

# Environmental Monitoring Report

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#1 Annual Report  
Project Number: 47381-002  
September 2017

## SRI: Mahaweli Water Security Investment Program

Minipe Left Bank Canal Rehabilitation Project (MLBCRP)

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

# ANNUAL ENVIRONMENTAL MONITORING REPORT FOR MLBCRP – No. 01

September 2017



Program Management, Design and Supervision Consultant

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# ANNUAL ENVIRONMENTAL MONITORING REPORT FOR MLBCRP – No. 01

## Prepared for:

Ministry of Mahaweli Development and Environment  
Mahaweli Water Security Investment Program  
Program Management Unit  
No. 493 1/1, T.B. Jayah Mawatha  
Colombo 10  
Sri Lanka

## Prepared by:

Program Management, Design and Supervision Consultant  
Joint Venture Lahmeyer International GmbH – GeoConsult ZT GmbH  
in Association with NIRAS (Denmark), Engineering Consultants Ltd. (Sri Lanka), and  
Infotechs IDEAS (Pvt.) (Ltd.) (Sri Lanka)  
No. 493, T.B. Jayah Mawatha  
Colombo 10  
Sri Lanka

Lahmeyer International Main Office  
Friedberger Str. 173  
61118 Bad Vilbel  
Germany

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**ABBREVIATIONS**

ADB	Asian Development Bank
AEMR	Annual Environmental Monitoring Report
AIS	Alien Invasive Species
CEA	Central Environmental Authority
CEMP	Contractor's Environmental Management Plan
D/S	Down Stream
DS	Divisional Secretary
EARF	Environmental Assessment Review Framework
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Method Statements
EO	Environmental Officer
EPL	Environmental Protection License
FAM	Facility Administration Manual
GoSL	Government of Sri Lanka
ICB	International contractor bidding
IEE	Initial Environmental Examination
IEER	Initial Environmental Examination Report
LB	Left bank
LKR	Sri Lankan Rupees
ML	Mining License
MLBCRP	Minipe Left Bank Canal Rehabilitation Project
MMDE	Ministry of Mahaweli Development and Environment
MRB	Mahaweli River Basin
MWSIP	Mahaweli Water Security Investment Program
NCB	National Contractor bidding
NWPCP	North Western Canal Project
PD	Program Director/Project Director
PIU	Project Implementation Unit
PMDSC	Project Management Design Supervision Consultant
PMU	Program Management Unit
RE	Resident Engineer
SPS	Safeguard Policy Statement
TL	Trade License
UECP	Upper Elahera Canal Project
VAT	Value Added Tax
VRR	Victoria/Randenigala/Rantambe

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## 1. INTRODUCTION

### 1.1 Overview of MWSIP

1. The Mahaweli Water Security Investment Program (MWSIP) was commenced in December 2015, under the Ministry of Mahaweli Development and Environment (MMDE) of the Government of Sri Lanka (GoSL), funded by the Asian Development Bank (ADB) (Loan No. 47381-002-SRI (SF) and GoSL, and is aimed at achieving the goal of maximizing the productivity of the Mahaweli River Basin (MRB) water resources by transferring available water to the north and north western dry zone areas for irrigation, drinking and commercial purposes. The investment program comprises three main individual investment projects:

(i) **Minipe Left Bank Canal Rehabilitation Project (MLBCRP)**

Minipe Left Bank Canal Rehabilitation Project (MLBCRP), located in the downstream reaches of the Mahaweli Ganga, will: (a) add upstream storage by heightening the diversion weir by 3.5 m, (b) construct new automated intake gates to the left bank canal and emergency spill weirs to both left and right bank canals; and (c) rehabilitate the 74 km Minipe Left Bank Canal to improve conveyance and reliability of service to existing farmers.

(ii) **Upper Elahera Canal Project (UECP)**

The UECP comprises two components. The first component is the 9 km Kalu Ganga-Moragahakanda Transfer Canal (including 8km of tunnel) that transfers water between the Kalu Ganga and Moragahakanda reservoirs. The second component is the Upper Elahera Canal that connects the Moragahakanda reservoir to the existing reservoirs: Huruluwewa, Eruwewa and Mahakanadarawa via 92 km of canals (including a 26.6-km tunnel). These reservoirs supply existing irrigation and water supply schemes.

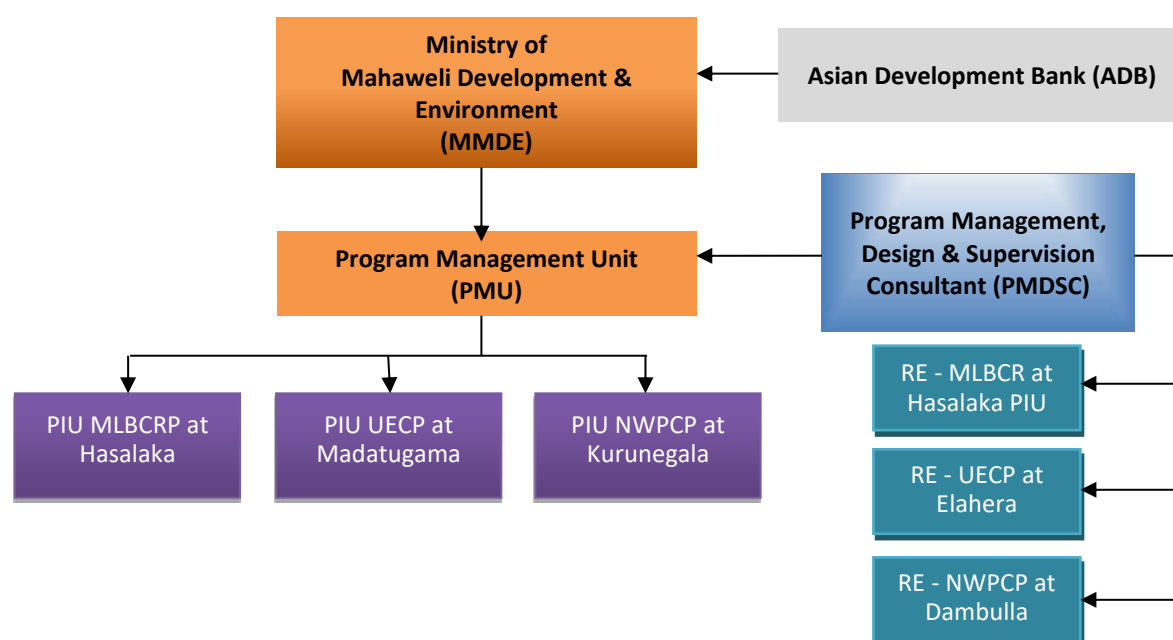
(iii) **North Western Canal Project (NWPCP)**

The North-Western Province Canal Project (NWPCP) will construct 91 km of new and upgraded canals and two new earth gravity dams impounding the Mahakithula and Mahakirula reservoirs. It will transfer water from the Dambulu Oya river and the existing Nalanda and Wemedilla reservoirs to command existing irrigation and water supply reservoirs. Parts of the detailed designs are yet to be finalized.

2. The Program Director (PD) is the head of the Program and leads the Program Management Unit (PMU) in the Colombo office, located at 493 1/1, T. B. Jayah Mawatha, Colombo 10. A safeguards cell is established in the PMU, which is responsible for overseeing the overall monitoring and verification of the environmental and resettlement activities of the investment Program with the assistance of the three Project Implementation Units (PIUs) and the Project Management, Design and Supervision Consultants (PMDSC).

3. The three PIU offices and the three Resident Engineers' (RE) offices are operated at site level to monitor closely the performance of Contractors constructing infrastructure of the Program. The organization structure of the MWSIP is shown in **Figure 1-1**.





**Figure 1-1 : Organization Structure of MWSIP**

## 1.2 Scope of the Report

4. It is an ADB requirement to submit an Annual Environmental Monitoring Report (AEMR) to ADB and Central Environmental Authority (CEA) for the “Category B” project as documented in FAM<sup>1</sup> and EARF<sup>2</sup>. MLBCRP is a “Category B” project and hence this Annual Environmental Monitoring Report is prepared to update the progress for the period of June 2016 to June 2017. This is the first AEMR for MLBCRP as the physical work of the project was commenced at the site towards the end 2016.

5. The purpose of this report is to ensure that the project is implemented with due concern for environment 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 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) or Initial Environmental Examination (IEE) reports and Environmental Management Plan (EMP) as per the stipulation No. 13.3 of the IEE approval No. CEA/CPO/KY/07/929/12 (16/10/2015).

## 1.3 MLBCR Project at a Glance

6. MLBCRP implementation is planned under six (06) contract packages selected through one (01) International contractor bidding (ICB) and five (5) National Contractor bidding (NCB) process within the Tranche 1. The summary of the contract packages and the procurement progress is given in the Table 1-1.

