mitigation measures, for all subprojects are presented in Table 10. For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. Thus, there has been no implementation of health and safety (H&S) impact mitigation measures in this reporting period.

**Table 10. Status of Health and Safety Compliance - All subprojects**

Item	Health and Safety Requirement	Compliance and Description (Yes, No, Partial)	Comment or Further Explanation if Needed	Reasons for Not Full Compliance
	Not applicable in the reporting period			

23. For all 'Partial' or 'No' compliance issues in Table 10, the actions needed to solve the compliance issues are shown in Table 11:

**Table 11. Status of Health and Safety Actions Needed for Compliance - All subprojects**

Item	Health and Safety Requirement	Further Action to be Taken	Date for Action	Who will Implement Action
	Not applicable in the reporting period			

24. Health and safety performance issues from previous environmental monitoring reports for this subproject along with their respective status off execution are summarized in Table 12.

**Table 12. Health and Safety Compliance Actions Outstanding Issues - All subprojects**

Health and Safety Compliance Action Outstanding	Further Action to Take	Responsibility and Timing	Resolution	Required Action
No issues outstanding				

## 4 ENVIRONMENTAL MANAGEMENT PLAN MONITORING

### 4.1 Environmental Quality Monitoring

25. Environmental quality monitoring requirements are defined in the Monitoring Plan section of the EMP. Table 13 gives a summary of the environmental quality monitoring requirements for each subproject.

**Table 13. EMP Environmental Quality Monitoring Requirements**

Subproject	Environmental Issue Monitored	Location	Parameters	Responsible Organisation	Frequency
MPWT-CW-2 Battambang Wastewater Treatment Plant and sewerage network	Water quality	Upstream and downstream of construction sites at nearest water body (canal or river)– two samples per site (Monitor when construction active)	pH, BOD <sub>5</sub> , COD, TSS, oil and grease, turbidity (NTU)	Contractor	Quarterly
MPWT-CW-2 Battambang Wastewater Treatment Plant and sewerage network	Air quality	Nearest residential receptors (2 locations)	TSP, PM <sub>10</sub> , CO, NO <sub>2</sub> , SO <sub>x</sub>	Contractor	Quarterly
MPWT-CW-2 Battambang Wastewater Treatment Plant and sewerage network	Noise	Nearest residential receptors (2 locations)	dBA	Contractor	Quarterly

*Legend: BOD<sub>5</sub> – Five-day biochemical oxygen demand; CO – carbon monoxide; COD – (total) chemical oxygen demand; dBA – A-weighted decibel NO<sub>2</sub> – nitrogen dioxide; NTU – nephelometric turbidity units; pH – unit of acidity; PM<sub>10</sub> – particle matter (10 micrometer size); SO<sub>x</sub> – sulfur oxides, TSP – total suspended particles, TSS – total suspended solids*

26. Table 14 gives information on the environmental quality monitoring implemented, during this reporting period. Detailed results compared to relevant national / international standards are in

27. Annex 1. For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. Thus, there has been no environmental quality monitoring implemented in the reporting period.

**Table 14. EMP Environmental Quality Monitoring Implementation**

Subproject	Environmental Issue Monitored	Location	Monitoring Date
N/A			

28. **Summary of Results – Noise.** For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. Thus, there has been no environmental quality monitoring implemented in the reporting period.
29. **Summary of Results – Surface Water quality.** For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. Thus, there has been no environmental quality monitoring implemented in the reporting period.
30. **Summary of Results – Groundwater quality.** For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. Thus, there has been no environmental quality monitoring implemented in the reporting period.
31. **Summary of Results – Air quality.** For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. Thus, there has been no environmental quality monitoring implemented in the reporting period.

#### 4.2 Consultation of Construction Phase Affected People Consultation

32. Information on the consultations that were undertaken during the period in order to understand the impact of the project on affected people and how effective the EMP mitigation measures are for residents, businesses and others around the construction sites are summarized in Table 15. For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. Thus, there has been no construction phase affected people consultations in the reporting period by project staff from the PIU and PMU.

