

# Semi-Annual Environmental Monitoring Report

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Project number: 37378-014

Period: October - December 2018

Submission Date: January 2019

## SRI: Jaffna and Kilinochchi Water Supply Project- Additional Financing

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**JAFFNA KILINOCHCHI WATER SUPPLY AND SANITATION**  
**NATIONAL WATER SUPPLY & DRAINAGE BOARD**

**ANNUAL REPORT ON**  
**ENVIRONMENTAL MONITORING- 2018**

Project Management Coordination and Implementation Unit

Jaffna Kilinochchi Water Supply and Sanitation Project

National Water Supply & Drainage Board

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Tel: 021 – 222 0256

## 1. INTRODUCTION

Jaffna Kilinochchi Water Supply and Sanitation Project (JKWSSP) was launched in year 2009 with a total cost of US\$ 164.04 million (US\$ 90 million from ADB, US\$ 48 million from AFD France and the balance US\$ 26.04 million being the Government contribution). The objective of the project is to improve the health standard and the enhancement of the standards of living of the people in Jaffna peninsula and to support the resettlement and economic development and social welfare of the entire Northern Province. The project was designed to provide safe drinking water to 300,000 people in water scarce areas of Jaffna and Kilinochchi districts and to provide pipe borne sewerage facilities for around 80,000 people in Jaffna Municipal Council area. The initial design of the drinking water scheme was entirely dependent on abstracting water from Iranaimadu Tank but the progress of the project was hampered due to a dispute over water sharing between drinking water requirement and irrigation needs. As consensus could not be reached for sharing water for drinking process due to social and political reasons the Iranaimadu source has to be suspended after lengthy negotiations process which ran over a period of 2 years (2013/14) involving farmers, Provincial Irrigation Department, Northern Provincial Council and the Central Government.

It has been concluded that desalination option combined along with a limited ground water abstraction is the most technically suitable and economically viable option to serve the immediate water need. As a result of restructuring of project the AFD (the co-financing partner) had withdrawn its funding amounting to 35 million euros, dedicated for Iranaimadu based Water Treatment Plant (WTP) and Raw Water conveyance from Iranaimadu Tank to WTP and ADB decided not to fund for Sewerage Component of the project.

After in-depth technical studies and a lengthy evaluation process the consensus has finally been reached to construct a Desalination Plant with 24,000 m<sup>3</sup>/day capacity at Thalayadi village (Vadamaradchi East DS division) in Jaffna district. All technical, financial, social safeguard studies have been carried out. The donor agency ADB and the Northern Provincial Council have extended their cooperation and now all stakeholders consider the Desalination as the most viable and practical option under the current circumstances. The ADB is committing funds for the Desalination Plant, treated water transmission and the distribution network in Jaffna Municipal Council area and Jaffna Peninsula to cover around 300,000 people with pipe borne drinking water supply. Apart from already committed US\$ 90 million ADB is extending additional financing of US\$ 120 million for this purpose.

ADB has classified the project as environmental Category A (the highest category), because it involves construction and operation of a large industrial complex at a coastal green field site and is therefore expected to have significant adverse impacts. An EIA study was conducted between December 2015 and July 2017 by Lanka Hydraulic Institute Ltd. The study and report are intended to comply with ADB's Safeguard Policy Statement (SPS) 2009, and it is anticipated they may also fulfil the requirements of Sri Lankan EIA law.

EIA approval had been obtained from Central Environmental Authority on 2.06.2017 and ADB approval also obtained for the same.

## 1.1 Scope of the Project

The details of Contract packages in Original loan component and Additional Financing component are given below.

