

TERMS OF REFERENCE

3.1 BACKGROUND

Cochin Port Authority (CoPA) on behalf of Union Territory of Lakshadweep (UTLA) proposes to obtain 'Environmental, CRZ & IIMP Clearances' for the proposed marine and landside facilities in Lakshadweep. Accordingly, CoPA proposes to avail the services of an Accredited Consultant for assisting the Port in obtaining the said clearances including preparation of an Environmental Impact Assessment (EIA) Report covering the required Rapid EIA studies, Disaster Management Report (DMP) & Risk Assessment (RA), Environmental Management Plan (EMP), CRZ mapping, model studies etc., as per the latest guidelines/circulars/notifications of Ministry of Environment and Forests (MoEF&CC), Government of India. The Scope of Work/Assignment and duties of the Consultant shall be as detailed under the section "Terms of Reference" below.

3.2 TERMS OF REFERENCE

The detailed Terms of Reference for "Providing Consultancy Services for obtaining Environmental, CRZ & IIMP Clearances for the proposed jetties / landside facilities at Androth, Kadmath, Kalpeni, Kiltan and Chetlat islands in Lakshadweep" are given below.

3.2.1 PREPARATION OF FORM-1

Consultant shall prepare and furnish duly filled Form-1 for seeking Environmental, CRZ & IIMP Clearances from the LCZMA/MoEF&CC, Govt. of India (GoI) in Annexure-IV of the MoEF&CC's notification No.S.O.19.

3.2.2 PREPARATION OF EIA REPORT

3.2.2.1 Objectives of Study

Union Territory of Lakshadweep Administration (UTLA) has entrusted Cochin Port Authority (CoPA) with various Port led development projects under Sagarmala scheme in Lakshadweep Islands as deposit work. A Memorandum of Understanding (MoU) has been entered between CoPA & UTLA for this purpose. In this regard, CoPA has submitted DPRs of various Port led Infrastructures including berths and ancillary items along with landside facilities of five islands of Lakshadweep – Androth, Kadmath, Kalpeni, Kiltan and Chetlat to UTLA.

Preparation of EIA Study Report including marine and terrestrial component by incorporating baseline data, identification, prediction and evaluation of impacts due to construction of Jetties and landside facilities for UTLA and delineation of EMP to mitigate the adverse impacts.

3.2.2.2 Scope of Work/Assignment

Preparation of EIA Report for the construction of Jetties and landside facilities for UTLA shall be as per latest guidelines/ circulars/ notifications of MoEF&CC, GoI. Generally, the EIA Report shall be prepared as per the EIA guidance manual for Ports and Harbours published by the MoEF&CC.

The generic structure of Environmental Impact Assessment Document in terms of the EIA notification dated 14th September, 2006 with its amendments shall be as under.

- (i) Introduction
- (ii) Project Description
- (iii) Analysis of Alternatives (Technology and Site)

- (iv) Description of the Environment
- (v) Anticipated Environmental Impact & Mitigation Measures
- (vi) Environmental Monitoring Program
- (vii) Additional Studies
- (viii) Project Benefits
- (ix) Environmental Management Plan
- (x) Summary & Conclusion
- (xi) Disclosure of Consultants engaged

Chapter-1 Introduction

This chapter shall contain the general information on the sector, major sources of environmental impact in respect of port/jetty/landside projects and details of the environmental clearance process and shall cover the following:

- Purpose of the project, project proponent, brief description of the project name, nature, size, location of the project, its importance to the country and the region
- Land description - plot/survey nos./village, tehsil, district, state & extent of the land
- Profile of the project proponent, name and contact address with e-mail, implementing organization, organizational chart, project consultants etc.
- Whether the project attracts the provisions of General Conditions of EIA Notification 2006 and its amendments. If so applicability should be discussed
- Details on the project meeting the central/state/local environmental regulations and standards applicable for the project
- Any litigation pending against the proposed project and/ or any direction/ order passed by any court of law against the project, if so, details thereof

Chapter-2 Project Description

This chapter shall contain the description of the project, such as the type of project, need for the project, project location, project layout, utilities and services, and the project implementation schedule, estimated cost of development etc. and it shall cover the following:

