

Environmental Monitoring Report

Semi-Annual Report no. 5
For the period covered January-June 2019
Project Number: 47381-001
December 2019

SRI: Mahaweli Water Security Investment Program

Upper Elahera Canal Project (UECP)

Prepared by Ministry of Mahaweli Development and Environment with the assistance of Program Management, Design and Supervision Consultant (Joint Venture Lahmeyer International GmbH – GeoConsult ZT GmbH) for Democratic Socialist Republic of Sri Lanka and the Asian Development Bank.

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Mahaweli Water Security Investment Program

Semi Annual Environmental Monitoring Report (SAEMR) No. 05 (January to June 2019) for Upper Elahera Canal Project (UECP)



**Ministry of Mahaweli
Development and Environment
Sri Lanka**



December 2019
Final Report

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Subject Project Report

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1 INTRODUCTION

1.1 Scope of the Report

1. This Semi Annual Environmental Monitoring Report (SAEMR) No. 5 is prepared to update the progress of Upper Elahera Canal Project (UECP) with respect to environmental safeguard aspects for the period of January to June 2019, which fulfils Asian Development Bank (ADB) requirement to submit a SAEMR to ADB and Central Environmental Authority (CEA) for the “Category A” projects as documented in FAM¹ and EARF².

2. The purpose of this report is to ensure that the Project is implemented with due concern for environmental and social safeguards according to the ADB's Safeguard Policy Statement (SPS) 2009, and specifically to ensure that these issues are adequately addressed in compliance with the requirements of ADB. Further, this report is to assess the progress with implementation of the program in complying with the approved Environmental Impact Assessment (EIA) including Addendum to the EIA: UECP Tranche 1 packages (August 2017) and Environmental Management Plan (EMP)³ as per the stipulation No. 14.3 of the EIA approval No. 08/EIA/WATER/07/2012 issued by CEA on 23 February 2016, renewed approval by CEA on 11.03.19 by Letter Ref. Ref.08/EIA/Water/07/2012/ Vol 3, and approval for the addendum (Ref.08/EIA/Water/07/2012/Vol 2 dated 11 April 2018).

3. This SAEMR is prepared referring to the Annex 2 of EARF (Nov 2014) that needs to be presented in the monitoring report and **Table 1-1** summarizes the content status as well as the reasons for the elements that are not covered in this report during the monitoring period from January to June 2019:

Table 1-1: SAEMR content and status update as per Annex 2 of EARF²

#	Element	Status update in this version of SAEMR
(i)	Background/context of the monitoring report (adequate information on the project, including physical progress of project activities, scope of monitoring report, reporting period, and the monitoring requirements including frequency of submission as agreed upon with ADB);	Covered under Chapter 1 of this SAEMR
(ii)	Changes in project scope and adjusted safeguard measures	Covered under Chapter 2 of this SAEMR
(iii)	Qualitative and quantitative monitoring data	Only Qualitative monitoring data is included, as the contractor was unable to carry out the environment quality monitoring based on the EMP as instructed by the Engineer in the project affected areas during the monitoring period
(iv)	Monitoring parameters/indicators and methods based on the EMP previously agreed upon with ADB	
(v)	Monitoring results compared against previously established benchmarks and compliance status	Covered under Chapter 3 of SAEMR with respect to monitoring results against obtaining necessary approvals, adequacy of environment mitigation measures, documentation etc.
(vi)	Monitoring results compared against the objectives of safeguards or desired outcomes documented (environmental impacts avoided or minimized, etc.);	

¹ Paragraph 60 of Facility Administration Manual (FAM), June 2015 prepared by MMDE.

² Paragraph 111 of Environmental Assessment Review Framework (EARF) November 2014 (updated in June 2017) by MMDE.

³ Environmental Impact Assessment Report (EIAR) dated June 2015 and approved by CEA on 31.03.2016.

#	Element	Status update in this version of SAEMR
(vii)	If noncompliance or any major gaps identified, include a corrective action plan	Covered in this SAEMR related to KMTC unapproved forest clearing
(viii)	Records on disclosure of monitoring information to affected communities	No affected communities related to the active construction packages as the project area are within the wildlife / FD protected areas
(ix)	Identification of key issues, or grievances from affected people, or recommendations for improvement	Identified key issues recorded given under Chapter 3, but no grievances directly related to the active construction packages
(x)	Monitoring adjustment measures recommended based on monitoring experience/trends and stakeholder's response	Addressed in the report under Chapter 4
(xi)	Information about actual institutional arrangement for implementing the monitoring program/plan provided or adjusted, as may be required	No changes on the setup established in carrying out monitoring through the EMS for UECP and ES of PMDSC and Contractor's EOs
(xii)	Proposed items of focus for the next report and due date	Included under Chapter 5 of the report

4. This SAEMR for UECP is prepared by the Environmental Specialist of PMDSC based on the monthly monitoring and progress reports received from the Environmental Monitoring Specialist (EMS), and the updates which were received from the Environmental Specialist of PMU and Senior Environmental Officer for PIU of UECP.

1.2 Current status of UECP

5. There are two contracts financed under MWSIP Tranche 1 and 2 for which construction work started: UECP-ICB-1 and UECP-ICB-2B. Bidding is in progress for UECP-ICB-2A construction package for which invitation for bids was advertised on 05 Feb 2019 and the bid closing was on 19 June 2019.

6. The key details related to the active construction packages are summarized in **Table 1-2**.

Table 1-2: Details of the UECP contract packages as of June 2019

PACKAGE	UECP-ICB-1	UECP-ICB-2B
Work Description	Construction of Upper Elahera Canal from 0+100 km to 6+226 km	Construction of Upper Elahera Canal, Kaluganga - Moragahakanda Transfer Canal (KMTC) 0+000 km to 8+830 km
Environmental Significance of the Project Area	The proposed canal under UEC-ICB-1 passes through the Elahera-Giritale sanctuary area as a cut-and-cover canal.	<ul style="list-style-type: none"> Except for the short open canal, and two short aqueducts, KMTC consists of 2 tunnels that traverse through Forest Department (FD) lands Tunnel 1 - 1,940 m long (chainage 0+557.77 to 2+467.77 km), with

PACKAGE	UECP-ICB-1	UECP-ICB-2B
		overburden varying between 5 and 80 m. ■ Tunnel 2 - 6,040 m long (chainage 2+732.77 to 8+772.77 km), with overburden varying between 6 and 378 m.
Package No.	MMDE/MWSIP/ADB/UECP/ICB-1/3267-3268-RI/ICB/2016/002	MMDE/MWSIP/ADB/UECP/ICB-2B/P47381-005-SRI/ICB/2016/026
Date of Award	11.11.2016	05.04.2018
Delay compared with Contractor's Original program	11.8 months	5.0 months
Delay compared with Contractor's Current program	11.8 months	NA
Name of the Contractor	M/s. CML-MTD Construction Limited	M/s. Sinohydro Corporation Limited
Address	No. 155, Dharmapala Mawatha, Colombo - 07	5 th - 7 th Floor, No. 456, R. A. De Mel Mawatha, Colombo 3.
Contract Amount LKR (incl. VAT)	3,742,442,875.47	8,218,575,075.94

7. The following sections provide a brief description of the physical progress of each contract package mobilized under UECP as of June 2019.

1.2.1 UECP-ICB-1

8. Summary of the physical progress as of June 2019 by the UEC-ICB-1 Contractor M/s. CML-MTD Construction Limited is described in the table below and in **Figure 1-1**.

Topographic surveys:	Ongoing; progress LS 85% & CS 85%				
Preparation of Construction Drawings by Contractor:	Ongoing; completed Construction Drawings for rectangular and circular conduits - progress 95%				
Construction work:	<p>The construction activities of UEC ICB 1 (0+100 km to 3+980 km) are being carried out in 4 sections starting from the Moragahakanda spillway. The sections where the construction work is going on are as follows, ensuring that the excavated section at a stretch is limited to maximum 350 m:</p> <ul style="list-style-type: none">(a) Section 04 - From 0+100 to 0+916;(b) Section 01 - From 0+916 to 1+420;(c) Section 02 - From 1+420 to 2+320;(d) Section 03 - From 2+320 to 3+980. <p>Physical Progress of the construction work as of June end 2019 is as follows;</p> <table><tr><td>Site clearing, tree felling - progress 100%</td></tr><tr><td>Excavation – progress 58%</td></tr><tr><td>Reinforcement and concreting:</td></tr><tr><td>rectangular conduit (Base) - progress 65%</td></tr></table>	Site clearing, tree felling - progress 100%	Excavation – progress 58%	Reinforcement and concreting:	rectangular conduit (Base) - progress 65%
Site clearing, tree felling - progress 100%					
Excavation – progress 58%					
Reinforcement and concreting:					
rectangular conduit (Base) - progress 65%					

	circular conduit - progress 25%
	Backfilling works with Reforestation: - progress 5%
Concrete batching plant:	Batching plant installed and in operation; field laboratory in operation
Construction activities	Slow construction progress: inadequate manpower deployment and resources
Issues effect on progress	Financial difficulties of the Contractor have continued, resulting in further progress delays.