***The following contract packages are coming under Original loan – 90 Million US\$***

- AGM building & Quarters – 02 Packages
- Distribution network Package 01 – DN 1
- Distribution network package 02 – DN 2 ( part)
- Elevated water Tower 01 – ET 1
- Elevated Water Tower 02 – ET 2
- Elevated Water Tower 03 – ET 3
- Treated water Transmission Main – TWTM 1
- Treated Water Transmission Main – TWTM 2
- Electro Mechanical & SCADA
- Works under Maruthankerny Development
- Project Engineering Institutional Consultancy – PEIC

***The following contract packages are coming under additional financing – 120 million USD***

- SWRO plant
- Distribution package 02 ( Balance)
- JMC area Distribution network
- Consultancy for supervision of SWRO - PMSC
- Consultancy for Social and Environmental Monitoring – SWRO -EMC
- Elevated water Tower and Water Distribution Package 04



**Fig 1.1:** Project implementing area

## 1.2 Environmental category as per ADB Safeguard Policy Statement, 2009

Under ADB guidelines SWRO plant is Category A project, and other all of the sub packages category as B.

## 1.3 Environmental category of each subproject as per national laws and regulations

Under the National Environmental Act (NEA) No 47 of 1980, SWRO plant is category I and other all of the sub packages category as III.

## 1.4 Project Safeguard Team

Name	Designation/Office	Email Address	Contact Number	Roles
1.PMCIU	Project Director	pdjkwssp@gmail.com	0212220256	
	Deputy Project Director	malathycejkwssp@gmail.com		
	Chief Engineer	balendrajkwssp@gmail.com		
	Senior Engineer	vijayjkwssp@gmail.com		
	Chemist	s.thas13@gmail.com		
	Sociologist	mayabala_1985@yahoo.com		

## 1.4 Overall project and sub-project progress and status

Package No	Components / List of Works	Contract status (specify if under bidding or contract awarded )	Status of Implementation	If on – going Construction	
			(Preliminary Design / Detailed Design / On – going Construction / Co	% Physical Progress	Expected Completion Date
Water Treatment Plant					
PEIC/JKWSSP/SEA WATER REVERSE OSMOSIS PLANT/2015/01	Design, Build and Operate a Sea Water Reverse Osmosis Desalination Plant of 24 MLD Capacity at Thalaiyadi, Jaffna District (SWRO Desalination Plant)	Under bid evaluation			
Treated Water Transmission Main					
PEIC/JKWSSP/TWTM/ 2013/01	Supply and Laying of Treated Water Transmission Mains from Palai Water Treatment Plant and Construction of Two Treated Water Sumps at Nallur and Meesalai	Contract Awarded	On – going	80.03 %	31.01.2019
PEIC/JKWSSP/TWTM/ 2014/02	Supply and Laying of Treated Water Transmission Main and Construction of Three Treated Water Sumps at Kallundai, Pungudutivu and Poonakary	Contract Awarded	On – going	85.20 %	28.02.2019
Elevated Water Towers					
PEIC/JKWSSP/WATER TOWERS/2013/01	Construction of Water Towers at Puttur, Meesalai, Poonakari, Navatkuly, Kaddudai, Velanai and Mandaitivu	Contract Awarded	Substantially Completed		Final bill is in progress
PEIC/JKWSSP/WATER TOWERS/2013/02	Construction of Water Towers at Palai, Kodikamam, Nallur, Karainagar, Pungudutivu, Kayts, Vaddukkodai and Jaffna Municipal Council(Old Park) – Package 02	Contract Awarded	Substantially Completed		Final bill is in progress
PEIC/JKWSSP/ Water Towers/2017/01	Construction of Water Towers at Pommaveli, Karaveddy, Nainathivu, Analaithivu and Eluvaithivu	Under bid evaluation			