- General
 - Overall suitability of the site and the proposed activity in light of the existing environmental acts and serious deviations, if any.
 - Significance of the project both at local and national level including background information and overall scenario of the proposed activity in the Indian context
 - Estimated cost of development of the project, of environmental protection works both during construction and operational phase of the project
 - Estimated water budget for the project – during the construction and operational stages
 - Whether project implementation is proposed to be undertaken by the central or state government or through Public Private Participation or private entrepreneurs
- Description of the Project:

Description of the project shall be brief and shall include:

 - Type of the project
 - Project coverage, master plan, phasing and scope
 - Planned capacity of the proposed jetty development
 - Details of dredging, reclamation as well as method(s)/location of disposal of dredged spoil

- Methods proposed for recycling of water and rainwater harvesting methods
- Details of reception facilities planned for ballast water, bilge water and sewage, if any.
- Details of fire-fighting measures planned
- Details of geology including geological map of the proposed jetty project
- Socio cultural and economic aspects
- Villages, settlements, need for rehabilitation and resettlement (R&R) of communities/villages along with present status of such activities
- Land acquisition requirement and status
- Historical data on climatic conditions such as: rainfall, wind pattern, history of cyclones, storm surges, visibility, earthquakes, etc.
- Bathymetric Data
- Essential maps
- Relevance of the project in the light of the existing development plans of the region
- Layout of Development
- Natural Resources
- Description of Activities and Ancillary Operations
- Housing facilities
- Use of Public Infrastructure
- Project Services and Utilities
- Manpower Requirement
- Estimated cost of development of the project, environmental cost, funding agencies i.e., whether governmental or on the basis of BOT, etc
- Technologies involved for design, construction, equipment and operation
- Project Implementation Schedule

Chapter-3 Analysis of Alternatives (Technology & Sites)

This chapter shall contain details of various alternatives both in respect of location of site and technologies to be deployed, in case the initial scoping exercise considers such a need and it shall cover the following:

- Description of various alternatives like locations or layouts or technologies studied
- Description of each alternative
- Selection of alternative

Chapter-4 Description of the Environment

This chapter designs the heart of the manual, since it is in this chapter shall describe the comprehensive data on the existing and additional data collected on the baseline environmental data in the study area as well as in the surrounding area that is likely to be affected by the proposed activity.

This chapter shall cover the following:

- Details of Study Area
- Land Environment
 - Land
 - Topography
 - Geology
 - Soil

- Water Environment
 - Ground Water
 - Surface Water
- Marine Environment
 - Coastal Hydrology/Geomorphology

Coastal hydrology requires collection of oceanographic data during the study period, covering the following parameters:

 - Tides
 - Waves (wind waves and swells)
 - Storm surges
 - Currents
 - Salinity
 - Sea water temperature
 - Suspended load, and
 - Seabed bathymetry
 - Bed Sediment Contamination
 - Sea/Harbour Water Quality
- Biological Environment
 - Marine/Coastal Ecology
 - Flora and Fauna in the Neighbourhood
- Air Environment
 - Meteorological Data

Meteorological data covering the following:

 - Wind speed and direction
 - Rainfall
 - Relative humidity
 - Temperature
 - Barometric pressures
 - History of cyclones
 - Ambient Air Quality
- Noise
- Socio-Economic and Occupational Health Environment
- Existing Solid Waste Disposal Facilities
- Public Utilities
- New Policy on Expansion of Existing Ports and Initiation of New Projects

Chapter-5 Anticipated Environmental Impact and Mitigation Measures

This Chapter shall describe the likely impact of the project on each of the environmental parameters, methods adopted for assessing the impact such as model studies, empirical methods, reference to existing similar situations, reference to previous studies, details of mitigation methods proposed to reduce adverse effects of the project, best environmental practices and conservation of natural resources.