<sup>1</sup> Paragraph 60 of Facility Administration manual (FAM), June 2015 prepared by MMDE

<sup>2</sup> Paragraph 111 of Environmental Assessment Review Framework (EARF) November 2014 (updated in June 2017) by MMDE

7. Four contracts: MLBCRP–NCB-1, NCB-2, NCB3 and NCB4 are already awarded and contractors have mobilized.

**Table 1-1: Summary of the MLBCRP contract bidding and awarding**

Contract Name	Contract No.	Date of Invitation for bidding	Date of Award
Rehabilitation of Minipe Left Bank Canal – Stage 1 (0 + 000 km to 30 + 140 km)	MMDE/MWSIP/ADB/MLBCR/NCB-1/	07.12.2015	07.09.2016
Rehabilitation of Minipe Left Bank Canal – Stage 2	MMDE/MWSIP/ADB/MLBCRP/NCB-2/3267-3268-SRI/NCB/2016/011	08.07.2016	27.02.2017
Rehabilitation of Minipe Left Bank Canal – Stage 3	MMDE/MWSIP/ADB/MLBCRP/NCB-3/3267-3268-SRI/NCB/2016/012	08.07.2016	22.03.2017
Rehabilitation of Minipe Left Bank Canal – Stage 4	MMDE/MWSIP/ADB/MLBCRP/NCB-4/3267-3268-SRI/NCB/2016/017	08.07.2016	27.02.2017
Rehabilitation and Electrification of Radial Gated Structures at 8 Locations and Improvements to Cross Regulators Structures at 3 Locations of Minipe Left Bank Canal	MMDE/MWSIP/ADB/MLBCRP/NCB-5/3267-3268/SRI/NCB/2016/019	07.03.2017	Not yet
Heightening of Minipe Anicut Including Water Control & Measurement Facilities for Left Bank & Right Bank Canal	MMDE/MWSIP/ADB/MLBCRP/ICB-1/326-3268-SRI/ICB/2016/031	28.04.2017	Not yet

8. The Resident Engineer (RE) for MLBCRP assumed duties in October 2016, and the RE project office opened at Hasalaka in Irrigation Department owned premises. A staff of about 14 (03 Engineering Assistants; 01 Quantity Surveyor; 01 Concrete Engineer; 01 Survey Assistant; 01 Office Manager; 01 Computer Operator; 01 office Assistant; 01 Care Taker; 03 Drivers) including Health and Safety Officer for all 3 projects are working in the RE office and due to the inadequacy of technical staff, there is no dedicated officer on site under RE for the frequent monitoring of safeguard activities.

9. Project Implementation Unit (PIU) managed under the Project Director (PD) is located in Hasalaka, at the same premises, but operate in a separate building. There is one experienced and qualified Environmental Officer (EO) working under PIU – PD. In addition, Environmental Specialist PMU and PMDSC make periodical visits to the MLBCRP area to update the environmental progress.

10. The Contractor's Environmental Officer appointed for each construction package is advised and trained to make independent monitoring of their safeguard activities, and submit the monthly environmental monitoring report attached to the monthly construction progress report. Reviewing and carrying out progress meetings take place regularly at RE's office with the participation of PIU, PMDSC staff.

## 2. PROGRESS OF MLBCRP

### 2.1 Safeguard documentation and approvals

#### 2.1.1 IEE and updated EMPs

11. MLBCRP is classified as Category “B” according to ADB’s SPS (2009) and the conditional approval granted by CEA for the prepared IEE, which includes an EMP that describes mitigation measures to be adopted during design, construction and operation.

12. During the design review done by PMDSC consultants, the main design change was done with respect to the MLBCRP ICB 1 contract by reducing the weir height from 118.0 m to 117.5 m and changing the weir type from the Piano key type to Ogee type. Further, an Environmental Flow Tube on a higher level than the silt ejector level, as recommended by the Department of Wildlife Conservation in the CEA conditional approval, is included in the design in the ogee weir as a new structure to the Left bank) (LB) sluice.

13. Highlighting the above key changes to the design, an addendum for the MLBCRP was prepared by the PMDSC, submitted to CEA and ADB and obtained CEA concurrence in January 2017.

14. The updated EMP was prepared for MLBCRP and submitted in June 2016. CEA approval was granted through letter Ref. CEA/CPO/KY/07/929/12 dated as 11.01.2017 (Annex 1). The updated EMP was shared with the contractors to use as a baseline document to prepare the Contractor’s Environmental Management Plan (CEMP).

#### 2.1.2 Contractor’s Environmental Management Plan (CEMP)

15. It is a contractual requirement to submit the CEMP within 56 days of signing the contract and no construction activities were allowed for the contractor until the CEMP is approved by the PMDSC Environmental Specialist following the guidance of ADB. The guidance note (Annex 2) was shared with the contractor to prepare the CEMP, and consultative sessions and awareness programs were conducted to encourage the contractor to prepare a standard CEMP. However, obtaining an acceptable level CEMP could not be achieved within 56 days by the selected contractors and the Environmental Officers (EOs) appointed under the contractor due to lack of past experiences of preparing such documents.

16. The progress of the CEMP submission by the respective contractors of MLBCRP is given in the Table 2-1.

**Table 2-1: CEMP submission summary**

Contract Name	Contract No.	Date of contract Award	Date of 1 <sup>st</sup> CEMP submission	Date of CEMP approval	Number of revisions	Remarks
Rehabilitation of Minipe Left Bank Canal – Stage 1 (0 + 000 km to 30 + 140 km)	NCB-1	07.09.2016	03.11.2016	04.04 2017	04	Comments were submitted to contractor on 11.11.16, 02.01.2017, and revisions made at a discussion had with EO of NCB 1 on 07.02.2017 at Colombo office. Final comment for the 4 <sup>th</sup> revision was

Contract Name	Contract No.	Date of contract Award	Date of 1 <sup>st</sup> CEMP submission	Date of CEMP approval	Number of revisions	Remarks
						made on 06.03.2017
Rehabilitation of Minipe Left Bank Canal – Stage 2	NCB-2	27.02.2017	16.06.2017	Pending	01	Comments made on 20.06.2017 and 09.08.2017
Rehabilitation of Minipe Left Bank Canal – Stage 3	NCB-3	22.03.2017	15.06.2017	Pending	01	Comments made on 20.06.2017 and 07.07.2017
Rehabilitation of Minipe Left Bank Canal – Stage 4	NCB-4	27.02.2017	16.06.2017	Pending	01	Comments made on 13.07.2017

## 2.2 MLBCRP Physical progress

17. The summary highlighting the construction progress as of June 2017 for the 4 contract packages mobilized under MLBCRP is given in the Table 2-2.

**Table 2-2: Construction Progress in Contracts under MLBCRP by June 2017**

MLBCRP-NCB-1	Contract No.	MWSIP/MMDE/ADB/ MLBCR/NCB-1/3267-3268-SRI/NCB/2015/004	
	Contractor Name:	Edward & Christy Construction company	
	Letter of Acceptance:	07 Sept. 2016	
	Value of Contract:	LKR 408,641,458.10 (incl. VAT @ 15%)	
	Contractual Start Date:	13. Oct. 2016	
	Contract Duration:	24 months	
	Status:	Deliverables:	All relevant deliverables received
		Construction programme:	Received and accepted the revised construction programme
		Topographic surveys:	Ongoing - progress 40%
		Preparation of Construction drawings by Contractor:	Ongoing - approved 40%
		Construction work:	Causeways- on going - progress 53% Turnouts [D/S] -on going - progress 10% Canal Spills - on going - progress 0.8%
		Concrete batching plant:	CEA Permit received 22. Feb. 2017; plant in operation
	Problems:	Construction drawings:	Slow production
Construction activities at site:		Very slow; hesitation of the Contractor to carry out works in the canal during water issue period; construction of structures far behind the programme.	
Special Event:			
MLBCRP-NCB-2	Contract No.	MMDE/MWSIP/ADB/MLBCRP/NCB-2/3267-3268 SRI/NCB/2016/010	
	Contractor Name:	Gamini Construction Co (Pvt) Ltd	
	Letter of Acceptance:	22-Feb-17	

	<b>Value of Contract:</b>	LKR 343,067,496.58 (including VAT @ 15%)	
	<b>Contractual Start Date:</b>	25-Apr-17	
	<b>Contract Duration:</b>	24 months	
	<b>Status:</b>	Deliverables:	Being submitted
		Construction programme:	Second submission being reviewed
		Topographic surveys:	Ongoing; awaiting submission for re-view
		Preparation of Construction drawings by Contractor:	Not commenced
		Construction work:	Not commenced
		Concrete batching plant:	Installation not commenced
	<b>Problems:</b>	Construction drawings:	Not commenced
		Construction activities at site:	Not commenced
	<b>Special Event:</b>		None
MLBCRP-NCB-3	<b>Contract No.</b>	MMDE/MWSIP/ADB/MLBCRP/NCB-3/3267-3268 SRI/NCB/2016/012	
	<b>Contractor name:</b>	Nawaloka Construction Co (Pvt) Ltd	
	<b>Letter of Acceptance:</b>	22-Mar-17	
	<b>Value of Contract:</b>	LKR. 829,038,115.52 (including VAT @ 15%)	
	<b>Contractual Start Date:</b>	28-Apr-17	
	<b>Contract Duration:</b>	24 months	
	<b>Status:</b>	Deliverables:	Being submitted
		Construction programme:	Second submission being reviewed
		Topographic surveys:	Ongoing; awaiting submission for re-view
		Preparation of Construction drawings by Contractor:	Not commenced
		Construction work:	Not commenced
		Concrete batching plant:	Installation not commenced
	<b>Problems:</b>	Construction drawings:	Not commenced
		Construction activities at site:	Not commenced
	<b>Special Event:</b>		None
MLBCRP-NCB-4	<b>Contract No.</b>	MMDE/MWSIP/ADB/MLBCRP/NCB-4/3267-3268 SRI/NCB/2016/017	
	<b>Contractor Name:</b>	Gamini Construction Co (Pvt) Ltd	
	<b>Letter of Acceptance:</b>	27-Feb-17	
	<b>Value of Contract:</b>	LKR. 246,986,203.92 (including VAT @ 15%)	
	<b>Contractual Start Date:</b>	26-Apr-17	
	<b>Contract Duration:</b>	24 months	
	<b>Status:</b>	Deliverables:	Being submitted
		Construction programme:	Second submission being reviewed
		Topographic surveys:	Ongoing; awaiting submission for re-view
		Preparation of Construction drawings by Contractor:	Not commenced
		Construction work:	Not commenced

	<b>Problems:</b>	Concrete batching plant:	Installation not commenced
		Construction drawings:	Not commenced
		Construction activities at site:	Not commenced
	<b>Special Event:</b>		None

18. **MLBCRP NCB 1 contract performance:** Construction commencement was not permitted as per the guidance of ADB, until the pre-conditions and essential documentation were satisfied, including approval of Environmental Method Statements (EMS) and CEMP. However, an emergency occurred in mid-November 2016, due to breaching of a small section of the Minipe LB canal within the MLBCRP-NCB-1 contract package area.