Distribution Networks Systems					
PEIC/JKWSSP/NETW ORK/2013/01	Supplying and Laying of Water Distribution Network in Kayts, Velanai &Mandaitivu	Contract Awarded	Substantially Completed		Final bill is in progress
PEIC/JKWSSP/Networ k/2014/02	Supplying and Laying of Water Distribution Networks in Palai, Kodikamam, Meesalai, Poonakary, Puttur, Nawatkuli, Karainagar, Pungudutivu, Vaddukkodai, Kattudai, Nallur Zones, JMC Transmission Pipeline & Construction of Office/Stores, Quarters at Velanai, Kaddudai, Navatkuli, Pokkanai, Poonery and Karaveddy	Contract Awarded	On – going	Mobiliz ation in Progress	02.12.2020
PEIC/JKWSSP/Distribu tion Networks /2017/01	Supplying and Laying of Water Distribution Networks in Jaffna City Area.	Under bid evaluation			
Buildings					
	Construction of Quarters at Meesalai and Consultancy Service of Architectural Design & Supervision and Construction of New Building for AGM (N) ,RM (J)		Completed		Hand over to O&M section, NWSDB
Jaffna - Equipment					
PEIC/JKWSSP/M&E/2 017/01	Supplying and Installation of Mechanical, Electrical, Instrumentation, Control Components and SCADA System	Under document evaluation			

## 2. COMPLIANCE STATUS WITH NATIONAL /STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

Package No.	Subproject Name	Statutory Environmental Requirements <sup>1</sup>	Status of Compliance <sup>2</sup>	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish <sup>3</sup>
PEIC/JKWSSP/ Sea Water Reverse Osmosis Plant/2015/01	Design, Build and Operate a Sea Water Reverse Osmosis Desalination Plant of 24 MLD Capacity at Thalaiyadi, Jaffna District ( SWRO Desalination Plant)	CEA conditions will be implemented during annexed in the Annexure 1).		The validity is obtained up to 1.6.2021		
PEIC/JKWSSP/ Distribution Network/2017/ 01	Supplying and Laying of Distribution Networks in Jaffna City Area		Under bid evaluation stage			

## 3. Compliance status with environmental loan covenants

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required
Schedule V – Paragraph 2	The Borrower through the MCPWS shall ensure that the preparation, design, construction, implementation, and operation of the Project and all Project facilities comply with (a) all applicable laws and regulations of the Government relating to environment, health and safety; (b) the Environmental Safeguards as set out in the SPS; and (c) all measures and requirements set forth in the EIA, the EMP, and any corrective or preventative actions set forth in a Safeguards Monitoring Report.	Under bid evaluation	

<sup>1</sup> Specify (environmental clearance? Permit/consent to establish? Forest clearance? Etc.)

<sup>2</sup> Specify if obtained, submitted and awaiting approval, application not yet submitted

<sup>3</sup> Example: Environmental Clearance requires ambient air quality monitoring, Forest Clearance/Tree-cutting Permit requires 2 trees for every tree, etc.



#### 4. Compliance status with the environmental management plan (refer to EMP tables in approved IEE/S)

Package Number	Final IEE based on Detailed Design				Site-specific EMP (or Construction EMP) approved by Project Director? (Yes/No)	Remarks
	Not yet due (detailed design not yet completed)	Submitted to ADB (Provide Date of Submission)	Disclosed on project website (Provide Link)	Final IEE provided to Contractor/s (Yes/No)		
PEIC/JKWS SP/ SWRO PLANT /2015/01	Under bid evaluation					
PEIC/JKWS SP/Distribution Network/2017/01	Under bid evaluation					

4.1 For each package, provide name/s and contact details of contractor/s' nodal person/s for environmental safeguards.

##### Package-wise Contractor/s' Nodal Persons for Environmental Safeguards

Package Name	Contractor	Nodal Person	Email Address	Contact Number
Design, Build and Operate a Sea Water Reverse Osmosis Desalination Plant of 24 MLD Capacity at Thalaiyadi, Jaffna District ( SWRO Desalination Plant)	Under bid evaluation			
Supplying and Laying of Distribution Networks in Jaffna City Area	Under bid evaluation			

4.2 With reference to approved EMP/site-specific EMP/construction EMP, complete the table below

**Summary of Environmental Monitoring Activities (for the Reporting Period)<sup>4</sup>**

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Design, Build and Operate a Sea Water Reverse Osmosis Desalination Plant of 24 MLD Capacity at Thalaiyadi, Jaffna District ( SWRO Desalination Plant)			Under bid evaluation			
Supplying and Laying of Distribution Networks in Jaffna City Area			Under bid evaluation			
Pre-Construction Phase						
Construction Phase						
Operational Phase						