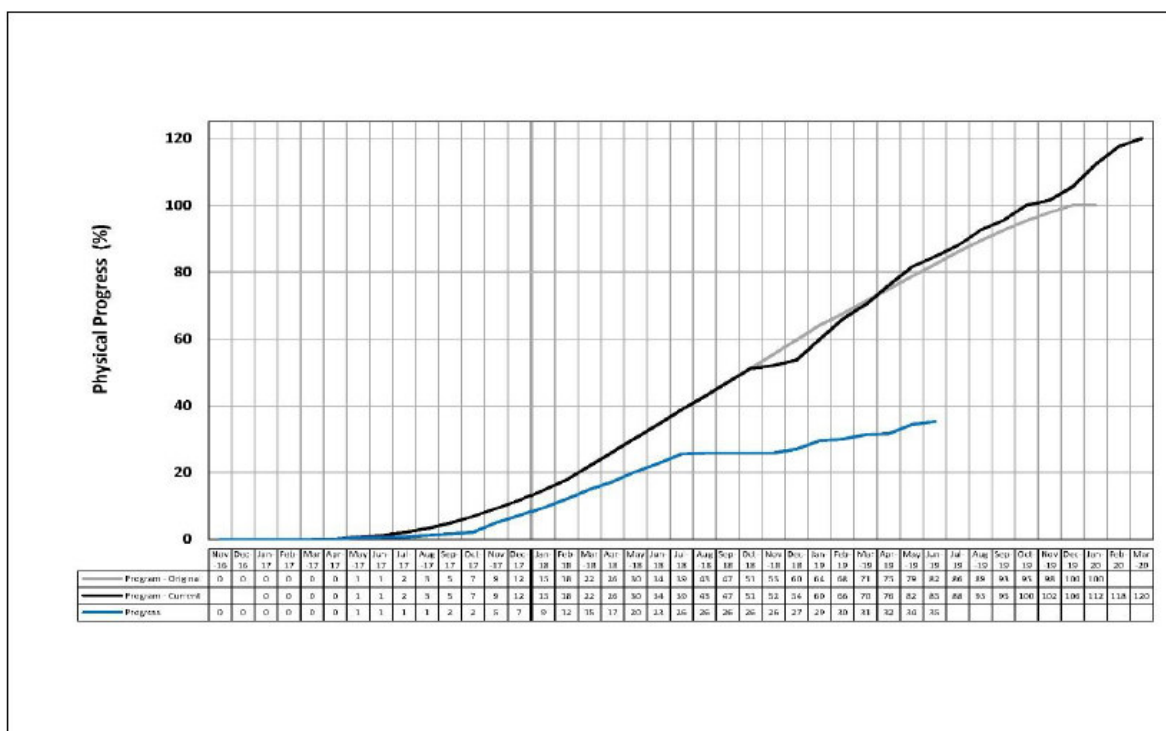


Figure 1-1: Physical progress of UECP-ICB-1 as of June 2019

1.2.2 UECP-ICB-2B

9. Summary of the physical progress as of June 2019 by the UEC-ICB-2B Contractor M/s. Sinohydro Corporation Ltd. is described in the table below and in **Figure 1-2**.

Topographic surveys:	Completed except access road section 'd'; road section 'd' complete 10%
Preparation of Construction Drawings by Contractor:	Tunnel excavation support works 100%, Bridge 25%, Tunnel permanent support 0%, Open canal 50%, Access road 10%
Construction work:	Completed 11.7%
Concrete batching plant construction Progress:	Leloya - 95%, Kambarawa - 50%
Construction activities	Tunnel 1: 31.3 m of 1,910 m Excavation Tunnel 2: 161.1 m of 6,040 m Excavation All tunnel portal excavations completed except T1 Inlet portal. Other structures: Cut-and-cover excavation completed Ch: 2,620 to 2,720 km

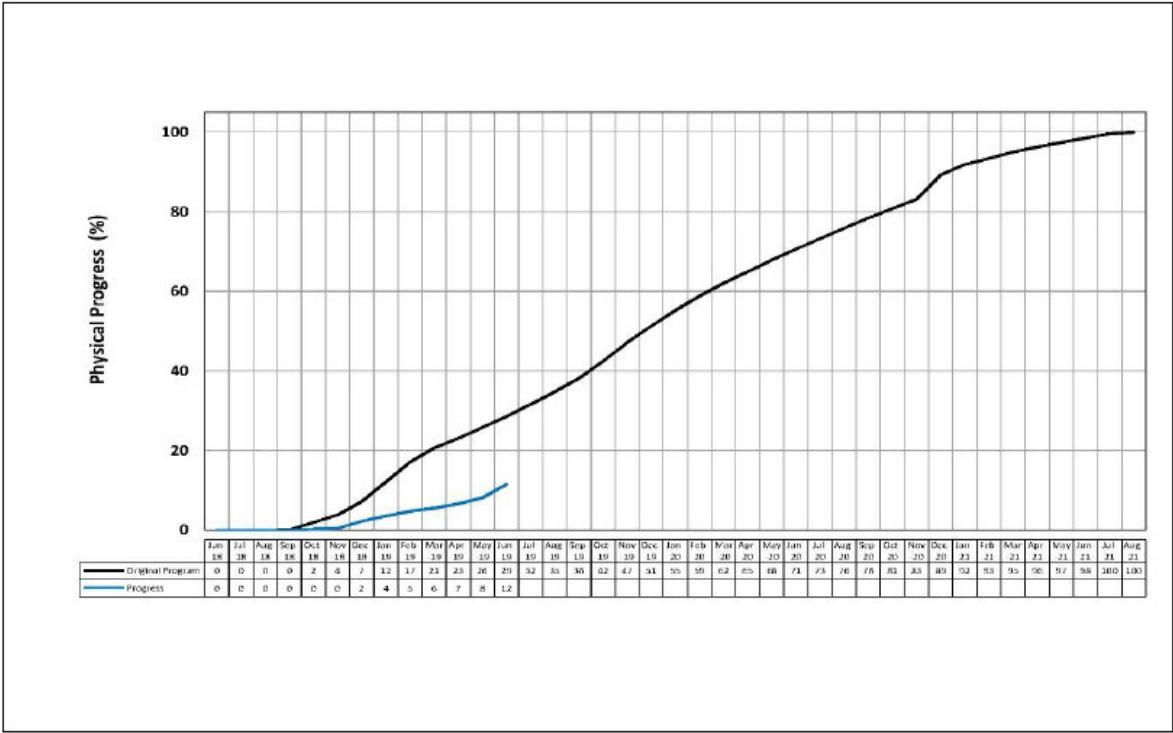


Figure 1-2: Physical progress of UECP-ICB-2B as of June 2019

2 CHANGES IN PROJECT SCOPE AND ADJUSTED SAFEGUARD MEASURES

2.1 UECP-ICB-1

2.1.1 New disposal site to manage increased excavated rock quantities

10. The excavated rock quantities have been increased compared to the estimates made during the planning stage. Both usable and unusable material has been piled up in the construction area, and also outside the approved area due to lack of adequate space for dumping. This became a serious environmental issue as it obstructed the animal movement paths in the Elahera–Girithale Sanctuary area, as well as there was a possibility of violating the ADB SPS (2009) by using wildlife protected areas for temporary disposal yards.