19. Meeting the urgent requirement of rehabilitating the breached section, the contractor initiated work under the close monitoring and supervision of the RE's staff. **Figure 2-1** shows the rectified section as at mid-December 2016.



**Figure 2-1 : Rehabilitated breach section of MLBCR-NCB-1**

20. The construction progress observed to be slow due to the hesitation of the contractor to carry out works in the canal during water issue period. The construction activities in a live irrigation canal is a challenging task compared to a new canal construction in dry conditions and hence experience in the irrigation sector is important for the contractor.

21. The key physical activities carried out in the site by the MLBCRP contractor as of June 2017 progress reporting are as follows;

- Vegetation clearance

- Carrying out topographical surveys
- Supplying material for construction
- Grading and levelling operation and maintenance road
- Installation and operation of concrete batching plant
- Concrete cube casting and crushing
- Construction of cause ways and turn out structures

22. The water closure period is expecting in August 2017, and the contractor was advised to be prepared with the required drawings and manpower to make good use of the closure period for progressing the construction program. However, even during the dry season the contractor has to make sure that adequate water supply is made to the canal end to maintain the water availability in the Kadurupitiya I & II tanks located in the Wasgamuwa National park complying with the conditions laid by Department of Wildlife Conservation (DWC)<sup>3</sup>.

23. **MLBCRP-NCB-2 – NCB 4 contract performance:** as summarized in the **Table 2-2**, the contractors have not commenced any construction work as of June 2017, and CEMPs incorporating the review comments made by PMDSC were also not yet submitted for approval.

## 2.3 Approval Status of Contractor's Facilities

24. The summary of required approvals was identified by the contractor during the CEMP preparation stage with support of consultant and the Engineer, and the RE approves commencement of construction activities upon the receipt of required key approvals.

25. The site selection for the contractor's facilities and relevant concurrence are being followed up by the relevant subject specialists and officers attached to PMDSC, PMU and PIU.

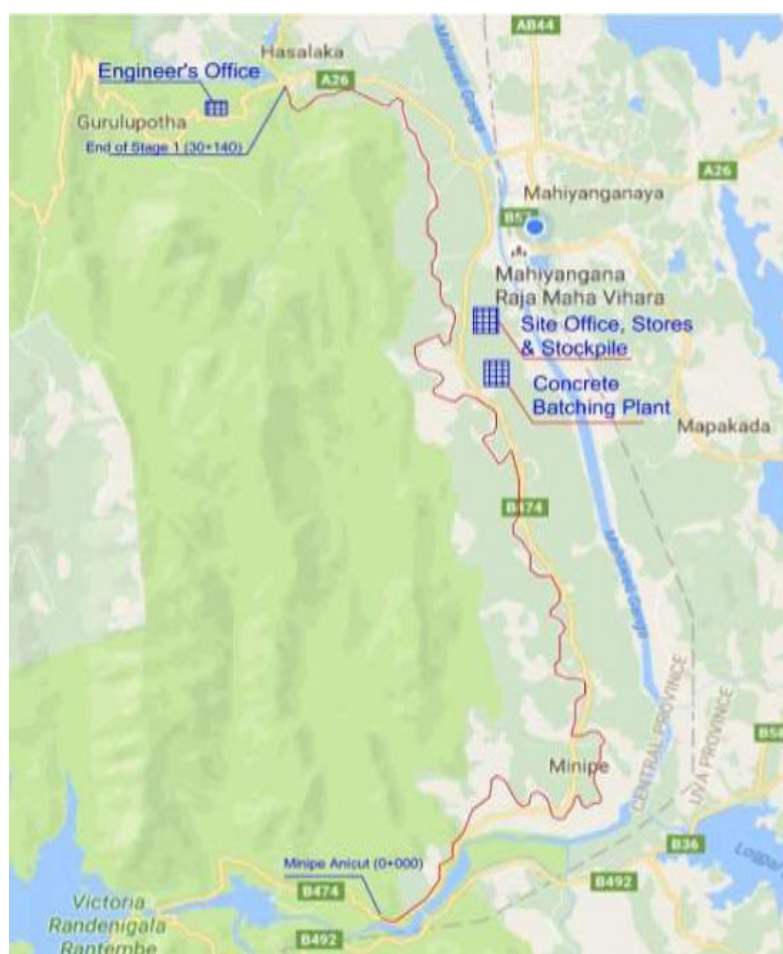
### 2.3.1 MLBCRP-NCB-1 Contractor

26. Identification of sites for the contractor's office, concrete batching plant and disposal areas were completed by carrying out site visits with the participation of PMDSC Environmental Specialist (National) and Environmental Officers of PIU and the contractor assigned for the Minipe contract. **Figure 2-2** shows the map of the MLBCR-NCB-1 contractor's facilities.

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<sup>3</sup> Section 2.3 of of letter issued by DWC on 07.10.2075 with the CEA conditional approval (Ref. *er. 24*/6/1/171/-vii)





**Figure 2-2: Map of the MLBCR-NCB-1 Contractor's Facilities**

27. The areas for stockpiling and waste disposal were identified and approval from the Divisional Secretariat (DS) has been obtained. Most of the identified sites are existing borrow areas, in which the land owners are willing to fill the areas through the project and reinstate the lands to use later for cultivation purposes. The disposal and borrow areas were identified outside the wildlife reservation in compliance with ADB SPS (2009) and GoSL environmental conditions after conducting a joint site inspection. The areas identified as disposal areas and stock yard are summarized in the **Table 2-3**.

**Table 2-3: Location and ownership details of identified disposal and stock areas**

	Location	Ownership	DS concurrence
<b>Disposal areas</b>			
1.	26/1, Morayaya, Minipe	W.M Kumarihami	obtained
2.	27/12, Morayaya, Minipe	M.W Lakshman Bandara	obtained
3.	6/3, 8th mile post, Ambagahapalassa	D.M Samila Nimesha	obtained
4.	1/3, 3rd Canal, Ambagahapalassa	Y.M Samarakoon Banda	obtained
5.	26/11, Morayaya, Minipe	E.G Jayanthi	obtained
6.	25/35, Randenigala Rd, Handaganawa	U.G Samarasighe	obtained
7.	61, 9th Mile Post, Rantembe	P.B.M Premarathna	obtained



	Location	Ownership	DS concurrence
8.	4/11, Ambagahapalassa	J.M Gunarathna Banda	obtained
9.	12/25, 7th Mile Post, Ambagahapalassa	J.M.K.G.K Kumari	obtained
10.	12/8, 7th Mile Post, Ambagahapalassa	Y.M.W.G Tikiri Banda	obtained
11.	13/5, 7th Mile Post, Ambagahapalassa	R.U.G Manil Rajapaksha	obtained
12.	6th Mile Post, Ambagahapalassa	M.W.G Thilakasiri Jayawardhana	obtained
13.	No 24/05, Handaganawa	G.G Gamini Aberathna	obtained
<b>Stock yard</b>			
14.	Morayaya, Minipe	Department of Irrigation,	obtained
15.	No.3, Morayaya, Minipe	Private	obtained

28. There are no metal quarries operated by the contractor, and quarry material is being purchased from the licenced quarry operators.

29. The identified gravel sites located within Victoria/Randenigala/Rantambe (VRR) sanctuary area and the lands identified associated with the socially sensitive areas (just above the settlements) were excluded by carrying out site visits and encouraging contractor awareness on ADB safeguard policies.

30. It was confirmed with the contractor about the land ownership and approval status prior to establishing any of the contractor facilities or material borrow areas. Details of the contractor's facilities are given in **Table 2-4**.