<sup>4</sup> Attach Laboratory Results and Sampling Map/Locations

### Overall Compliance with CEMP/ EMP

No.	Sub-Project Name	EMP/ CEMP Part of Contract Documents (Y/N)	CEMP/ EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed and Additional Measures Required
01	Design, Build and Operate a Sea Water Reverse Osmosis Desalination Plant of 24 MLD Capacity at Thalaiyadi, Jaffna District ( SWRO Desalination Plant)	Y	Under bid evaluation		
02	Supplying and Laying of Distribution Networks in Jaffna City Area	Y	Under bid evaluation		

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Central Environmental Authority

NO/JA/07/ER/822/17

02.06.2017

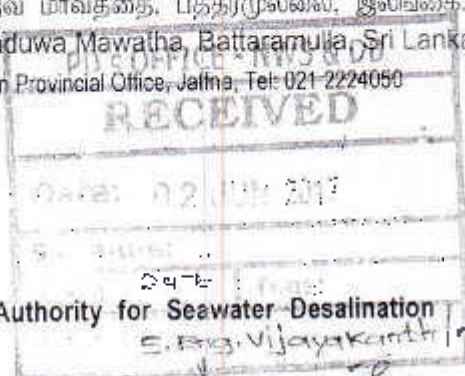
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மத்திய சுற்றுடல் அதிகாரசபை

Central Environmental Authority



"පරිසර පියා" 104, ඩෙන්සිල් කොබ්බෑකඩුව මාවත, බත්තරමුල්ල, ශ්‍රී ලංකාව.  
"பரிசரா பியா" 104, டென்சில் கொப்பேகடுவ மாவத்தை, பத்தரமுல்லை, இலங்கை.  
"Farisara Piyasa" 104, Denzil Kobbekaduwa Mawatha, Battaramulla, Sri Lanka.  
Web : www.cea.lk Northern Provincial Office, Jaffna, Tel: 021-2224050



Project Director,  
Jaffna - Kilinochchi Water Supply & Sanitation Project,  
Jaffna.

### Environmental Recommendation from Central Environmental Authority for Seawater Desalination Plant at Thalayady, Maruthankeny

This has reference to the Questionnaire on Environmental Impact Identification and relevant documents dated 23.12.2014 and Environmental Study Recon prepared by Lanka Hydraulic Institute Ltd. submitted to this Authority on behalf of Jaffna - Kilinochchi Water Supply & Sanitation Project on 06<sup>th</sup> March 2017 for the above subject.

According to your letter No: JKWSS/PMO/CE/WD PLANT, dated 15.05.2017, the previous Environmental Recommendation issued on 29.03.2017 by this Authority is hereby canceled. Instead, this Environmental Recommendation in respect of the proposed Seawater Desalination Plant at Thalayady, Maruthankeny is granted subject to the following terms and conditions, which should be strictly adhered to by the Project Director in order to abate environmental pollution likely to arise from the operation of Sea Water Desalination Plant.

This Environmental recommendation is valid only for four years from the date of issue of this letter. The construction work should be completed within this period. Any extension will be considered on re-application one month prior to expiry of the validity period.

#### Conditions:

##### 01. Project Proponent and Location

- 1.1 The Project Director Jaffna - Kilinochchi Water Supply & Sanitation Project for Desalination Plant at Thalayady Maruthankeny (hereafter referred to as the Project Proponent) is legally bound to ensure the terms and conditions stipulated in this Environmental Recommendation are adhered to and shall not have full control over a third party that may be involve in construction and operating.
- 1.2 The proposed Seawater Desalination plant should be located within Lot 1 and 2 as shown in the Preliminary Plan No: ක 2779 dated 2017.01.30 of Senior Superintendent of Surveys.