11. Since the project area and the adjacent area fall within protected areas, the Contractor requested the Engineer and Employer to obtain required permission for a suitable disposal land. Considering the significance of the environmental issue, the Engineer (PMDSC) requested the Employer (ref. PMDSC-UEC-Site/ICB 1/PD-PIU/097 dated 10.08.2018) to support the Contractor to identify and obtain approvals for additional disposal yards. Responding to the request, the Employer arranged the 3 old Moragahakanda quarry sites located in the Kaluganga area with the conditional approval of DWC issued on 04 January 2019 (Ref. WL/06/01/01/48-X). The 3 locations are as follows:

- (i) Site 1 – 578794.046 N / 501936.310 E
- (ii) Site 2 – 576488.820 N / 501936.310 E
- (iii) Site 3 – 576182.080 N / 501992.350 E

12. The Contractor was informed on 14 January 2019 to use operations of the approved permanent disposal site complying with the following requirements and conditions:

- (i) Contractor to submit a comprehensive Method Statement (MS) fulfilling the regulations and conditions stipulated in the above said approval letter from the DWC for Engineer's approval prior to commence the operations of the disposal site.
- (ii) Contractor to fulfil following conditions as per PMDSC recommendations:
 - a) Announce the dumping site by a name board, barricading and demarcating the boundary;
 - b) Levelling of the filling from 1 m layer to 1 m layer adopting a mild slope to allow natural surface runoff at the locality;
 - c) Application of all safety aspects as assurance for workers, outsiders and the wildlife in the area.

13. However, the Contractor did not meet the required level of excavations, and hence the use of additional identified disposal areas was not yet required. Also, the Contractor was unable to complete the required documentation as mentioned under the previous paragraph.

2.1.2 Contractor's poor work performance

14. Due to the inadequate manpower deployment and resource allocation by the Contractor, the construction progress was slow throughout the monitoring period. Hence, the site maintenance work has been unattended, and the environmental issues notified were not completed due to lack of required resources. The approved environmental officer of the Contractor was absent since 10 April 2019; the new EO was appointed mid of June 2019.

15. An action plan was prepared and issued to the Contractor on 26 April 2019 (Ref. PMDSC – UEC-Site / ICB 1/ PD-PIU/ 132). The action plan is given in **Annex 1**.

16. The key adjusted safeguard measures for the identified key issues are described in **Table 2-1**.

Table 2-1: Key adjusted safeguard measures for the identified key issues UECP-ICB-1 proposed by the Engineer

Observation	Adjusted safeguard measures
1. The electric fence and small mesh net are not properly maintained; gaps in the fences will result in animals falling into the excavated sections.	<ul style="list-style-type: none"> EMS attended to the issue with the Contractor's electrician and the support of DWC to check the operation of the electric fence and maintenance of the issues. Contractor was informed about the required measures in writing and at the meetings held with the Contractor.
2. No dust barriers and poor watering.	<ul style="list-style-type: none"> Contractor was advised to replace the damaged dust barriers around the batching plant and labour camp areas, including canteen, but has failed to achieve this before the end of the monitoring period. Deployed one additional bowser to manage dust at the site and surrounding areas.
3. Runners formed on the excavated slopes with risk of eroding / collapsing for such sections developing.	<ul style="list-style-type: none"> The Contractor was instructed to attend to required erosion control and slope stabilization measures, but he has failed to achieve this before the end of the monitoring period
4. Stagnant water in excavated areas vulnerable for mosquito breeding	<ul style="list-style-type: none"> RE /EMS arranged dewatering through the Contractor
5. Site cleanliness is very poor; cement waste and other waste materials, unwanted pieces of equipment, construction left over is put everywhere.	<ul style="list-style-type: none"> Instructions were given to the Contractor as follows: (i) attend to site cleaning and provide adequate staff for the Environmental Officer to attend daily waste management work at the site, (ii) train supervising staff to educate the labourers to attend day to day site cleaning. However, due to limited resource availability the recommended actions were not attended by the Contractor.
6. Spreading of potential invasive species, <i>Muntingia calabura</i> (jam) has increased along the open sections in the ICB-1 area. This is harmful to the biodiversity in the wildlife sanctuary area as these species would control the ecological balance in the area by threatening the other forest trees.	<ul style="list-style-type: none"> Contractor was instructed to remove the potential invasive species and to dispose as per standard method of disposal to avoid further spreading of the removed species. However, due to limited resource availability the recommended actions were not attended by the Contractor.

17. Considering the prevailing situation in UEC-ICB-1 site, the Director Operations of the DWC head office visited the site on 02 April 2019. His recommendation and clarifications were officially communicated to the Employer on 08 May 2019 (Ref. L /6/1/1255 -1). The key recommendations of the DWC and the PMDSC corrective actions and progress are summarized in **Table 2-2**.

Table 2-2: DWC recommendations and PMDSC corrective actions

	Recommendation	PMDSC Corrective actions and progress up to date
1.	Ensure stockpiling of "topsoil" during excavations and placing same as the "top layer" for tree planting atop during restoration at the completion of construction.	<ul style="list-style-type: none"> The recommendation was followed in the already tree planted area, by using nutrient enriched topsoil (300 mm depth) which was stored in the temporary stockpile areas and used for backfilling prior to plant the trees. Topsoil was spread over the unclassified materials and levelled for the reforestation. Drawings have been altered to cater for this "top layer" requirement.
2.	Providing proper diversion facilities at the stream crossing.	<ul style="list-style-type: none"> Drawings of the canal crossing natural streams have been revised, finalized by the Contractor, and approved by the Engineer, ensuring the environmental requirement and the virgin pattern of the ecosystem is conserved as far as possible
3.	Filling the abandoned quarry sites (mines) of Moragahakanda Project by using the spoil earth material which is currently dumped in ad-hoc manner on the Project site.	<ul style="list-style-type: none"> Total excavation and backfilling quantities are nearly equal due to backfilling quantities of section 4 being almost double in quantity. The area of section 4 has to be filled high to cover the structure. Please refer to Annex 2 for the summary of the excavation and backfilling quantities estimated in UEC-ICB-1. Therefore, filling of the abandoned Moragahakanda quarry site (approved by DWC) has to be considered at the final phase of the UEC-ICB-1 only if any excess material will be remaining.
4.	Proper maintenance of the electric fence and wire-mesh net to prevent felling of wild animal into canal under construction.	<ul style="list-style-type: none"> The electrical fence established for protection from elephants is being checked/maintained daily as a routine practice by involving workers and electrician. A new safety net was established in March 2019; re-fixing has started on 03 August 2019 and continues. Re-fixing will be completed by end of August 2019.
5.	"Map" the existing ecosystem along canal trace to define suitable type of restoration in consultation with relevant stakeholder agencies.	<ul style="list-style-type: none"> To be done

2.2 UECP-ICB-2B

2.2.1 Access to Tunnel 2 outlet portal via Moragahakanda reservoir

18. Due to the high-water level at the proposed Bridge No. 2 location at the end of section "f" the Contractor tried to use an alternative access by damaging the critical habitat under the Beligoda Forest Reserve across the Kabarawa Oya (stream) to reach the Tunnel 2 (T2) Outlet portal. With the Engineer's and Employer's action upon temporary suspending part of the Works (PMDSC-CRE-UEC/ICB-2B/ShCL/005 dated as 26 Feb 2019) including the construction and operation in section "f" subjected to conditions⁴, the Contractor was advised to consider transfer across the impounded reservoir by boat/barge to T2 Outlet.

⁴ (i) Method Statement for restoring section "f" including the damaged area as per the instructions of the FD;
(ii) attending to corrective actions for the disturbed section "f" area which includes pulling up trees pushed off to the slope, completely remove debris due to tree felling (roots, branches, trigs, fallen rocks, earth etc), facilitate the slope vegetation to regrow, measures to limit erosion on the side slopes and control siltation by putting silt traps where appropriate, provision of adequate cross-drainage, appropriate stream diversion where required;

19. The route considered by the Contractor until the Bridge No. 2 is constructed upon lifting the suspension order of using section “f” access road fulfilling required conditions is as follows (**Figure 2-1**):

- (i) From Hattota Amuna to Dock A near the Moragahakanda Contractor’s camp by land (alternative locations A1 and A2);
- (ii) Using the water way of Moragahakanda reservoir from Dock A to Dock B near Tunnel 2 outlet portal by using a 10-ton boat;
- (iii) The route for a 60-ton boat is from Hattota Amuna to Dock A1, via Moragahakanda reservoir to Dock B and T2 Outlet portal.

20. Method Statements considering the environmental and safety requirements were submitted by the Contractor and approved by the Engineer. Approval from the Mahaweli Authority was granted by the Director, Hattota Amuna Operation and Maintenance on 18 March 2019 through the letter ref. DIR/DS&SP/MORA -29, highlighting that any damage to the reservoir or the associated environment should be bared by the project.