**Table 2-4: Approval Status of the Contractor's Facilities and Activities**

Facility/ Activity	Location	Ownership	Licence Type	Licence details	Validity period	
				Number	From	To
Metal Crusher	Paragaha Kalee, Mahiyanganaya	Dhassana Metal Crusher	Environmenta l Protection Licence (EPL)	Pending	-	-
			Trade Licence (TL)	Pending	-	-
Metal Quarry	Kovilyaya, Mahiyanganaya	Mr. K. U. Vidanagamage Private and existing	EPL	06204(R1)(F1)	2016-08-19	2017-08-18
			TL	Pending	2017.01.23	2017.12.31
			Mining Licence (ML)	IML/B/HO/3059/L R/3	2016-06-22	2017-06-21
	Reeppayaya, Madayaya	Ruhunu Development Construction & Engineers (Pvt) Ltd	EPL	11239(R1)	2016-08-13	2017-08-12
			TL	-	2017-01-23	2017-12-31
			Mining Licence (ML)	IML/B/HO/8793/L R/1	2016-09-07	2017-09-06

Facility/ Activity	Location	Ownership	Licence Type	Licence details	Validity period	
				Number	From	To
Borrow Pit	Wewatha, Mahiyanganaya	Mrs. H. M. C. Hemalatha - Private	ML	IML/B/HO/6019LR/02	2016-12-29	2017-08-28
Sand Mining	Ambagahapalasa, Minipe	Mr. J. G. D. N. Kulasooriya	ML	AL/A/KAN/1799	2016-11-23	2017-11-23
Concrete Batching Plant	No. 35/7, Morayaya, Minipe	Edward and Christie	Environmental Recommendation for construction is issued by Central Provincial Office of CEA through the letter Ref. CEA/CPO/KY/07/1597/2016 dated as 30.12.2016 EPL No. CE-B01282			

## 2.4 Contractors' Training and Awareness

33. The training and awareness programs carried out to improve awareness of the contractors' staff and the Environmental Officers appointed under each contract package of MLBCRP that has been mobilized by June 2017 comprises three main activities: (i) full day workshops with the participation of stakeholder agencies, Project Management Specialist of SLRM-ADB as a resource person and community representatives, (ii) full day in-house combined workshop, and (iii) individual consultation sessions.

34. The full day workshops are conducted focusing on the following key topics;

- Overview of the Project Framework and ADB safeguard aspects by the Project Management Specialist of SLRM-ADB
- Environmental safeguards related to the project (regulatory requirements)
- CEMP preparation, implementation strategy and safeguard documentation requirements during the construction
- Social aspects related to Minipe emphasizing GRC and the grievance solving mechanism
- Communication on environmental safeguards
- Health and Safety requirements and regulatory background in the project (conducted by Factory Inspecting Engineer, Regional Labour Department, Kandy)

35. Preparation of an Environmental Activity Plan for each Contract package is carried out as a combined exercise with the participation of Project Manager, Environmental Officer, Health and Safety Officer of each contractor, and respective PMDSC, PMU specialists.

36. The list of training and awareness programs conducted during the period from June 2016 to June 2017 in MLBCRP is given in **Table 2-5**.

**Table 2-5: training and awareness programs conducted during the period from June 2016 to June 2017 in MLBCRP**

Package	Training date	Venue	Duration	Subject
MLBCRP NCB 1	08.11.16	RE Office, Hasalaka	2 hours	Awareness meeting - Orientation to the Contractor on Env safeguard, preparation of CEMP,

Package	Training date	Venue	Duration	Subject
				guidance on Env monitoring and EMP implementation
MLBCRP NCB 1	16.02.17	Mahiyanganaya	Full day	Contractor's awareness workshop with the participation of all stakeholder groups, contractor, ADB and client
MLBCRP NCB 2	30.05.17	RE Office, Hasalaka	Full day	Awareness meeting - Orientation to the Contractor on Env safeguard, preparation of CEMP, guidance on Env monitoring and EMP implementation
MLBCRP NCB 3				
MLBCRP NCB 4				
MLBCRP NCB 1, NCB 2, NCB 3 and NCB 4	31.05.17	RE Office, Hasalaka	Full day	preparing activity plan for NCB 2, NCB3, and NCB 4 contractors, covering the required approvals, key tasks as per the construction program-complying with ADB safeguard (SPS 2009) and GOSL Environmental regulations

## 2.5 Compliance with CEA's Conditions

37. The conditional approval issued (CEA/CPO/KY/07/929/12 dated 16.10.2017) by Central Environmental Authority (CEA) for IEER consist of 13 conditions with detail subsections covering General conditions, ecological aspects, Social aspects, hydrological and wildlife aspects, land stability and soil erosion aspects, waste and excavated material disposal, restoration and rehabilitation, Archaeological aspects, Noise and Vibration, material and machinery transportation, Safety emergency and Environmental Management Plan (EMP).

38. Complying with the conditions related to regulatory and approval requirements, as described in the Table 2.4, relevant approval has been obtained prior to commence the relevant construction activity.

39. The contractor is given the awareness on the CEA conditions and ensure that contractor is complying with the conditions related to construction activities. The Department of Wildlife Conservation (DWC) has included their conditions annexed to the CEA conditions, and according to the section 2.1 and 2.2 of the DWC conditional approval (6/1/17 I-vii), design was revised incorporating the environmental flow tube and the changes were submitted by preparing an addendum to IEE and approval received from CEA. Further, the updated EMP prepared as per the CEA condition section 13 is submitted and already approved by CEA on 11 January 2017 (Annex 3).

### 3. CEMP IMPLEMENTATION & MONITORING

40. The contractor is contractually bound to implement the CEMP and carry out independent monitoring during the construction period as per the formats agreed with the RE/PMDSC Environmental Specialist. In addition to the CEMP, prior to each construction activity, it is compulsory to submit the Environmental Method Statement (EMS) based on the format discussed during the Contractor's orientation program.

41. The other relevant documentation and reporting to be managed by the Contractor's Environmental Officer include: (i) Environmental Issue Log, (ii) Contractor's Schedule for CEMP implementation, (iii) Grievance Log, and (iv) Monthly Environmental Monitoring Report. The environmental issues of the previous month is discussed in the monthly progress meetings carried out by the RE/PMDSC with the participation of PD/PIU.

42. Lack of adequate technical staff under RE and not having a dedicated expert in the field level to carry out the continuous environmental monitoring in the site from the RE/PMDSC, comprise a key disadvantage, where there is a possibility of non-compliance occurring during the construction period. Alternative institutional arrangements adopted under the existing provisions to avoid or control arising non-compliances and duly contain if arise.

#### 3.1 Environmental risks and safeguard compliance

43. This section includes the information gathered through periodical site visits, contractors' independent monitoring reports, and discussions held at the contractors' monthly progress meetings, since there is no continuous CEMP monitoring take place on site. Since only the MLBCR-NCB-1 contractor had commenced their physical work on site by the end of the reporting period, the relevant details are available related to that construction package only.

44. The site identified for the concrete batching plant had been granted approval by the Central Province office of the CEA for the construction of the plant and construction is in progress. The identified site is close to a stream and hence the environmental risk associated with construction and operation is high. Hence the contractor was advised to prepare the site so as not to pollute the nearby stream environment.

45. The key environmental aspects, identified as "high risk" to "moderate risk", and the summary of self-monitoring findings of the contractor were listed during the site preparatory and construction work. **Table 3-1** summarize the findings.

**Table 3-1: Summary of Significant Environmental Impacts and Measures Adopted**

Activity	Observed Impact	Risk level	Adopted Mitigation measure	Effectiveness of the mitigation
Survey and site clearance	Spreading Alien Invasive Species (AIS)	Moderate	<ul style="list-style-type: none"> <li>Manual removal of AIS and collection, transport to the waste disposal area and burning immediately</li> <li>Washing and cleaning transported vehicles</li> </ul>	Moderate
Rehabilitating canal breach section	Soil erosion and sedimentation	High	<ul style="list-style-type: none"> <li>None</li> </ul>	-

Transport construction material	Spillage of construction material during transportation	Moderate	<ul style="list-style-type: none"> <li>Covering transport vehicles during transportation</li> </ul>	Moderate
Construction of batching plant	Soil erosion at batching plant area	High	<ul style="list-style-type: none"> <li>Turfing</li> <li>Land preparation with embankments around the plant</li> </ul>	Moderate
Batching plant operation	Dust generation	High	<ul style="list-style-type: none"> <li>Covering the surrounded area</li> </ul>	Moderate
	Pollution of adjacent stream	Moderate	<ul style="list-style-type: none"> <li>Reuse of water collected in a settling pond</li> </ul>	Moderate
Stock piling and material storage	Generation of dust	Moderate	<ul style="list-style-type: none"> <li>Spreading water</li> </ul>	Moderate
Material transportation	Spillage of construction material	Moderate	<ul style="list-style-type: none"> <li>Covering the vehicles during transportation of material</li> </ul>	Moderate

## 3.2 Environmental issues and grievances recorded

47. The environmental non-compliance observed by the Engineer/PMDSC, related to the concrete batching plant, where NCB-1 contractor had been operating the batching plant without the EPL, and not completing the waste water disposal mechanism. The CRE/PMDSC made immediate arrangements to seal the plant until the contractor obtain the EPL from CEA and ensured that the plant was operating up to the required standards.

48. Environmental Issue log and Grievance Log are maintained at the site office, but there are no records for the period of June 2016 to June 2017. Grievance Redress Mechanism (GRM) is established by forming Grievance Redress Committees (GRC) for MLBCRP NCB 1 in December 2016 and for other packages including NCB 2, NCB 3, NCB 4 and ICB 1 by April 2017.