##### 02. Noise Control

- 2.1 Noise levels at the boundary of the site during the construction stage should be maintained at or below 75dB (A) during day time (between 0600 hrs to 2100 hrs) and at or below 50 dB (A) during night time (between 21.00 hrs to 06.00 hrs).
- 2.2 Noise levels at the boundary of the site during the operation should be maintained at or below 55dB (A) during day time (between 06.00 hrs to 18.00 hrs) and at or below 45 dB (A) during night time (between 18.00 hrs to 06.00hrs) as per Gazette Extra Ordinary No: 924/12 dated 23<sup>rd</sup> May 1996.

Chairman	Tel: 2872361, 2872348 Fax: 2872347	Director General	Tel: 2872359 Fax: 2872348	Gen. Office	Tel: 2872278, 2873447, 2873448 Fax: 2872277-280	Complain Unit	0713603333, 2888999
Deputy Director General	HRD, Admin & Finance Division Tel: 2865296 Fax: 2877515	Envl. Pollution Control Division	Tel: 2873453 Fax: 2872603	Envl. Mgt & Assess. Division	Tel: 2872388 Fax: 2872296	Envl. Educ. & Awareness Division	Tel: 2872297 Fax: 2872609
Directors	2872997 (Admin), 2877706 (Finance)	2873452 (EPC)	2873451 (RMV), 2876643 (EIA)	2867352 (R&D)	2867266 (EFA)	2877624 (Legal)	2877624 (Legal)
Tel.	2872590 (HRD), 2877288 (Planning)	2877606 (Lab)	2877606 (Lab)	2877606 (Lab)	2877606 (Lab)	2877606 (Lab)	2877606 (Lab)
Fax	2877606 (Admin), 2863984 (Finance)	2881314 (WMI)	2881314 (WMI)	2881314 (WMI)	2881314 (WMI)	2881314 (WMI)	2881314 (WMI)



### 03. Air Pollution Control

- 3.1 Dust generated due to vehicle movement, transportation of materials and other construction activities should be minimized by adopting adequate mitigatory measures during construction period.

### 4.0. Solid waste management

- 4.1 Solid waste arising from any process should be disposed of at regular intervals in consultation with the relevant Local Authority in such way that there should not be environmental pollution.
- 4.2 Solid waste shall not be burnt within the premises or outside in an open environment.
- 4.3 Discarded RO filters should be stored in safe place and returned to supplier.
- 4.4 According to the Gazette Extraordinary No: 1466/5 dated 10.10.2006, Polythene or polythene products in thickness 20 micron or less than 20 micron (20µm) shall not be used for industrial or domestic activities.

### 5.0. Waste Water Management

- 5.1 The brine outfall arrangement and diffuser system shall be designed, constructed and operated to allow the salinity to be dissipated rapidly and to reach ambient seawater levels in less than 100 m from the point of discharge.
- 5.2 Project Proponent should obtain dumping permit, thirty days prior to the commencement of operation, to dump treated waste to the sea as per the regulation (Issuance of permits for dumping at sea) of Marine Environmental Protection Authority.
- 5.3 Outlet tube/ sampling manhole of the wastewater treatment plant shall always be safe & accessible enabling to collect samples of treated wastewater for analysis at all times to inspecting officers.
- 5.4 Proper Environmental Control shall be implemented to prevent un-neutralized chemicals getting into land surface water or marine environment.
- 5.5 Any domestic wastewater arising from cleaning and washing shall only be released into a properly designed septic tank and such wastewater shall not be released into storm water drains at any time.

### 6.0 Sea Water Intake system

- 6.1 Offshore intake structure, grilles and arrangements shall be to minimize and adverse impact to the local fishing community by minimizing entrainment by location of the grilles away from sensitive marine habitats and by generously sizing the intake grilles so that the inlet velocity is kept low and it allows small fish to swim back without getting sucked into the intake conduit or pipe.
- 6.2 Proper Environmental Control shall be implemented during the deep excavation time for installing sea water conduits and providing foundation for sea water intake pump, buildings, tanks and equipment to prevent excessive drainage of any aquifers.
- 6.3 Sea water intake pipeline shall be suitably anchored along the sea bottom profile to minimize erosion.