**Table 15. Construction Phase Affected People Consultation**

Subproject	Consultation Date	Person Consulted / Location	Outcome / Issues	Corrective Action Needed	Action Implemented by (person/date)
PWSSP/MPWT-01 Siem Reap Trunk Sewer Replacement	N/A				
MPWT-CW-2 west Battambang Wastewater Treatment and Collection System	N/A				

## 5 COMPLAINTS, ISSUES, CORRECTIVE ACTION

### 5.1 Information Disclosure

33. Details of information disclosure activities undertaken during the period are given in Table 16:

**Table 16. Information Disclosure (including public meetings and information dissemination)**

Topic / Reason for Information	Disclosure Date	Method of Disclosure	Outcome / Results
SRP - House to house consultation, customer perception review, PIB distribution	8-10 July 2020	House to house consultation, interview, PIB distribution	Customer perception review conducted in July 2020. Consultation with HHs included distribution of updated PIBs along with clarification of: EM, GRM, complaints-form and log book. HHs updated on project progress and timeline for construction.
SRP - House to house consultation, customer perception review, PIB distribution	25-27 July 2020	House to house consultation, interview, PIB distribution	Customer perception review conducted in July 2020. Consultation with HHs included distribution of updated PIBs along with clarification of: EM, GRM, complaints-form and log book. HHs updated on project progress and timeline for construction.
SRP – consultation with local authorities and people along subproject site following completion of construction	September 2020	House to house consultation, interview	Verification of site clean-up and restoration and issues to be included in road rehabilitation and upgrade.
BTB - Site visit and public consultation meeting	24-25 July 2020	Public consultation meeting	Consultations as part of the IESIA, Present the project location, activities, and receive the issues, feedback, and comments, that concern to the environment.
BTB - Sewerage system, DMS/SES, compensation policy	3-25 November 2020	House to house consultation, interview, PIB distribution	DMS/SES
BTB - WWTP access road, DMS/SES, entitlements, GRM, PIB distribution	20 November 2020	Consultation of affected households	DMS/SES
BTB - Wat Leap market, DMS/SES, entitlements, GRM, PIB distribution	24 November 2020	Consultation of affected households and stall holders	DMS/SES

Topic / Reason for Information	Disclosure Date	Method of Disclosure	Outcome / Results
BTB - Beung Chhuok market, DMS/SES, entitlements, GRM, PIB distribution	25 November 2020	Consultation of affected households and stall holders	DMS/SES
BTB - National market, DMS/SES, entitlements, GRM, PIB distribution	25 November 2020	Consultation of affected households and stall holders	DMS/SES

*Legend: DMS – detailed measurement survey; EM – environmental management; GRM – grievance redress mechanism; HH – household; IESIA – initial environmental and social impact assessment; PIB – public information booklet; SES – socio-economic survey*

## 5.2 Grievance Redress Mechanism

34. Information on complaints about the project (which the PIAC is aware of) during this reporting period is presented in Table 17. The table includes:

- Details of complaints or issues raised during the reporting period either through GRM entry points; in consultation sessions; and any other way that the project team is aware of
- Details of the person making the complaint
- Action needed and by when
- Status of the complaint/issue resolution at the end of the reporting period

35. Generally, where possible attempt is made to solve all issues as quickly as possible through informal discussions between the affected people and the contractor. As there was no construction in either Siem Reap or Battambang during the six months to December 2020, no grievances were raised.

**Table 17. Project Complaints or Issues**

Details of Complaint / Issue Raised	Detail of Person (Date, Name, Contact Details)	Action Needed and Date	Comment / Resolved?
SRP – none received during the period			
BTB – none received during the period			

36. Table 18 gives information on all issues raised in previous periods which are not yet resolved. All issues raised in previous SEMR-E have been resolved.

**Table 18. Project Complaints or Issues – Unresolved from Previous Periods**

<b>Details of Complaint</b>	<b>Detail of Person (Date, Name, Contact Details)</b>	<b>Action Needed &amp; Date</b>	<b>Reason this is still not resolved</b>
No complaints pending resolution			

### 5.3 Corrective Action

37. Information on any formal corrective actions that has been issued to the contractor in order to improve environmental performance are summarized in Table 19. As there was no construction in either Siem Reap or Battambang during this reporting period, no corrective actions have been necessary or issued.

**Table 19. Corrective Action Issued**

<b>Reason for Corrective Action</b>	<b>Date Issued</b>	<b>Outcome</b>	<b>Comment / Follow Up</b>
SRP – no correction actions issued during the period			
BTB – no correction actions issued during the period			

## 6 CONCLUSIONS AND RECOMMENDATIONS

### Conclusion:

38. For the Siem Reap subproject construction was completed in the previous reporting period and for the Battambang subproject construction is yet to commence. On that basis there has not been any implementation of the EMP in the reporting period. The environmental safeguards are considered adequate.
39. During the site visit to Siem Reap subproject in September 2020, it was concluded that backfilling and temporary reseal of the roads at manholes is satisfactory and the site has been cleaned up, there are no construction materials, unsuitable material, and wastes remaining at the project site, and no private or public structures have been damaged or disturbed. The permanent seal will be provided under existing trench stabilization and road rehabilitation works once the exact scope and extent of the works has been finalized as currently the works overlap with another project being commenced under national budget.