## 3.3 Other environmental safeguard actions

### 3.3.1 Reforestation Program under MLBCRP

49. A site survey was undertaken in September 2016 (from Minipe Anicut to Wasgamuwa National Park) along the LB canal jointly by PMU, PIU and the IE office of Hasalaka and prepared a tentative plan (digitized map with photographic survey data; 05/10/2016) indicating potential locations for reforestation along LB canal as recommended in IEE. After that, on 20 December 2016, a site visit was made with the participation of PMDSC Environmental Specialist, Senior Construction Engineer, Environmental Officers and relevant other officers representing PIU and the contractor (Edward and Christie). The visit covered the MLBCR-NCB-1 project area from 0+000 km to 33+000 km with the objective of identifying the possible reforestation areas along the canal bank.

50. It was revealed that major portion of the canal bank is encroached and converted to seasonal agriculture lands, and home gardens, and the rest of the areas are already secondary forest habitats or wetlands. Hence, the recommendation in the Initial Environmental Examination Report (IEER) to reforest 145 ha along the Minipe LB Canal reservation is not practical except at a few locations.

51. The financial allocations for the reforestation program is included under each contract package as summarized in the **Table 3-2**, and hence the reforestation program is required to be completed during each contract period.

52. Initially it was suggested by the PMDSC to appoint one Forestry Specialist on part-time basis to guide the contractor on site selection in consultation with the FD and DWC, species selection and subsequent monitoring of the reforestation program to be carried out by the contractor / sub-contractor appointed by the main contractor of each package. However, during the stakeholder meeting of the ADB mission held in February 2017, the Forest Department agreed to become involved in the reforestation activities in Minipe. However, work program, payment procedures and relevant agreements were still under discussion at the end of the reporting period and were to be finalized by the PMU, PD/PIU of MLBCRP.

53. Followed by decision to undertake reforestation with Forest Department, an initial discussion was held on 29<sup>th</sup> March 2017 with "Conservator of Forests" of FD to develop protocol for reforestation through Forest Department under the funding of the Contractor and developed the "Method of Implementing the Reforestation Requirements under the MWSIP" (Annex 4).

**Table 3-2: Summary of Significant Environmental Impacts and Measures Adopted**

Package	Cost allocated (LKR Million)
MLBCRP NCB 1	12.45
MLBCRP NCB 2	6.17
MLBCRP NCB 3	24.4
MLBCRP NCB 4	37.67
MLBCRP ICB 1	29.31

### 3.3.2 Environmental Baseline and Periodical Environmental Quality Monitoring

54. The baseline data collection for environmental parameters of surface water quality, noise, vibration, ambient air quality and sediment levels was planned for commencement through a third party and the Request for Quotation of Work (RFQW) was issued for four shortlisted national bidders (accredited laboratories) in September 2016 based on the ToR for Baseline Data Collection.

55. The bid evaluation was completed in November 2016, and approval from the MMDE was granted in May 2017. The contract award and initiation of the baseline data collection for the entire MLBCRP was expected to be commenced in July 2017.

56. Once the baseline data is collected for air quality, water quality, noise and vibration, sediment levels, the periodical monitoring is to be carried out once in every 3 months by a selected third party.

#### **4. KEY ACTIVITIES FOR NEXT YEAR (JUNE 2017- 2018)**

57. Several environmental and ecological surveys are planned relating to design changes in the MLBCR-ICB-1 package, which include tree enumeration for the newly proposed sections, and ecological survey to update the baseline conditions related to the critical species in the project impact area.

58. Identifying a qualified accredited laboratory to carry out periodical environmental quality data collection will be achieved through the competitive bidding process.

59. Implementation of standard environmental monitoring system through RE/PMDSC and implementation of the reforestation program will comprise another important activity during the coming year.

## **Annex 1:**

**CEA Approval for Updated EMP for MLBCRP**



Attention : Mr. Sisira Kumara

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உமது தொடர்பு  
Your Ref.

අපේ යොමුව  
எமது தொடர்பு  
Our Ref.

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திகதி  
Date

CEA/CPO/KY/07/929/12

16/10/2015

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மத்திய சுற்றாடல் அதிகாரசபை

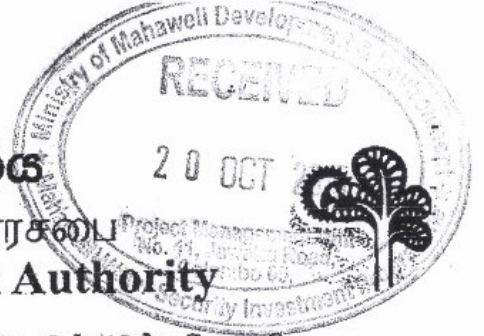
Central Environmental Authority

පරිසර පිටිය , 104, ඩෙන්සිල් කොබ්බෑකඩුව මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.

"பரிசர பியச", 104, டென்சில் கொப்புகடுவ மாவத்தை, பத்தரமுல்லை, இலங்கை.

"Parisara Piyasa", 104, Denzil Kobbekaduwa Mawatha, Battaramulla, Sri Lanka.

Web : www.cea.lk



Central Provincial Office,  
Dam Site, Polgolla.  
Tel. /Fax 081-2494884.

Director General,  
Department of Irrigation,  
No. 230,  
Buddhaloka Mawatha,  
Colombo 07.

Dear Sir,

**ENVIRONMENTAL APPROVAL FOR PROPOSED IMPROVEMENT OF MINIPE ANICUT, AND REHABILITATION OF THE MINIPE LEFT BANK CANAL PROJECT.**

This is to inform you that the Central Environmental Authority(CEA) being the project Approving Agency for the above project has studied the Initial Environmental Examination Report(IEER) submitted to this Authority on 06<sup>th</sup> July 2015 by you and your responses to the clarifications sought by the Technical Evaluation Committee (TEC) and has decided in terms of regulations No. 1 of 1993 as amended by the Gazette (Extra-Ordinary) No.1159/22 dated 22.11.2000 to grant approval for the implementation of the above project subject to the terms and conditions given below.

**1. GENERAL CONDITIONS**

- 1.1 This environmental approval is valid for improvement of the Minipe Anicut raising by 4m height and rehabilitation of minipe left bank canal as described in the IEER dated April 2015 submitted by the Department of Irrigation.
- 1.2 This Approval is granted on the basis that all information provided by the Department of Irrigation in the IEER dated April 2015 is true and accurate.
- 1.3 This approval is valid for a period of 3 years from the date of issue of this letter, unless upon application in writing to this Authority within 30 days prior to the expiry date the validity is extended.

Chairman	Tel : 2872361, 2872348 Fax : 2872347	Director General	Tel : 2872359 Fax : 2872608	Gen. Office	Tel : 2872278, 2873447, 2873448 7877277-280	Complain Unit : 071 3603333 , 2888999
Deputy Director Generals	HRD. Admin & Finance Division Tel : 2865296 Fax : 2877515	Env't. Pollution Control Division	Tel : 2873453 Fax : 2872605	Env't. Mgt & Assess. Division	Tel : 2872388 Fax : 2872296	Env't. Edu. & Awareness Division Tel : 2872297 Fax : 2872609
Directors	2872607 (Admin), 7877290 (Finance) 2872301 (HRD), 7877288 (Planning)	2873452 (EPC), 2872606 (Lab) 2882335 (WM)	2872346 (NRM), 2876643 (EIA) 2867263 (R&D) Fax : 2872296	2867266 (EEA) Fax : 2872609 Media Unit : 2873449	2872604 (Legal) (Western Province) Tel: 2862831 Fax : 2865293	





- 1.4 The Department of Irrigation where necessary should obtain from approvals in respect of any alterations that would be made to the IEER dated April 2015 submitted to this Authority.
- 1.5 The Department of Irrigation is bound to ensure that those terms and conditions are adhered to and shall have full control over a third party that may be involved in this project implementation. The CEA should have access to the contract documents pertaining to environmental aspects, entered into by the Department of Irrigation and any outside contractors. The conditions in this approval should be included into the contract documents, so that the contractor or sub-contractor is held responsible for carrying them out during construction and on completion of the work. The Department of Irrigation would be held responsible for the breach of any such conditions by any contractor or sub-contractor.
- 1.6 The Department of Irrigation shall intimate to CEA, the date of commencement of the project activities/construction activities, inclusive of a phased implementation schedule.
- 1.7 A copy of this approval letter should be kept at the project site at all times, for purposes of perusal by concerned agencies.
- 1.8 It is the duty of the Department of Irrigation to inform this Authority of any adverse environmental impacts which may arise during project implementation which is not anticipated at this stage. In such an events, relevant guidelines and necessary mitigatory measures should be implemented as directed by this Authority. The Department of Irrigation should ensure that such impacts are properly assessed and addressed even at a later stage of project implementation.
- 1.9 The Department of Irrigation should co-ordinate closely with planning agencies, relevant Provincial and Local Authority, Divisional Secretaries ( Minipe / Kandeketiya) and other Government Departments to resolve any conflict with existing and future development plans of the area.
- 1.10 Relevant Local Authority in the Project Area should be kept informed regarding the project activities and should have written approval of the same.
- 1.11 The trees expected to be removed in the project area listed out according to the page 136, 137 and 138 of the IEER should be enumerated and removed with the consultation of Divisional secretary ( Minipe / Kandeketiya) and Forest Department through the state Timber Corporation.
- 1.12 Any additional condition stipulated by this Authority as and when required shall be strictly adhered to.