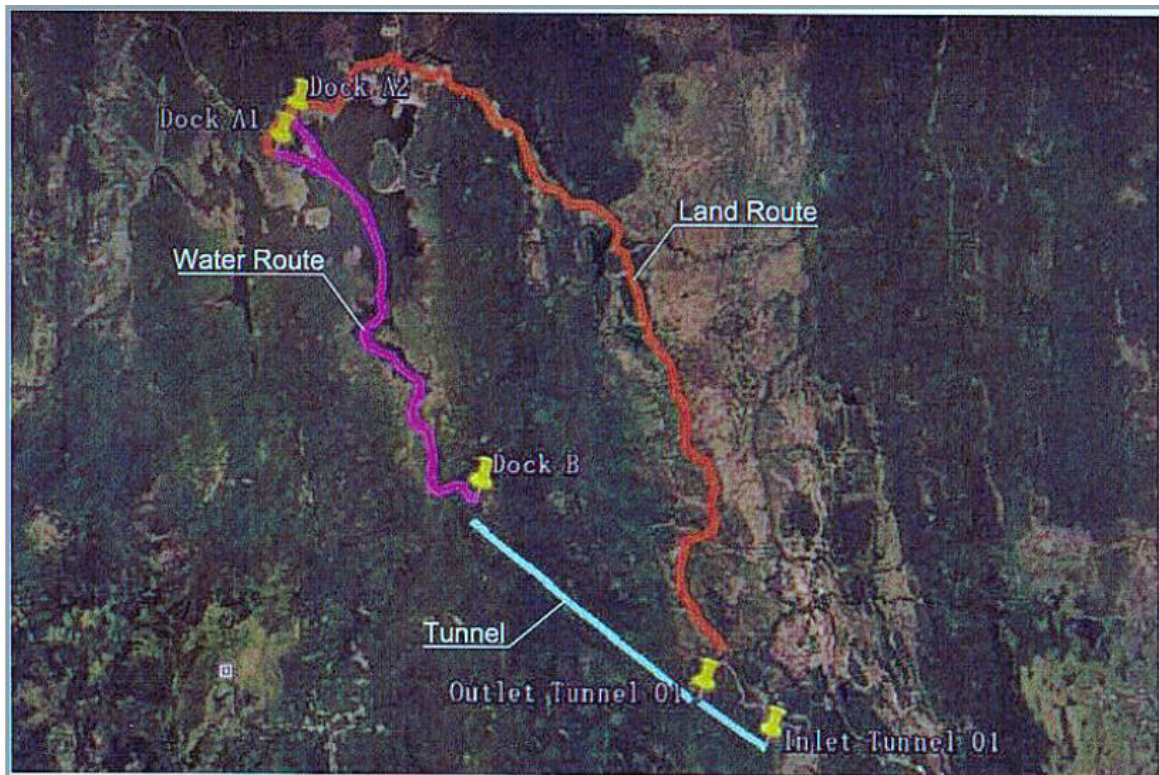


Figure 2-1: Proposed road map for the water transfer

2.2.2 Additional land in the Tunnel 2 Outlet area

21. Based on the Contractor’s proposal dated 06 February 2019 through letter ref. L-KMTC-2019049, a field inspection was arranged by the Employer (PD-PIU) with the participation of the Contractor’s, Engineer’s and Forest Department (FD) relevant officials on 26 February 2019. As shown in **Figure 2-2**, the proposed additional area of 0.845 ha beyond the approved area in the EIA for Contractor’s temporary facilities such as warehouse, Employers and Engineers sub-camp, dock area

(iii) attending corrective measures for the additionally disturbed areas as per NCR 1; (iv) carry out water quality monitoring along the affected area identifying adequate sample locations, (v) attend measures to avoid spreading of invasive Alien species (IAS).

etc. was released by the landowner, the Conservator forest of the FD on 12 April 2019 through letter ref. FD/EC&M/ID/NCP/UEC/2012.

22. This additional land requirement has arisen to replace sensitive water sources and springs found within the 0.73 ha of the lands fall within the previously allocated 3 ha of lands released for construction purposes. The FD had granted the approval subject to following conditions:

- (i) The boundaries to be demarcated using tall fencing structures which can visibly demarcate the forest protected areas.
- (ii) Display-sign-boards with clear instructions not to dispose waste into the adjacent forest lands in Chinese and Sinhala languages.
- (iii) Electric fence to be established without disturbing the wildlife movements.
- (iv) There should be no additional tree cutting in the substituted land section due to these changes in the land area.
- (v) The reserved forest section shall be maintained with planting of native trees such as “Kumbuk”, “Mee”, “Domba” at a satisfactory level acceptable to the FD.



Figure 2-2: Additional area at Tunnel 2 Outlet portal, for which approval was sought

23. The above additional land substitution has been communicated to the CEA for their concurrence on 25 April 2019 through letter ref. PD/UEC/ENV/Tunnel/47-A1/59 enclosing the FD approval, but CEA has not yet responded to this matter.

2.2.3 Other scope changes

24. In addition to above changes, the following environmentally friendly changes were introduced by the Engineer with the Employers consent:

- (i) The original proposal of trapezoidal open canal section (0+000 km to 0+392.8 km) at the initial stretch has been replaced with a rectangular open canal section to avoid disturbances of the associated forest lands. Due to the existing steep slopes in the area, the width of the construction boundaries would have expanded more than 100 m affecting the already constructed Kaluganga Reservoir LB canal. The design change of section shape avoids the removal of about 286 trees over 30 cm girth when constructing a trapezoidal open canal.

- (ii) Bridge No. 1, proposed at the start of the road section “f”, was replaced by a cause way type culvert ensuring adequate passage of water from Lel Oya into Moragahakanda reservoir based on the field investigations by the Engineer. This will be environmentally positive as the construction of bridge at this location will significantly disturb the sensitive ecosystem.
- (iii) Considering the geological profile of the area, Tunnel 2 outlet top slope shall be protected with 100 mm thick wire mesh shotcrete replacing the originally proposed turfing.







3 ENVIRONMENTAL MONITORING FINDINGS

25. This section summarizes the key environmental issues recorded during the monitoring period from January to June 2019, and the corrective actions taken by the Contractor.

3.1 Qualitative records

3.1.1 UECF-ICB-1

26. As described in the earlier sections, due to lack of continuous progress of the construction work, unattended routine site cleaning environmental issues described under section 2.1.2 were noted. The Contractor was instructed to attend the required corrective actions. In addition, following issues were noted and corrective actions were attended.

Description of issue / date/ photo	Location	Env. Impact/ Significance	Corrective action taken/ photo
Dust generation 	Entire project area	Air pollution and health hazards	
Damaged small mesh net and poor maintenance to the electrical fence 	Section 2	Falling of big animals into deep excavation	 Repaired the damaged fence
 Poor maintenance of planted trees and no periodical progress reports submitted	Section 1	Plants weak and tend to die	 Arranged watering and manuring

3.1.2 UECP-ICB-2B

27. A significant environmental issue was the result of the Contractor's unforeseen damage by clearing unauthorized a forest strip which falls within the Beligoda Forest Reserve (FR) under Matale District Forest Officer (DFO). This event happened on 24 December 2018. Thereafter the situation was closely monitored, relevant actions were taken as per Corrective Action Plan (CAP) prepared and approved by ADB.

28. A summary of the updated CAP with status as at the end June 2019 is given in **Table 3-1**.

Table 3-1: Updated Corrective Action Plan (CAP) to resolve the damage due to clearing an area under Beligoda Forest Reserve

	Action	By whom	By when	Current progress	Monitoring mechanism	Verification
A	Immediate Actions					
A-1	Contractor was instructed to stop work within and beyond Section "f" and barricade the area, and NCR No. 02 (Annex 2) was issued	RE	24.12.18	Achieved	RE, EMS of PMDSC	IEMS, ES-PMU, ES-PMDSC; SEO-PIU
A-2	PMDSC informed PD-PIU / PMU to facilitate the Engineer for rectifying the non-compliance action	TL-PMDSC	24.12.18	Done	NA	NA
A-3	PMU confirmed facilitation for corrective actions and requested a joint site inspection by 28/02/2019 with PMU, PIU, PMDSC and Contractor.	PD-PMU	26.12.18	Done	NA	NA
A-4	Joint site inspection carried out with the participation of FD, PMU, PMDSC, PIU and Contractor's staff (Synohydro)	PMU	28.12.18	Done	NA	NA
A-5	Rapid ecological and environmental survey; preparing Incident Report	ES and EMS of PMDSC	1 week from 28.12.18	Done by PMDSC	NA	NA
A-6	Letter informing TL to adopt the key decisions taken at the joint site inspection and meeting held on 28.12.18, and informing about the scheduled joint inspection with DFO and PD-PMU	PD-PMU	31.12.18	Done	NA	NA
A-7	Letter instructing Contractor to adopt	PMDSC	31.12.18	Done	NA	NA