### Recommendations:

40. With respect to Siem Reap subproject, trench stabilization is required and condition of existing road in a condition where rehabilitation is recommended along the full length of the project roads. The final concept for trench stabilisation and road rehabilitation, will include permanent seal of the road and the reinstatements outstanding will be completed along with road reseal.
41. With respect to Battambang subproject, the main recommendations relate to the preparation for environmental management by the contractor, including a CEMP with associated sub-plans as detailed in the EMP. The contractor is to nominate environment, health and safety officer(s) and community liaison / GRM focal point. Training needs and activities will be assessed and conducted following the nominations/appointments.

## **Annex 1 Environmental Quality Monitoring Results**

No environmental quality monitoring conducted in the reporting period in Siem Reap or Battambang.

## Annex 2 Photo Record – Visits, Monitoring, Consultation

### Photographs of Site Visits



*Siem Reap: The manhole sites in the roadway are well filled and maintained (September 2020)*



*Siem Reap: Road conditions in Thmei and Phear Chay village with access over open canal (September 2020)*



*Siem Reap: The poor road section in Vihear Chean village with inadequate side drainage (September 2020)*

**Photographs of Environmental Quality Monitoring**

No environmental quality monitoring conducted in the reporting period in Siem Reap and Battambang.

Photographs of Consultations



*Siem Reap: Consultation with local people/affected people along the subproject site (September 2020)*

Annex 3 Slides, ADB and AFD Progress Review Mission, 7-11 December 2020

30 Siem Reap Subproject Implementation

Visual impact – loose material

Gravel mixed with cement is spread by cleaning crews

Temporary seal compacted with heavy machinery to reduce loose gravel

Loose soil backfill and gravel pose a risk to drivers



30

32 Siem Reap Subproject Implementation

Visual impact – site cleaning

Dismantling site storage and collect rubbish

Cleaning up storage site

Surface compaction and temporary seal



32

31 Siem Reap Subproject Implementation

Visual impact – road cleaning

Water on road from pipe water-testing

Cleaning crews sweeping street of spilt excavated material and excess water

Site cleaned up



31

33 Siem Reap Subproject Implementation

Remedial works – secondary structures

Replacing damaged pavement tiles



33

34 Siem Reap Subproject Implementation

Traffic control



Limited scope for traffic redirection (detour) around pipeline route  
 ⇒ Traffic control is the only practical option



34

36 Siem Reap Subproject Implementation

Night traffic safety



Improved signage ⇒



Night flagman at critical times and locations ⇒




Inadequate signs at night pose a driver hazard



36

35 Siem Reap Subproject Implementation


Traffic control




Without flagmen:  
 ← daily traffic congestion



← chaotic traffic flow




Flagmen at either end of a working pit has been reasonably effective




35

37 Siem Reap Subproject Implementation


Credits to the contractor




Clearing the irrigation canal alongside the road



Extensive community contact along narrow road section ahead of New Year



Corporate social responsibility: road repairs for community along traffic detour road



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38 Battambang Subproject Environment

Service Area Work Environment

Mainly asphalt road

Typical footpath setting

Some RC roads

38

40 Battambang Subproject Environment

Terminal Pump Station Site

- Existing WWTP site
- Use part for new TPS
- site needs to be filled

40

39 Battambang Subproject Environment

Deep trunk sewer along Route 3

- Trunk sewer to be installed using trenchless technology

← North end

→ Mid section

South end ↓

39

41 Battambang Subproject Environment

Force Main Route

Near pump station

Outer edge of built up area

Near WWTP with canal near discharge point



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### Battambang Subproject Environment

New WWTP Site

- Treatment plant site needs to be raised by about 1.5 m to 4.5 m
- Water depth 700 mm during Oct floods
- Existing site use is paddy field
- Groundwater at 3 m below ground level





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### Battambang Subproject Environment

Existing Access Road

- Access road needs to be raised by 200 mm to 800 mm
- Currently farmer access track only
- In future to be used by trucks



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