## 2. ECOLOGICAL ASPECTS

- 2.1 A 100 meter reservation area from the FSL of the reservoir or any additional area should be demarcated and declared as a protected area.
- 2.2 Adequate reservation for left bank canal should be demarcated and managed properly avoiding encroachments.
- 2.3 Reforestation / enrichment planting should be carried out within the above reservation area in close consultation with the FD using native species.
- 2.4 Reforestation / enrichment areas should be clearly marked on a map and submitted to this Authority and FD together with replanting schedule.
- 2.5 Precautions should be taken to reduce construction impacts on existing natural forest areas, streams and wild animals within these habitats.
- 2.6 The improvement of left bank canal should be designed in such a way the it will not cause impacts on wild life of the area.
- 2.7 Temporary labour camps should not be constructed within remaining forest areas.
- 2.8 Abandoned dumping sites, stockpiles and borrow pits should be rehabilitated and suitable tree planting programmes should be implemented in these areas in consultation with the FD.

## 3. SOCIAL ASPECTS

- 3.1 The Department of Irrigation should be responsible for providing facilities, in the case that there are impacts to existing water usage from the left bank canal during the improvement stage of the canal.
- 3.2 Affected road segment/s due to project activities should be re-routed or modified appropriately in order to avoid impacts on existing transportation system of the project area.

## 4. HYDROLOGICAL AND WILDLIFE ASPECTS

- 4.1 The Department of Irrigation should undertake to release an adequate volume of water for downstream of Mahaweli River maintaining a healthy ecology and for utility of downstream users to maintain the downstream in proper condition. Following operational procedure should be adopted.
  - a) The conditions stipulated by the Department of Wildlife Conservation by the letter No 03/6/1/1/171 - vii and dated 07-10-2015 (Copy in the annexe) shall strictly be adhered to.





#### b) Other Requirements

Adequate water should be provided to the villagers in the area who depend on seepage and drainage water of Mahaweli river for their day to day activities.

- 4.2 Necessary measures should be taken to mitigate water pollution due to contaminant leakage from machinery and workers sites during construction phase.

### 5. LAND STABILITY AND SOIL EROSION ASPECTS.

- 5.1 Recommendations made in the Landslide Hazard Investigation Report dated 2014 October Numbered LRRMD/SPI/WP/MNP/14/31/14216 issued by the NBRO shall be strictly adhered to as stated in the Annexure VII of the IEER.
- 5.2 Earth retaining structures should be applied wherever required to prevent initiation of local failure.
- 5.3 The riverbanks of the inundation area must be protected to minimize water infiltration into the soil mass of the river banks.
- 5.4 Earth Work shall be carried out during low rainfall season to minimize soil erosion.
- 5.5 Uprooting the trees should be done with appropriate equipment to minimize the soil erosion/ damage to the soil.
- 5.6 Natural Water paths should be kept free from any obstruction through any kind of construction or disposal of soil/rocks etc. All efforts should be made during constructions period to avoid adverse impacts on existing drainage system of the project area.
- 5.7 Soil removed during the construction of project components should not be dumped at any edge of waters or disposed into surrounding environment without proper protection measures to prevent soil erosions.
- 5.8 Exposed areas should be kept suitably protected to prevent erosion or emission of dust during dry and windy periods.

### 6. DISPOSAL OF EXCAVATED MATERIALS

- 6.1 Excavated materials as far as possible should be used in the construction sites which are associated with the project, care must be taken by the way of adequate safeguards been put in place to prevent erosion and washing away of any of this material into the water ways.



6.2 Any balance materials shall be disposed of in consultation with Authority. The details regarding such disposal sites should be submitted to this Authority and approvals obtained.

6.3 Soil /debris removed during the implementation of the project components should not be disposed/dumped into neighbouring areas.

## **7. RESTORATION /REHABILITATION OF CONSTRUCTIONS SITES**

7.1 Borrow pits and temporary transport routes shall be rehabilitated with required measures.

7.2 Temporary used areas shall be restored /rehabilitated properly and post - construction unusable material shall be disposed of in consultation with the relevant local Authorities. The land used for temporary establishments shall be restored upto the level of satisfactions.

7.3 Rehabilitation of construction sites and spoil dump areas should be completed prior to commissioning of the operational activities. The disturbed areas due to constructions of labour camps spoil areas stockpile areas workshops office etc shall be rehabilitated and replanted by using native plant species.

## **8. WASTE DISPOSAL**

8.1 Measures shall be taken to prevent discharge of cement, cement mix, fuel oil, lubricants, waste oil, polythene and other waste materials into water bodies during construction and operation period. Oil separation devices shall be installed where required.

8.2 Proper sanitary facilities shall be provided for the work force involved in the construction activities.

## **9. ARCHAEOLOGICAL ASPECTS.**

The approvals from the Department of Archaeology should be obtained prior to commencement of the project. If any archaeological remnants are encountered within the project area suitable measures shall be adapted to conserve in consultation with the Archaeological Department.

## **10. NOISE AND VIBRATION**

10.1 All Constructional activities shall be carried out in such a way, so as not to cause nuisance to the wildlife and neighbourhood.





10.2 Noise levels at the construction sites shall not exceed 75 dB (A) from 06.00 hours to 21.00 hours and 50 dB (A) from 21.00 hours to 06.00 hours to be measured at the boundary of the site.

10.3 Appropriate mitigatory measures should be adapted in order to maintain the vibration levels generated by construction, activities, operations of machineries and equipment, and vehicle transport within the interim standards stipulated by this Authority.

## 11. TRANSPORTATION OF MATERIALS AND MACHINERY.

11.1 Suitable action should be taken to identify the routes of transport and to mitigate traffic issues during constructions and operational period. Required approvals should be obtained from relevant traffic authorities.

11.2 Transport, loading and unloading of materials shall be carried out in such a way as not to cause nuisance to the surrounding environment.

11.3 Construction materials should be adequately covered during transportation to avoid wind induced dust and spillage.

11.4 The vehicles and the machinery used in the project should be maintained regularly in order to avoid smoke emissions.

## 12. SAFETY/ EMERGENCIES.

The Department of Irrigation shall draw up an emergency preparedness plan inclusive of dam failures and other contingencies such as issues associated with flood etc. The Department of Irrigation should ensure that all relevant personnel are trained and aware of their responsibilities in executing the plan. Copies of the plan shall be placed at suitable locations and to consultate on a regular basis.

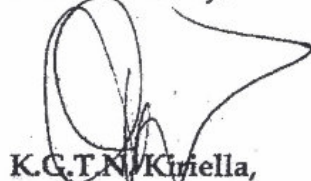
## 13. ENVIRONMENTAL MANAGEMENT PLAN (EMP)

13.1 ~~The Department of Irrigation shall forward to the CEA a detailed EMP incorporating the mitigatory measures proposed precisely and the monitoring plan. It should contain the significant impacts of the project, specific mitigation measures to be implemented for each significant impact schedule of implementation of mitigation measures, parameters to be monitored with intervals/ frequencies and the responsible agencies for implementation of the EMP. The EMP should be approved by the Monitoring Committee.~~

13.2 A Monitoring Committee consisting representatives of CEA, DWC, MASL, Department of Agrarian Development, Department of Archaeology, Divisional Secretary Minipe/kandaketiya and pradeshia sabha of Minipe, kandeketiya and any other agency appointed by the CEA to monitor the implementation of EMP by the Department of Irrigation.

- 13.3 Periodic compliance report should be submitted by the Department of Irrigation on progress of the implementation of the EMP.
- 13.4 Suitably trained and qualified officers who would be responsible for the implementation of the EMP shall be assigned.
- 13.5 This officers shall act as the contact person(s) for members of the public and shall liaise with local organisations.
- 13.6 All costs incurred by the monitoring committee appointed by the CEA to oversee implementation of the EMP shall be borne by the Department of Irrigation

Yours faithfully,



K.G.T.N. Kiriella,  
Director (Central Province),  
Central Provincial Office,  
Central Environmental Authority,  
Polgolla.

cc

1. Additional Secretary, Ministry of Mahaweli Development and Environment.
2. Director General, Mahaweli Authority of Sri Lanka.
3. Director General, Department of Archeology
4. Director General, Department of Wildlife Coservation.
5. Divisional Secretary, Minipe/ Kandeketiya.
6. Secretary/Officer in Charge , Pradeshiya Sabha, Minipe/Kandeketiya.





**වනජීවී සංරක්ෂණ දෙපාර්තමේන්තුව**  
**வனசீவராசிகள் பாதுகாப்புத் திணைக்களம்**  
**DEPARTMENT OF WILDLIFE CONSERVATION**

ප්‍රධාන කාර්යාලය - අංක 811/ඒ, ජයන්තිපුර පාර, චන්ද්‍රිකර්මල  
 பிரதான அலுவலகம், இல. 811/ஏ, ஜயந்திபுர வீதி, பஞ்சாபுரம்  
 Head Office - No. 811/A, Jayanthipura Road, Chandrikarmala



මගේ අංකය  
எனது இல.  
My No.

03/6/1/171 - vii

ඔබේ අංකය  
உமது இல.  
Your No.

දිනය  
திகதி  
Date

2015.10.07

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පොල්ගොල්ල.

මහත්මයාණෙනි,



**පාරිසරික අනුමැතිය ලබාදීම - මිණිපේ අමුණ වැඩිදියුණු කිරීමේ ව්‍යාපෘතිය**

ඉහත ව්‍යාපෘතිය සම්බන්ධයෙන් ඔබ විසින් මා වෙත යොමු කර ඇති අංක CEA/CPO/KY/ 07/ 929/ 12 හා 2015.09.01 දිනැති ලිපිය හා මගේ අංක 03/6/1/171 - iii හා 2012.11.07 දිනැති ලිපියට වැඩිමනත්වයි.