	Action	By whom	By when	Current progress	Monitoring mechanism	Verification
	the key decisions at the joint site inspection of 28.12.18. Further, since this damage is a non-reversible, highly significant damage and resulted in considerable habitat loss, and damage to the critical fauna and flora species inhabiting the associated sensitive habitats, it was decided that the damaged area SHOULD NOT BE RELEASED FOR ANY CONSTRUCTION PURPOSE under MWSIP or any other project activity.					
A-9	Preparation and submission of the self-evaluation report and habitat restoration plan by the Contractor.	Synohydro	01.01.19	The report submitted by the Contractor was not up to the standard. The Contractor submitted a MS describing the restoration of disturbed section "f" on 12 March 2019, and it was approved with comments on 18 March 2019.	EMS of PMDSC	IEMS, ES-PMU, ES-PMDSC;
A-10	Joint inspection with DFO and PD-PMU and confirmation of continuation of suspension of Contractor's work in the section "f" and beyond the section "f"	ES - PMU	03.01.19	Done	NA	NA
B	Medium Term Actions					
B-1	Submission of Incident Report	PMDSC	03.01.19	Done	NA	NA

	Action	By whom	By when	Current progress	Monitoring mechanism	Verification
	prepared by PMDSC to PMU advising to share with ADB and relevant stakeholder agencies					
B-2	PD-PMU informed FD (CGF) with the Incident Report about the immediate actions taken to prevent further damage and proposed corrective measures for FD recommendations.	PD-PMU	07.01.19	Done	NA	NA
B-3	ADB was informed about the incident with the Incident Report	PD-PMU	10.01.19	NA	NA	NA
B-4	Secretary to MMDE convened a joint site inspection; a meeting was held at the FD office in Thelgamu Oya	Secretary to MMDE	14.01.19	NA	NA	NA
B-5	PD-PMU circulated the meeting minutes and the key decisions taken by the Secretary's inspection	PD-PMU	22.01.19	NA	NA	NA
B-6	PD-PMU appointed a special committee consisting with the members listed below to develop the preventive measures in future packages: <ul style="list-style-type: none"> • DPD-PMU • Environmental Specialist – PMU • Environmental Specialist – PMDSC • DTL – PMDSC • Consultant Engineer / Coordinator – UECF of PMU 	PD-PMU	23.01.19	NA	NA	IEMS
B-7	FD issued instructions to undertake a damage assessment through IUCN at the Contractor's cost by their letter		01.02.19	NA	EMS	IEMS

	Action	By whom	By when	Current progress	Monitoring mechanism	Verification
B-8	Requested IUCN to submit the Technical proposal	PD-PMU	05.02.19	NA	NA	IEMS
B-9	IUCN submitted their Proposal for carrying out damage assessment for the Beligoda FR area) followed by a site visit made to the affected area on 08.02.19.	IUCN	14.02.19	NA	NA	NA
B-10	IUCN proposal was submitted to FD for approval	PMU	20.02.19	NA	NA	NA
B-11	Awarding the consultancy to IUCN to carry out damage assessment, and the contract with IUCN will be made between MMDE and IUCN, with subsequent cost recovery through the IPCs of the Contractor	PMU	03.03.19	1.46 million	NA	NA
B-12	Ensure timely receipt of the Assessment Report from IUCN	PMU	24.04.19	The first draft report was received on 13 May 2019 and Final report in June 2019.	NA	NA
B-13	Charge the cost for the damage restoration work proposed by IUCN to the Contractor	PMU	02.05.19	Not until end June 2019	RE	EMS
B-14	Restoration to be started through the FD	PMU	02.05.2019	Not until end June 2019	EMS	IEMS, ES-PMU, ES-PMDSC; SEO-PIU

29. In addition to above, other observations and the corrective actions taken are noted below related to the UEC-ICB-2B construction package.

Description of issue / date/ photo	Location	Env. Impact/ Significance	Corrective action taken/ photo
Dust generation 	Access road Lel Oya	Air pollution and health hazards	 Watering to reduce dust
Blocked river mouth 	T2 outlet river crossing access	Flood incident and scouring crossroad embankment	 Rubble packing and installing the conduit to facilitate stream flow
Earth material are left near the reservoir 	T2 outlet	Erosion and siltation in the reservoir	 Excess earth material was removed to the approved disposal area at T2 outlet
Put waste in to stream 	T2 outlet - campsite	Water pollution takes place	 The location was cleaned to free from debris

3.2 Quantitative records – UEC-ICB-2B

30. The arrangements are made to carry out the environmental quality measurements through the Contractor by issuing a Provisional Sum Order (PSO) under BOQ item No. 6.2.2. The Terms of Reference (ToR) indicating the Scope of Work, parameters to be monitored is prepared. The monitoring results shall be available within the next half year monitoring period.

31. Accordingly, surface water quality samples in 10 locations, ground water quality samples in 06 locations, ambient air quality samples in 06 locations, and existing noise and vibration levels (24hrs) in 4 locations shall be collected by the Contractor through a CEA approved accredited laboratory during the next reporting period. The sample location selection shall be based on the distribution of the construction areas.

32. In addition, as per the Engineer's instructions, the Contractor shall started the monthly surface water quality measurements through the University of Peradeniya from July 2019 in both upstream and downstream of Lel Oya representing Tunnel 1 outlet and Tunnel 2 inlet portals.

3.3 Reporting and documentation

3.3.1 UECP-ICB-1

33. The Contractor's Environment Officer was resigned by end Jan 2019, and due to the absence of the approved EO, the submission of the monthly environmental report and the progress report on the reforestation work was not up-to-date. The Contractor was reminded to replace the vacant position with a qualified EO, but this was not fulfilled by the end of the reporting period.

3.3.2 UECP-ICB-2B

34. The Contractor was informed in writing on 01 February 2019 of outstanding environmental issues and documents including the Contractor's Environmental Management Plan (CEMP). The progress of Contractor's submission of CEMP is as follows.

	Received date	Approval status
1 st Draft CEMP	24 November 2018	<ul style="list-style-type: none"> Returned for resubmission with comments on 02 Jan 2019
2 nd Draft CEMP	07 January 2019	<ul style="list-style-type: none"> Approved conditionally with comments to carry out the construction work and responded on 07th January In addition to the CEMP MS including Environment management measures for key project activities is submitted by the contractor and without the approval for the environment safeguard section, contractor not allowed to commence the relevant construction activity Also carried out an awareness session by ES PMDSC on 16 January at RE's office of UEC ICB2B, to train the Contractor's EO and outsourced consultant on preparing the CEMP.

35. Monthly Environmental Progress Reports are submitted by the Contractor at the end of each month since April 2019, describing the progress of CEMP implementation, issues and major concerns noted during the previous month as per the format shared by the Engineer.

4 ENVIRONMENTAL SAFEGUARD COMPLIANCE STATUS - UECP

36. The overall environmental safeguard compliance implementing the recommendations and conditions given in the EIA for NWPCP, conditional approvals issued by CEA and other stakeholder agencies such as DWC, FD and the ADB requirements are addressed by the Employer and the PMDSC, simultaneously with the environmental monitoring and supervision carried out on the contractor's CEMP implementation.

37. The activities and measures carried out during the monitoring period from January to June 2019 are briefly described under this chapter.

4.1 Compliance Status Related to the CEA Approval Conditions

38. **Table 4-1** summarizes the activities carried out jointly by the Employer and PMDSC to meet the conditions given in the CEA approval.