### 7.0 Sea Water out fall system

- 7.1 Diffuser arrangement with smooth contours shall be made to mitigate adverse impact to local fishing community.



- 7.2. Sea water outfall pipe line should be suitably anchored along the sea bottom profile to minimize erosion.

#### 8.0 Storm water Management

- 8.1 Removal of trees and shrubs in the proposed site shall be minimized. The construction activity should be carried out in such a way it does not cause any physical damages to the environment like sand deposits, vegetation cover, etc.
- 8.2 A Proper storm water management plan should be prepared in consultation with Sri Lanka Land Reclamation and Development Corporation and implemented.
- 8.3 Natural drainage network within the site should not be obstructed by any activity of the project.
- 8.4 Suitable soil conservation measures should be adopted during and after construction activities.
- 8.5 Silt traps should be constructed and properly maintained in order to prevent silt being washed off into Adjacent lands, canal and properties.

#### 9.0 Environmental Monitoring

- 9.1. Environmental Management Plan submitted along with the Environmental Study Report dated on Dec 2016 should be implemented.
- 9.2. A monitoring committee consisting of representatives of Central Environmental Authority (CEA), Coast Conservation and Coastal Resource Management Department, Marine Environmental Protection Authority, Urban Development Authority, Divisional Secretariat / Vadamaradchi East, Pradeshiya Sabha / Point Pedro and any other members deemed necessary will be appointed by the CEA to monitor implementation of mitigatory measures by the Project Proponent.
- 9.3. The Project Proponent shall forward the progress report of Environmental Management Plan (EMP) incorporating the mitigatory measures suggested in the Environmental Study Report dated on Dec, 2016 for every six months.
- 9.4. Specially trained qualified officers who would be responsible for implementation of the EMP shall be assigned.
- 9.5. All costs incurred by the monitoring committee appointed by the CEA to oversee implementation of the EMP shall be borne by the Project Proponent.


#### 10.0 General Conditions

- 10.1 This Environmental Recommendation only covers the Seawater Desalination Plant at Thalayady, Maruthankeny intake and outfall structures and not covers the water distribution system.
- 10.2 Prior approval shall be obtained from Department of Coast Conservation and Coastal Resource Management for the construction of intake and out fall structure and surge chamber within the coastal zone.
- 10.3 Construction and operation of Seawater Desalination Plant shall not affect the local fishing community.





- 10.4 The health and safety of workers shall be ensured as stipulated in the Factories Ordinance and its amendments.
- 10.5 In accordance with section 23 (A) of the National Environmental Act No. 47 of 1980 and its amendments, one month prior to commencement of operation of the Seawater Desalination Plant the Project Proponent shall submit an Environmental Protection Licence application to the CEA with other necessary approvals.
- 10.6 Any changes or expansion of the project activities should not be carried out without prior approval of the CEA.
- 10.7 Installation or operation of any machinery other than those stated in the application dated 23.12.2014 should not be carried out without prior approval of CEA.
- 10.8 Any additional conditions stipulated by the CEA as and when required for controlling any kind of pollution arising from the operation of the Seawater Desalination Plant shall be strictly adhered to.
- 10.9 The Environmental Recommendation is issued to carry on only the permitted activities therein, it shall not, and is not intended to confer the recipient therefore any right to assert ownership to the land where the permitted activities are carried on.

  
M.A.C. Najeeb  
Director / Northern Province  
Central Environmental Authority  
Northern Provincial Office  
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Copies:

1. Divisional Secretary, Divisional Secretariat, Vadamaradchi East, Maruthankeny
2. Secretary, Pradeshiya Sabha, Point Pedro
3. Director, Environmental Pollution Control, CEA.