02. මෙම ව්‍යාපෘතියේ අවසන් මූලික පාරිසරික පරීක්ෂණ වාර්තාවේ යෝජනා කර ඇති පරිදි වගාකරනු ලබන කාල සීමාව සහ වගා නොකරන කාල සීමාව (ජනවාරි මස 30 සිට අප්‍රේල් මස 15 දක්වා සහ අගෝස්තු මස 25 සිට නොවැම්බර් 15 දක්වා) තුළ පිළිවෙලින් කක්පරයට සහ මීටර් 8 ක් 16 ක් ලෙස පාරිසරික ජල ධාරාවක් (Environmental Flow) මුදාහැරීම පිළිබඳව එකඟ වන හමුත් යෝජනා කර ඇති පරිදි පාරිසරික ජල ධාරාව මුදා හැරීම දිනකට පැය 5 කට පමණක් සීමා කිරීමට එකඟ විය නොහැකිය. අප යෝජනා කරනුයේ අඛණ්ඩ පාරිසරික ජල ධාරාවක් මුදා හරින ලෙසය. එබැවින් මෙම ව්‍යාපෘතිය වෙත පාරිසරික අනුමැතිය ලබා දීමේදී එයට පහත සඳහන් කොන්දේසි ඇතුළත් කරන මෙන් ඉල්ලා සිටිමි.

- 2.1. වගා කරන කාල සීමාව තුළ කක්පරයට සහ මීටර් 1.6 ක් ද වගා නොකරන කාල සීමාව තුළ කක්පරයට සහ මීටර් 3.2 ක් ද වශයෙන් පාරිසරික ජල ධාරාව අඛණ්ඩව මුදා හැරීමට සැලසුම් කළ යුතුය.
- 2.2. පාරිසරික ජල ධාරාව මුදාහරින බවය (Environmental Flow tube) මඩ කොරොව්ව මට්ටමට ඉහළින් ස්ථාපනය කළ යුතුය.
- 2.3. වස්තුවූව ජාතික වනෝද්‍යානයේ කදුරුපිටිය I සහ II වැව් වලට අඛණ්ඩව ජලය සැපයිය යුතුය.
- 2.4. කක්ෂව වාසස්ථාන වලට හානි සිදු නොකළ යුතුය.
- 2.5. රක්ෂිතය තුළ ඇති ශාක ඉවත් කිරීමට සිදුවන්නේ නම් ඒ සඳහා අනුමැතිය ලබාගත යුතුය.
- 2.6. රක්ෂිතය තුළ සිදු කරන සංවර්ධන කටයුතු වනජීවී සංරක්ෂණ නිලධාරීන්ගේ අධීක්ෂණය යටතේ සිදුවිය යුතුය.
- 2.7. සියළු කටයුතු වනසත්ව හා වෘක්ෂලතා ආරක්ෂක ආඥා පනතෙහි ප්‍රතිපාදන උල්ලංඝනය නොවන ලෙස සිදු කළ යුතු වේ.

මෙයට - විශ්වාසී,

Mr. Sumil Perera  
F.N.A.  
3-4  
16/12

විජේලක්ෂ්මි ජයරත්න  
අධ්‍යක්ෂ (මෙහෙයුම්)  
අධ්‍යක්ෂ ජනරාල් වෙනුවට

දුරකථන  
தொலைபேசி  
Telephone

අධ්‍යක්ෂ ජනරාල් - 011 2888581  
 අධ්‍යක්ෂ (ලාභන) - 011 2888583  
 අධ්‍යක්ෂ (මෙහෙයුම්) - 011 2888582  
 අධ්‍යක්ෂ (මුදල්) - 011 2888584

ප්‍රධාන කාර්යාලය / அலுவலகம் / Head Office: 011 2888586  
 ෆැක්ස් / தொலைநகல் / Fax: 011 2883355  
 ඊ-මේල් / மின்னஞ்சல் / E-mail: director@dwg.gov.lk  
 වෙබ් අඩවිය / வலைப்பිள்ளம் / Website: www.dwc.gov.lk



**Annex 2:**  
**The Guidance Note for CEMP Preparation**

## Programme Management, Design and Supervision Consultant (PMDSC)

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### MAHAWELI WATER SECURITY INVESTMENT PROGRAMME (MWSIP)

The CEMP requires including following key sections based on the construction method statements and schedule referring to the actual site conditions:

- (i) Definition of project boundaries (footprint of the construction activities, other contractor's facility locations, disposal areas, borrow areas (if any), worker camp areas, machinery yards, access roads, transportation routes of borrow, disposal material etc.)
- (ii) Identification of environmental values and sensitive receptors of the site and its surrounds (once the site boundaries are defined, the sensitive receptors and the environmental values of the area need to be confirmed. The EIA/IEE document and the updated EMP shall often provide the necessary information. Such information can be presented as an overlay of the engineering drawings or maps)
- (iii) Construction activities - based on the construction plan/schedule prepared, it is important to mention what the various phases of work are for each site, as different phases includes different activities and thus different environmental management requirements (ex. Site surveying, vegetation clearance, soil stripping and earth movement, excavation, electric elephant fencing, concrete work, blasting etc.)
- (iv) Risk Assessment Matrix: Risk Assessment and Environmental management measures based on the construction activities.  
(Risk is assessed as the likelihood that the activity will have an effect on the environment as well as the consequence of the effect occurring. Hence, it is often described as "Risk = Likelihood x Consequence").
- (v) Site plans - completed risk matrix provides a detailed assessment of the environmental management requirements for a construction site. The identified environmental management requirements need to be included in a site plan. The site plans range from simple line drawings to marked-up engineering drawings, to detailed overlays on aerial photographs. A site plan must cover the extent of the construction activity and should contain;
  - Indication of North, and scale;
  - Existing and planned supporting infrastructure (e.g., access roads, water ways, electricity supply etc.);
  - Location of planned work;
  - Drainage system;
  - Location of sensitive receptors (e.g. animal crossings etc.)

The environmental management measures are then overlaid onto the site plan. This can be done by hand or by using computer graphics / symbols depending on what is available. ADB will not consider a CEMP to be complete unless a site plan accompanies the risk assessment matrix.

- (vi) Environmental Work plans - the completed CEMP shall provide the details of all the environmental management requirements for all stages of the construction process. If the work is undertaken as individual work teams, the environmental work plans need to be prepared separately targeting each work team for respective work activities (e.g. clearing, excavation, concrete work, back filling).
- (vii) the Contractor's organisational structure showing the implementation, supervision and reporting and responsibilities of key personnel;
- (viii) the construction programme and work activities;
- (ix) Requirement of environmental licence and approvals
- (x) the Contractor's Plans for specific environmental measures, including:
  - (a) relocation of utilities if required (minimize/avoid disruption of services such as power, water supply etc.)
  - (b) Contractor's Facilities Management Plan for management of impacts due to establishment and operation (includes detailed designs, methodologies and installation locations of all construction related facilities such as access roads, workers' camps, storage areas, equipment maintenance areas etc., pollution control facilities such as drainage channels, settling tank/ponds and septic tanks, temporary noise barriers etc.)
  - (c) liaison with local authorities and residents
  - (d) air pollution (dust and gaseous emissions) control
  - (e) noise and vibration control
  - (f) waste management (solid, liquid, hazardous)
  - (g) wastewater collection, treatment and disposal
  - (h) prevention of contamination of natural water courses and groundwater
  - (i) water extraction, treatment and supply
  - (j) protection of wildlife and fish
  - (k) establishment, operation and reinstatement of spoil disposal areas
  - (l) protection and replanting of flora
  - (m) drainage and storm water management
  - (n) erosion and sedimentation control
  - (o) traffic management
  - (p) minimising disturbance in public areas (including from construction traffic)
  - (q) damage to and maintenance of existing roads, bridges, culverts etc.
  - (r) chemicals and hazardous substances/materials management, spillage prevention
  - (s) workers and public safety
  - (t) emergency response
  - (u) dealing with geological, paleontological and archaeological remains, graves etc.
  - (v) reinstatement of Site areas used for facilities, access and temporary construction roads;
- (xi) the approach and schedule for implementing the mitigation measures specified in the Project EMP;
- (xii) plan for self-monitoring and reporting to ensure compliance with the EMP/CEMP provisions.