Table 4-1: Key Actions in Compliance with the CEA approval conditions

No.	Approval condition	Compliance status	Remarks
1	Preparation of Wildlife Management Plan (WMP)	Plan prepared & Approved by CEA	Implementation in progress by PMU/PIU
2	Implementing recommendations of WMP	Implementation works of the WMP is in progress Work plan & activity plan prepared for implementation	<ul style="list-style-type: none"> 5 tanks for ecological restoration – GIS mapping completed/ Engineering survey on going (Halmillewa Wewa, Ritico Wewa, Paburugaswewa, Pandithaya Wewa, Etaweerawewa) Tank Restoration for habitats for fauna (3 tanks) – GIS mapping completed/ Engineering survey on going (Alistanwewa at Ritigala, Olumaduwa Wewa and Weheragalawewa at Kaudulla NP) Eradication of Invasive Flora (Mimosa pigra) – 10 ha. identified at Elehera – Giritala Sanctuary with DWC officials Setup beat offices (Kithul uthuwa beat - Polonnaruwa DWC Division and Mahakanadawa beat office – Anuradhapura DWC Division) - site selections are completed Awareness meetings on implementation of Wildlife Management Plan <ul style="list-style-type: none"> Stakeholder awareness meeting at NAQDA, Kalawewa on 2019.05.06 and 2019.05.07) Establishment of District Steering Committee On 2019.05.28 Establishment of Model Elephant Corridor at 2019.07.04 at Palugaswewa DS office and field visit 2019.05.18 with relevant stakeholders. Awareness meeting at Galanbidunuwewa DS office for Regional officials on 2019.07.29

No.	Approval condition	Compliance status	Remarks
4.a	Implementing recommendations of EIAR non-construction based, (e.g. reforestation)	<p>Preparation and signed a MoU for 50 ha. of reforestation in Kaluganga area with DFO division, Matale</p> <ul style="list-style-type: none"> Plant production (30,000 nos.) Purchasing Seedlings from outside of Nurseries (government or Private) Survey and Preparation of maps Land preparation (50 Ha) Seedling transportation and Tree Planting. Fertilizer Application Maintenances for Five Years from the year 2019 to 2023 Gap filling planting. Establishment and Maintenance of Fire Belts (10 km) Maintenance of Gliriseediya Planting in Fire Belts. <p>Preparation of a MoU for 200 ha. of reforestation in Polonnaruwa Division with DFO division, Polonnaruwa</p> <ul style="list-style-type: none"> Reforestation of 100 ha of Elehera Reserve Forest & 100 ha of Hurulu Conservation Plants production (44,000 plants) Maintenances of established forest plantation from the year 2019 to 2023 Improvement of existing plant nursery of Forest Department at Irigeoya, Habarana Removal of Invasive plant species of Lantana camara in the Elehera Reserve Forest, Galoya Forest Reserve and Hurulu Reserve (400 ha) Rehabilitation of Existing Tanks (Milankulamawewa 	<ul style="list-style-type: none"> Advanced release to FD according to MOU conditions 20,000 plants production in nurseries of FD Purchasing 30,000 plants through the PIU in order to provide FD for reforestation activities is in progress.

No.	Approval condition	Compliance status	Remarks
		Tank and Bogahawewa) within Hurulu Forest Reserve <ul style="list-style-type: none"> Nursery establishments and plant production, site preparation and tree planting in progress under restoration program of the canal trace ICB-01 	<ul style="list-style-type: none"> 3 rural nurseries established (affected families of UEC Project) and 2195 plants have been purchased by Contactor. Approximately 200 m of canal trace has been restored and 265 plants are planted.

39. In addition to above following **Table 4-2** summarizes the construction-based activities involved by the Employer and the PMDSC with the Contractor and other key stakeholder agencies during the monitoring period.

Table 4-2: Construction based events carried out during the monitoring period

Date	Activity	Place
2019.01.01	Field visit to ICB-1 on env. monitoring and safety	ICB-01
2019.01.02	Progress Review meeting - KMTC and tree removal activities of Leloya areas	RE's office, KMTC and Leloya area
2019.01.03	Field visit with Program Director, Env. Specialists (PMDSC and PMU) RE and DPO - Matale and other relevant officials of FD to Poththatawela and Kambarawa areas on unauthorized clearances.	KMTC (Poththatawela)
2019.01.04	Field visit to ICB-1 on env. monitoring and safety	ICB-01
2019.01.05	Field visit to ICB-1 on env. safety monitoring and Leloya area (outlet portal of Tunnel No. 02) on issues related to tree removal activities	ICB-01 and KMTC (Leloya)
2019.01.07	Field visit to ICB-1 on env. monitoring and safety	ICB-01
2019.01.09	Progress Review Meeting of ICB-1 and field visit	ICB-01
2019.01.10	Field visit to Kaluganga Forest Office	FD, RFO office, Laggala
2019.01.11	Field visit to ICB-1 on env. safety monitoring	ICB-01
2019.01.13	Field visit to ICB-1 on env. safety monitoring with DWC officials	ICB-01
2019.01.14	Field visit to Poththatawela on illegal clearance of Sinohydro Corporation	KMTC (Poththatawela)
2019.01.18	Meeting with officials of STC, RE - KMTC , Sinohydro and PIU officials on tree removal activities of outlet portal of Tunnel No. 02 , Kambarawa	KMTC (Poththatawela)
2019.01.21	Field visit to ICB-01 with RE- PMDSC, Elahera on Env. Monitoring and Safety matter.	ICB-01
2019.01.22	Field visit to Kaluganga , Leloya Area with DPD (KMTC) and other staff	KMTC, Leloya
2019.01.23	Field visit to ICB-01 and discussion with Wildlife officials, Elahera on Elephant fence maintenance	ICB-01
2019.01.24	Field visit to ICB-01 on backfilling activities of canal trace and purchasing plants at Rural plant nurseries , Damanayaya with officials of CML and Environment Monitoring Specialist of PMDSC, Elahera	ICB-01 and Damanayaya
2019.01.30	Field visit to ICB-01 for tree planting activities of canal trace	ICB-01
2019.01.31	Rural Plant nurseries at Damanayaya on purchasing plants for canal trace restoration - ICB-01	ICB-01 and Damanayaya
2019.02.02	Env. Monitoring at Kaluganga KMTC tunnel (Leloya areas) , Contractor's camp site and disposal sites.	KMTC, Leloya

Date	Activity	Place
2019.02.05	Field visit to ICB-01 on environment safety and backfilling activities of canal trace and tree planting activities.	ICB-01
2019.02.06	Forest Department , Matale discussion with DFO on the proposed plan of Engineer/ Employer accommodation site and office building complex which scheduled to handing over to FD after completion of Project.	DFO office, Matale
2019.02.07	Field visit to ICB-1 on env. safety monitoring	ICB-01
2019.02.08	Field visit to ICB-1 on env. safety monitoring with RE and PMDSC staff	ICB-01
2019.02.11	Field visit to KMTC (Poththatawela and Beligoda with PR - UEC and KMTC staff to monitor the construction of temporary camp site , access roads etc.	KMTC (Poththatawela)
2019.02.12	Field visit to ICB-01 and arrangement of Env. Safety discussion of WMSIP	ICB-01
2019.02.14	Field visit to ICB-1 on Env. safety monitoring	ICB-01
2019.02.15	Discussion with RFO - FD Laggala Pallegama at RFO office on the water tanks establishment of Leloya for Tunnel Construction work - KMTC	FD, RFO office, Laggala
2019.02.17	Payment for purchased plants from rural plant nurseries at Damanayaya with Accountant , CML company and field visit to KMTC, Leloya	Damanayaya and KMTC, Leloya
2019.02.20	Field visit with Forest Department, PMDSC staff and official of Sinohydro on getting approval for water supply system of Leloya for KMTC construction activities.	Leloya , KMTC
2019.02.26	Field visit to Beligoda with officials of FD (DFO, Matale) , PMDSC and Contractor on land changing issues related to outlet portal of Tunnel No.02	KMTC, Beligoda
2019.03.04	Field visit to Koduruwawa areas with PD on pre -bid meeting and field visit of ICB-2A	Koduruwawa , ICB-2A
2019.03.05	Field visit to Namalpura, Palugaswewa on pre -bid meeting and field visit of ICB-2A .	Namalpura ,ICB-2A
2019.03.06	Pre- bid meeting and field inspection with bidders of ICB-2A, Namalpura, Palugaswewa	Namalpura , ICB-2A
2019.03.07	field inspection with bidders of ICB-2A, Koduruwawa	Koduruwawa , ICB-2A
2019.03.08	Field visit to ICB-01 on the tree planting and backfilling of section 3 of the canal trace	ICB-01
2019.03.13	Meeting and Field visit to ICB-01 with ADB team	ICB-01
2019.03.14	Meeting and Field visit to ICB-01 with ADB team	KMTC
2019.03.15	Field visit to Knuckles region with Forest Department and other relevant institutes and meeting on Proposed Eco - Tourism Programme of Knuckles regions.	Knuckles, FD office
2019.03.19	Forest Department, Matale with DPD and Env. Specialist of Sinohydro to discuss on the approval of water tank establishment , land changing of Beligoda with DFO, FD etc	DFO office, Matale
2019.03.20	Progress Review Meeting of ICB-01 and field visit	RE office, Elahera
2019.03.21	Field visit with State Timber Corporation, PMDSC and Contractor on issues related to tree removal of road section "e", "f" and outlet portal of Tunnel No . 02 - KMTC	KMTC, Poththatawela
2019.03.22	Field visit to KMTC , Leloya on removal of timber logs from the portal area and tree removal of additional areas of access road	KMTC, Leloya
2019.03.25	Field visit with officials of State Timber Corporation, EO - Sinohydro and relevant officials of PIU to Poththatawela on tree removal of outlet portal of Tunnel No;02 and access road "e" and "f" areas	KMTC, Poththatawela
2019.03.26	Field visit to ICB-01 on the env. issues related to construction activities.	ICB-01