## **Sample Table of Content**

<b>1.0</b>	<b>Introduction</b>
1.1	Package overview
1.2	Construction activities of particular contract package
1.3	Project duration and construction schedule
1.4	Definition of project boundaries (direct and indirect impact areas of the package)
1.5	Environmental values and sensitive receptors of the project area
<b>2.0</b>	<b>Risk assessment and environmental management measures</b>
2.1	Risk assessment over the construction activities
2.2	Contractor's plan to manage specific environmental risks (including site restoration plans)
2.3	Site plan indicating environmental management requirements
2.4	Requirements of Licence and permits to carry out project activities (should be correlated with the content given under section 1.2, 2.1, 2.2 and 3.1)
<b>3.0</b>	<b>Management of Environmental Works</b>
3.1	Environmental work plan and activity schedule (using MS project based on the construction plan)
3.2	Contractor's organizational structure to implement CEMP
3.3	Training and awareness of project staff
3.4	Procedures to prevent environmental issues
<b>4.0</b>	<b>Documentation</b>
4.1	Environmental Method statements for the key construction activities (indicating approach implementing specific mitigation measures included under section 2.2)
4.2	Key reference documents (available)
4.3	Documentation & Reporting (type of documents/reports, formats to be followed, responsibility, tentative schedule)
<b>5.0</b>	<b>Self monitoring , evaluation and reporting</b>
5.1	Environmental Monitoring
5.2	Environmental Inspections
5.3	Audits
<b>6.0</b>	<b>Management Review</b>
6.1	CEMP review/updates
6.2	Stakeholder and communication management
6.2.1	Internal communication
6.2.2	External Communication
6.2.3	Complaints management
6.2.4	Grievance Redress mechanism
<b>7.0</b>	<b>Annexes</b>

## Programme Management, Design and Supervision Consultant (PMDSC)

### Sample for Risk Assessment matrix

Construction activity	Issues to consider	Likelihood that the site or sensitive receptors will be affected?	Consequence of the site or sensitive receptors being affected?	Risk Score: (Consequence X Likelihood) High: 15-25 Medium: 6-10 Low : 1-5	Environmental management measures
		Score <sup>1</sup>	Score <sup>2</sup>	Score <sup>3</sup>	
Soil stripping	Damage to vegetation beyond vegetation limits	3	5	15 (High)	Limits of clearing marked with highly visible means; Monitor area for fauna prior to clearing operation; avoid spreading invasive species through proper decomposing/disposal techniques of debris; manage waste identifying proper disposal plans; burning of vegetative parts prohibited within wildlife protected areas
	Erosion of exposed areas and sediment carried into adjacent streams	3	3	9 (Medium)	Erect silt traps/fences around the perimeter of the working area; sedimentation ponds
	Loss of top soil	3	2	6 (Medium)	Stockpiles to get protective covering

#### <sup>1</sup> Likelihood Scale

Likelihood	Definition	Score
Certain	Will occur during the activity at a frequency greater than every week of the preventive measures are not taken	5
Likely	Likely to occur more than once or twice during the activity, but less than weekly, if preventive measures are not taken	3
Unlikely	May occur once or twice during the activity if preventive measures are not taken	2
Rare	Unlikely to occur during the activity	1

#### <sup>2</sup> Consequence Scale

Consequence	Definition	Score
Catastrophic	Unprecedented damage or impacts involving the environment or surrounding communities (i.e widespread effect on ecosystem, with deaths of fauna/flora)	5
Major	Major damage to the environment or to surrounding communities	3
Moderate	Limited adverse impacts on the environment or on surrounding communities (i.e. short term minor changes in the ecosystem)	2
Minor	No or minimal adverse environmental or social impacts (i.e little noticeable effect on ecosystem)	1

#### <sup>3</sup> Risk Score Table - High Risk (15-25); Medium Risk (6-10); Low Risk (1-5)

Likelihood	Consequence			
	Catastrophic	Major	Moderate	Minor
Certain	25	15	10	5
Likely	15	9	6	3
Unlikely	10	6	4	2
Minor	5	3	2	1

Source: ADB safeguard Unit



Program Management, Design and Supervision Consultant

## **Annex 3:**

### **CEA Approval for Updated EMP for MLBCRP**

ඔබේ යොමුව  
உமது இலக்கம்  
Your Ref.

ඔබේ යොමුව  
உமது இலக்கம்  
Our Ref.

පිටුව  
பக்கம்  
Page

CEA/CPO/KY/07/92

1-01-2017

# මධ්‍යම පරිසර අධිකාරිය

மத்திய சுற்றுடல் அதிகாரசபை

Central Environmental Authority

"පරිසර පීස", 104, ඩෙන්සිල් කොබ්කඩුව මාවත, පොල්ගොලා, නැගෙනහිර පළාත.  
"பரிசுர பிச", 104, டென்சில் கொப்பிடாடுவ மாவது, பால்கோலா, கிழக்கு மாகாணம்.  
"Pariseru Piyasa", 104, Denzil Kobbekaduwa Mawatha, Panipollala, Sri Lanka.  
Web : www.cea.lk



Attachment

Central Province Office,  
Dam Site, Polgolla.  
T.P : 081-2494884

Program Director (MWSIP),  
Ministry of Mahaweli Development & Environment,  
No 493 1/1, T.B. Jaya Mawatha,  
Colombo 10.

## Environmental Management Plan : Improvement of Minipe Anicut and Rehabilitating of the Minipe Left Bank Canal Project

This has reference to the letter No MWSIP/PMU/04-V1 dated 2016-08-01 regarding the above matter.

Hence here by inform that the Central Environmental Authority has studied Environmental Management Plan (EMP) submitted to this authority on 05<sup>th</sup> August 2016 by you and has decided to grant approval for the Environmental Management Plan (EMP).

Susantha Wedage,  
Director (Central Province),  
Central Environmental Authority,  
Polgolla.

Susantha Wedage  
Director (Central Province)  
Central Environmental Authority  
Central Provincial Office,  
Polgolla.

Chairman	Tel : 2872260, 2872248 Fax : 2872247	Director General	Tel : 2872239 Fax : 2872248	Gen. Office	Tel : 2872276, 2872447, 2872448 2872277-280	Complain Unit : 2888099
Deputy Director General	HRD, Admin & Finance Division Tel : 2865226 Fax : 2877515	Envr. Pollution Control Division	Tel : 2872452 Fax : 2872665	Envr. Mgt & Assess. Division	Tel : 2872288 Fax : 2872296	Envr. Edu. & Awareness Division Tel : 2872297 Fax : 2872689
Directors	2872687 (Admin), 2872290 (Finance) 2872231 (HRD), 2872288 (Planning) 2872681 (Admin), 2862984 (Finance)	2872432 (EPC) 2872666 (Lab) 2882235 (WMI)	2872246 (NEM), 2872645 (SEA) 2867163 (RAD) Fax : 2872228	2867064 (EEA) Fax : 2872289 Media Unit : 2872448	2872604 (Legal) (Western Province) Tel : 2862833 Fax : 2862293	

**Annex 4:**  
**Method of Implementing the Reforestation Requirements**  
**under MWSIP**

## Method of Implementing the Reforestation Requirements under the MWSIP

The below described method is proposed based on the discussion had with Environment Specialist of PMDSC and the Conservator of Forests (Natural Resources Management) by Environment Specialist of PMU together with PD-MLBCRP and SEO-MLBCRP on 29<sup>th</sup> March 2017 at the PMDSC Head office and Forest Department.

### 1. Reforestation Requirement:

Arise from the IEE/ EIA recommendations and stipulated by follow up CEA approvals as follows:

No.	Project	CEA Approval	Extent	Further Details
1	MLBCRP	CEA/CFO/KY/07/929/12	145 Ha	Native plants as in Table 4 of annex V of IEE on LB coral catchment areas, restoration of affected areas etc.
2	NWPCP	08/EIA/WATER/07/2012	350 Ha	Native plants as in Table 1-3 of annex VI-V of EIAR as reforestation/ enrichment, restoration of affected areas etc. including Kahala-Palilele.
	UECP	08/EIA/Water/04/2012	500 Ha	Native plants as in Table 5 of annex VI of EIAR as reforestation/ enrichment, restoration of affected areas etc. including 250 Ha in Minneriya-Giriale.

### 2. Identification of Land for Reforestation:

- a) Affected area restoration
  - Reforestation as a part of the restoration of temporary utilized plots of lands by Contractor;
  - Lands to be determined by the Contractor with PMDSC at the start of works
- b) Compensatory reforestation/ enrichment planting
  - PMU, PIU will identify in consultation with Forest Department, Department of Wildlife Conservation and other Line agencies like Irrigation Department or Mahaweli Authority of Sri Lanka who managed reservations,
    - o For MLBCRP : PMU & PIU will communicate with departments directly
    - o For UECP & NWPCP: Lands will be determined in the Wildlife Management Plan (WMP)
  - PMU, PIU will coordinate with Forest Department and Land owner agencies to agree on working protocol for reforestation planting by the Contractor.

### 3. Memorandum of Understanding (MOU) for Reforestation Task:

Contractor will sign a MOU with the Forest Department (FD) or appointed Agency by FD for planning, implementation and maintenance of Reforestation.

If necessary (on request of Forest Department) the PMU may be a party as a witness in the MOU.

### 4. Preparation of Plan:

- a. Forest Department will prepare Reforestation Plan,
- b. PMDSC with PMU, PIU will guide the Contractor to provide inputs to FD for preparing the RP incorporating IEE/ EIAR, EMP and/or WMP requirements,
- c. Plan will include all key steps like seedling sourcing, nursery maintenance, ground preparation, replanting and maintenance etc. with budget and payment milestones.

### 5. Implementation & Monitoring of Plan:

- a. Contractor shall implement through the FD as a part of same MOU mentioned above,



- b. Contractor shall maintain monitoring records and submit to PMDSC,
- c. PMU, PIU will facilitate working with all parties.

**6. Payments:**

- a. The MOU shall be accepted/ approved by PMDSC and PMU
- b. The reforestation plan with payment milestones and deliverables shall be accepted/ approved by PMDSC and PMU
- c. Contractor shall submit payment application supplemented with monitoring records/ reports
- d. PMDSC shall recommend with monitoring records and PMU to approve/ release.