Date	Activity	Place
2019.03.27	Participate to awareness programme on safety related to construction activities organized by RE office , Elahera	Moragahakanda office
2019.04.01	Field visit to ICB-01 on Env. Monitoring safety matter	ICB-01
2019.04.02	Field visit with FD officials on the new study related to Randenigala - Kaluganga Transfer Project - Heenganga Area	Heenganga area, Hettipola
2019.04.03	Progress Review meeting - KMTC and field visit to Leloya and ICB-01	PMDSC office, Kaluganga and Leloya area
2019.04.08	Field visit to Poththatawela with STC officials on tree removal of outlet portal of T2 areas	KMTC, Poththatawela
2019.04.09	Field visit to Kaluganga areas and Forest Office , Matale in order to discuss the draft MoU related to Kaluganga Area	KMTC, Leloya and DFO office, Matale
2019.04.10	Progress Review Meeting of ICB-01 and field visit of ICB-01	RE office, Elahera
2019.04.17	Field visit to ICB-01 on the env. issues related to construction activities.	ICB-01
2019.04.23	Field visit to ICB-01 on monitoring electric fences of ICB-01 with Wildlife officials.	ICB-01
2019.04.24	Forest Department Office , Polonnaruwa in order to discuss the draft MoU related to Elahera - Giritala Sanctuary (100 ha.)	DFO office, Polonnaruwa
2019.05.03	Field visit to ICB-01 on the env. issues related to construction activities.	ICB-01
2019.05.06	Participate to awareness programme for relevant agencies on Implementation of Wildlife Mgt. Plan at NAQDA, Kalawewa	NAQDA, Kalawewa
2019.05.07	Participate to awareness programme for relevant agencies on Implementation of Wildlife Mgt. Plan at NAQDA, Kalawewa	NAQDA, Kalawewa
	Participate to the awareness programme for relevant agencies on Implementation of Wildlife Mgt. Plan at NAQDA, Kalawewa	
2019.05.08	Progress Review Meeting - ICB-01 Elahera	RE office, Elahera
2019.05.10	Field visit to ICB-01 on env issues related to construction activities.	ICB-01
2019.05.14	Field visit with official of DWC , FD on proposed elephant corridors at Habarana, Palugaswewa, Digampathaha etc.	Habarana, Palugaswewa, Digampathaha
2019.05.17	Field visit to ICB-01 on env issues related to construction activities.	ICB-01
2019.05.21	Field visit with official of DWC , FD on proposed elephant corridors at Galenbidunuwewa, Weeragala , Magameegawewa etc.	Galenbidunuwewa, Weeragala , Magameegawewa
2019.05.23	Field visit to Minneriya, with DWC and FD officials on the identify the proposed elephant corridor.	Minneriya
2019.05.24	Field visit to Iliukkubura with FD officials and other relevant line agencies on the proposed Ecotourism Program of Knuckles Areas.	Iliukkubura, FD office
2019.05.27	Field visit to Koduruwawa regarding issues related to Disposal Sites of Southern Portal of ICB-2A	Koduruwawa , ICB-2A
2019.05.28	Participate to Regional Working Committee Meeting held on Habarana with relevant officials.	Habarana
2019.06.04	FD , DWC and CEA , Polonnaruwa on getting environment approval for tunnel ICB- 2A , Koduruwawa	DFO office, Polonnaruwa
2019.06.05	Purchasing of plants from rural plant nurseries at Damanayaya and transport to office premises, Madatugama.	Damanayaya
2019.06.07	Field visit with officials of FD to Namalpura in order to get the approval for the tunnel components of Northern Portal of ICB-2A	Namalpura , ICB-2A
2019.06.10	DFO Office, Matale on finalize the MoU between FD and UEC Project and Gannoruwa Agri. Dept. on purchasing plants	DFO office, Matale

Date	Activity	Place
2019.06.11	Field visit with officials of FD to Koduruwawa in order to get the approval for the tunnel components of Sourthern Portal of ICB-2A	DFO office, Polonnaruwa
2019.06.12	DWC office, Ritigala discussion on proposed Elephant Corridors	DWC office, Ritigala
2019.06.13	ADB Workshop at Dambulla on Env. Monitoring and safeguard requirement	Dambulla
2019.06.14	ADB Workshop at Dambulla on Env. Monitoring and safeguard requirement	Dambulla
2019.06.25	Field visit to identify the suitable tanks at Wasgamuwa NP for tank rehabilitation under Wildlife Mgt. Plan	Wasgamuwa NP
2019.06.26	Field visit to identify the suitable tanks at Kaudulla NP for tank rehabilitation under Wildlife Mgt. Plan	Kaudulla
2019.06.27	Field visit to ICB-01 on Env. Monitoring of the ICB-01 with RE and relevant staff	ICB-01
2019.06.28	Field visit to ICB-01 on Env. Monitoring of the ICB-01	ICB-01

40. Several meetings and training programs were carried out during the monitoring period with the participation of relevant officers representing PMU, PIU, Engineer, PMDSC and the Contractor. A summary of the details is given in **Table 4-3**.

Table 4-3: Summary of the meetings and training conducted during the monitoring period

Date	Activity	Place
2019.01.02	Progress Review meeting - KMTTC and tree removal activities of Leloya areas	RE's office, KMTTC and Leloya area
2019.01.10	Field visit to Kaluganga Forest Office on discussion with tree removal and other env. matter related to KMTTC.	FD, RFO office, Laggala
2019.01.18	Meeting with officials of STC, RE - KMTTC, Sinohydro and PIU officials on tree removal activities of outlet portal of Tunnel No.02, Kambarawa	KMTTC (Poththatawela
2019.01.31	Rural Plant nurseries at Damanayaya on purchasing plants for canal trace restoration - ICB-01	ICB-01 and Damanayaya
2019.02.06	Forest Department, Matale discussion with DFO on the proposed plan of Engineer/ Employer accommodation site and office building complex which scheduled to handing over to FD after completion of Project.	DFO office, Matale
2019.02.15	Discussion with RFO - FD Laggala Pallegama at RFO office on the water tanks establishment of Leloya for Tunnel Construction work - KMTTC	FD, RFO office, Laggala
2019.03.13	Meeting and Field visit to ICB-01 with ADB team	ICB-01
2019.03.14	Meeting and Field visit to ICB-01 with ADB team	KMTTC
2019.03.15	Field visit to Knuckles region with Forest Department and other relevant institutes and meeting on Proposed Eco - Tourism Programme of Knuckles regions.	Knuckles, FD office
2019.03.19	Forest Department, Matale with DPD and Env. Specialist of Sinohydro to discuss on the approval of water tank establishment , land changing of Beligoda with DFO, FD etc	DFO office, Matale
2019.03.20	Progress Review Meeting of ICB-01 and field visit	RE office, Elahera
2019.03.21	Field visit and discussion with State Timber Corporation, PMDSC and Contractor on issues related to tree removal of road section "e", "f" and outlet portal of Tunnel No .02 - KMTTC	KMTTC, Poththatawela
2019.03.27	Participate to awareness programme on safety related to construction activities organized by RE office, Elahera	Moragahakanda office

Date	Activity	Place
2019.04.03	Progress Review meeting - KMTC and field visit to Leloya and ICB-01	PMDSC office, Kaluganga and Leloya area
2019.04.10	Progress Review Meeting of ICB-01 and field visit of ICB-01	RE office, Elahera
2019.04.24	Forest Department Office, Polonnaruwa in order to discuss the draft MoU related to Elahera - Giritale Sanctuary (100 ha.)	DFO office, Polonnaruwa
2019.05.06	Participate to awareness programme for relevant agencies on Implementation of Wildlife Mgt. Plan at NAQDA, Kalawewa	NAQDA, Kalawewa
2019.05.07	Participate to awareness programme for relevant agencies on Implementation of Wildlife Mgt. Plan at NAQDA, Kalawewa	NAQDA, Kalawewa
2019.05.08	Progress Review Meeting - ICB-01 Elahera	RE office, Elahera
2019.05.14	Field visit and discussion with official of DWC, FD on proposed elephant corridors at Habarana, Palugaswewa, Digampathaha etc.	Habarana, Palugaswewa, Digampathaha
2019.05.21	Field visit and discussion with official of DWC, FD on proposed elephant corridors at Galenbidunuwewa, Weeragala , Magameegawewa etc.	Galenbidunuwewa, Weeragala , Magameegawewa
2019.05.23	Field visit and discussion to Minneriya, with DWC and FD officials on the identify the proposed elephant corridor.	Minneriya
2019.05.24	Field visit to Iliukkubura and meeting with FD officials and other relevant line agencies on the proposed Ecotourism Program of Knuckles Areas.	Iliukkubura, FD office
2019.05.27	Field visit to Koduruwawa to discuss regarding issues related to Disposal Sites of Southern Portal of ICB-2A	Koduruwawa, ICB-2A
2019.05.28	Participate to Regional Working Committee Meeting held on Habarana with relevant officials.	Habarana
2019.06.04	FD , DWC and CEA , Polonnaruwa on getting environment approval for tunnel ICB- 2A , Koduruwawa	DFO office, DWC office and CEA office Polonnaruwa
2019.06.10	DFO Office, Matale on finalize the MoU between FD and UEC Project and Gannoruwa Agri. Dept. on purchasing plants	DFO office, Matale
2019.06.12	DWC office, Ritigala discussion on proposed Elephant Corridors	DWC office, Ritigala
2019.06.13	ADB Workshop at Dambulla on Env. Monitoring and safeguard requirement	Dambulla
2019.06.14	ADB Workshop at Dambulla on Env. Monitoring and safeguard requirement	Dambulla
2019.06.25	Field visit and discussion to identify the suitable tanks at Wasgamuwa NP for tank rehabilitation under Wildlife Mgt. Plan	Wasgamuwa NP
2019.06.26	Field visit and discussion to identify the suitable tanks at Kaudulla NP for tank rehabilitation under Wildlife Mgt. Plan	Kaudulla
2019.06.27	Field visit and discussion to ICB-01 on Env. Monitoring of the ICB-01 with RE and relevant staff	ICB-01

4.2 Training and awareness

41. Following training and awareness sessions were conducted in the UECF area during the reporting period:

Date	Training
28.02.2019	Combined training program for both NWPCP and UECF contractors on Environment and Safety compliance requirements held at Laggala DS office, Conference hall
22.01.2019 and 25.03.2019	Tunnel Induction & Safety Awareness Program at RE-KMTC's office It was conducted in two separate modules for all the staff of KMTC and few of other concern staff. Certificate of completion has been given to all the participants who has completed the Module 1 & 2.

5 PROPOSED ACTIVITIES FOR NEXT REPORTING PERIOD (JULY TO DECEMBER 2019)

42. Following activities are planned from the PMDSC for the next reporting period:

- (i) Carrying out environmental feasibility studies to include in the Feasibility Report for the UECP-ICB-5 construction package of constructing feeder canal from the end of UEC to Mahakanadarawa reservoir (0+000 km to 30+535 km) under Tranche 3 of the MWSIP.
- (ii) Completing addendum to EIA addressing design changes on UEC-ICB-3 (from Kongetiya to Madethhawewa) package.
- (iii) Updating EMP for UEC-ICB-2A package considering the DWC comments and findings of the baseline ecological surveys to be conducted in November 2019.
- (iv) Completing environmental baseline quality surveys in UECP-ICB-1, ICB-2A and ICB-2B packages.

43. Environmental plan prepared by the Employer for the next reporting period is summarized in **Table 5-1**.

Table 5-1: Environmental plan for next reporting period by employer

No	Task Name	Start Date	Finish Date
01	Wildlife Management plan implementation	01.07.2019	Continue in 2020
	Beligamuwa Kanda Reforestation work	01.07.2019	Continue in 2020
	Habitat enrichment program for KPS (Grassland & Natural forest)	01.07.2019	Continue in 2020
	Kumbukulawa Cascade 7 tank ecological restoration	01.07.2019	Continue in 2020
	Eradication program of Mimosa Pigra in Wemedilla tank	01.07.2019	Continue in 2020
	Establishment of Mi Oya Elephant corridor	01.07.2019	Continue in 2020
02	GRC Meetings	2019 September	
	- Awareness program on construction activities ICB-2A – Regional officials of DS, FD, DWC, CEA, GSMB, Archaeology etc. including relevant Grama Niladari)		
	- Awareness program For farmer Organizations – ICB-2A		
03	Environment & Safety inspection for ICB -01 and ICB-2A	01.07.2019	Continue in 2019
	ICB-1		
	- Canal trace restoration and tree planting	01.07.2019	Continue in 2019
	- Env. & safety monitoring		
	- Progress & site meeting	01.07.2019	Continue in 2019
	ICB-2A		

No	Task Name	Start Date	Finish Date
	- Getting approval from relevant line agencies	01.06.2019	Continue in 2019
	- Tree marking of tunnel portals, disposal sites, camp sites, access roads etc. and tree removal		
	- Progress & site meetings	01.07.2019	Continue in 2019
04	Activities related to MoUs with FD		
	- Coordination Purchasing plants from Mahaweli Authority for reforestation program of FD, Matale	01.07.2019	Continue in 2019
	- Implementation of reforestation program under MoUs FD (Polonnaruwa Division – 200 ha. and Kaluganga Area -50 ha.)		
	- Field visits and monitoring with FD on implementation of other related activities of MoUs	01.07.2019	Continue in 2019

Annex 1

Annex 1: Action Plan for implementation of site-specific mitigation measures-UEC ICB 1

Site specific Env. impacts	Site specific mitigation measures	Observation Indicators	Time frame/Frequency	Responsibility	Expected outcome	Follow up action
Debris/residues disposal	Removing the debris/residues in to approved disposal sites.	No of trucks used	Weekly	PM/EO contractor	Avoiding unauthorized dumping	Weekly monitoring with checklist
Generation of solid waste and disposal	Collecting and segregating solid waste in construction sites and campsites.	Waste collecting bins	Weekly	PM/EO contractor	Maintaining all site with tidy and clean	Weekly monitoring with checklist
Falling large animal into deep excavated locations	Electing and maintaining temporary electrical fence.	Voltage in the fence/recorded incidents	Daily	PM/EO contractor	Ensuring the animal protection	Daily monitoring with checklist
Falling small animals into deep excavated locations	Erecting and maintaining the safety net.	Safety net/recorded incidents	Weekly	PM/EO contractor	Ensuring the animal protection	Weekly monitoring with checklist
Dust generation/air pollution	Water application for suppressing the dust along the service road and construction premises.	No. of bowser used/ water application frequency	Daily	PM/EO contractor	Ensuring the Non polluted work sites.	Daily monitoring
Handling of explosive and rock blasting	Explosive is handled with necessary approval/permits	Approval/permits documents		PM/EO contractor	Ensuring the legal rock blasting	Safety checklist along the RFI
Disturbance to animal movement	Adequate spaces are allowed for animal movement along the trace.	At least 300m space is between two construction locations	Weekly	PM/EO contractor	Minimizing the disturbance for animals	Weekly monitoring
Surface run off and soil erosion during the heavy rain	Application of stone bunds/cement structures to reduce the runoff water.	Prepared soil/cement/stone structures	Monthly	PM/EO contractor	Minimizing the soil erosion and protect the top soil	Monthly monitoring with checklist
Loss of vegetation/habitats	Habitat restoration with reforestation programme	Reforested stretches	weekly	PM/EO contractor	Producing healthy plants for habitat restoration	Maintaining takes place daily

Annex 2

Annex 2: Mass Balance Excavation Quantities of UEC ICB 1

Section	Actual Work done up to end of June (qtys taken at 5m intervals)		Total Excavation Quantity(m ³)	Back filling(m ³)	
	Common(m ³)	Rock(m ³)		To be used	Remaining
4	32,287.92	2,992.87	35,280.79	68720.35	(33,439.57) ⁵
1	29,409.08	28,471.69	57,880.77	46223.75	11,657.02
2	60,268.52	104,320.83	164,589.35	143327.53	21,261.82
3	114,988.85	165,462.21	280,451.06	257082.75	23,368.31
Total	236954.365	301247.59	538,201.96	515354.38	22,847.58

⁵ In the section of considering the terrain with drainage and stream crossings, comparatively low ground level, excavation quantities are less compared to other sections. To meet the requirement of DWC during reforestation, additional layer of about 1.5 m height covering the entire section of the excavated area on the top of the conduit after backfilling over the ground level, and also additional backfilling payer at the bottom to prevent uplifting is to be done. This backfilling material should be free of rock and other unclassified material and therefore an additional quantity of 33,439.57 m³ is required.