- Land Environment
 - Jetty / Breakwater Location
 - Anticipated Impact
 - Mitigation Measures
 - Landside Location
 - Anticipated Impact
 - Mitigation Measures

- Topography, Geology and Soil
 - Anticipated Impacts
 - Mitigation Measures
- Land Reclamation
 - Anticipated Impacts
 - Mitigation Measures
- During Construction
 - Anticipated Impacts
 - Mitigation Measures
- During Operations
 - Anticipated Impacts
 - Mitigation Measures
- Water Environment
 - Jetty / Breakwater Location
 - Anticipated Impacts
 - Mitigation Measures
 - Ground Water
 - Anticipated Impacts
 - Mitigation Measures
 - Surface Water
 - Anticipated Impacts
 - Mitigation Measures
 - During Construction
 - Anticipated Impacts
 - Mitigation Measures
 - During Operations
 - Anticipated Impacts
 - Mitigation Measures
 - Water Quality Due to Operations
 - Anticipated Impacts
 - Mitigation Measures
- Marine Environment (Coastal Hydrology/Bottom Contamination, Sea/Harbour Water Quality)
 - Jetty / Breakwater Location
 - Anticipated Impacts
 - Mitigation Measures
 - Landside Location
 - Anticipated Impact
 - Mitigation Measures
 - Coastal Hydrology
 - Anticipated Impacts
 - Mitigation Measures
 - Bed Sediment Contamination
 - Anticipated Impacts
 - Mitigation Measures
 - Sea/Harbour Water Quality
 - Anticipated Impacts
 - Mitigation Measures
 - During Construction

- Anticipated Impacts
 - Mitigation Measures
- During Operations
 - Anticipated Impacts
 - Mitigation Measures
- Biological Environment (Coastal and Marine Ecology)
 - Jetty / Breakwater Location
 - Anticipated Impacts
 - Mitigation Measures
 - Landside Location
 - Anticipated Impact
 - Mitigation Measures
 - During Construction
 - Anticipated Impacts
 - Mitigation Measures
 - During Operations
 - Anticipated Impacts
 - Mitigation Measures
 - Due to Operations
 - Anticipated Impacts
 - Mitigation Measures
- Air Environment
 - During Construction
 - Anticipated Impacts
 - Mitigation Measures
 - During Operations
 - Anticipated Impacts
 - Mitigation Measures
- Noise Pollution
 - During Construction
 - Anticipated Impacts
 - Mitigation Measures
 - During Operations
 - Anticipated Impacts
 - Mitigation Measures
- Socio-Economic and Occupational Health Environment
 - During Construction
 - Anticipated Impacts
 - Mitigation Measures
 - During Operations
 - Anticipated Impacts
 - Mitigation Measures
- Solid Waste Management
 - Jetty / Breakwater Location
 - Anticipated Impacts
 - Mitigation Measures

- Landside Location
 - Anticipated Impact
 - Mitigation Measures
- During Operations
 - Anticipated Impacts
 - Mitigation Measures

Chapter-6 Environmental Monitoring Program

This Chapter shall include details of environmental monitoring programme. It should include the technical aspects of monitoring the effectiveness of mitigation measures (including measurement methodologies, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules)

- Summary matrix of environmental monitoring, during construction and operation stages
- Requirement of monitoring facilities
- Frequency, location, parameters of monitoring
- Compilation and analysis of data, comparison with base line data and compliance to accepted norms and reporting system
- Plantation monitoring program
- On-site mock drills requirements
- It shall also cover different statutory returns/compliance reports to be submitted

Chapter-7 Additional Studies

This chapter shall contain the details of the additional studies, if any, necessary to cater to more specific issues applicable to the particular project. These studies may be suggested by the regulatory authority or any other agency for obtaining the Environmental clearance.

This Chapter shall cover the following:

- Studies identified by the Regulating Authority/or any other agency for obtaining Environmental clearance
- Studies identified by the public and other stakeholders
- RA and DMP and it shall contain:
 - Risk Analysis
 - Risk Evaluation
 - Personal Protection Equipment
 - Disaster Management Plan (DMP)
- Oil-spill Contingency Plan (if applicable)
Existing Oil Spill Contingency Plan shall be reviewed and upgraded, if required.
 - Emergency Response Procedure
- Natural resource conservation and optimization
- R&R action plans (if applicable)
- Specific studies requirement depending on the site and activity proposed shall be discussed.

Chapter-8 Project Benefits

This chapter shall include benefits accruing to the locality, neighbourhood, region and nation as a whole. It should bring out details of benefits by way of:

- Improvements in the physical infrastructure by way addition of project infrastructure, ancillary industries that may come up on account of the project
- Improvements in the social infrastructure like roads, townships, housing, water supply, electrical power, drainage, educational institutions, hospitals, effluent

treatment plants improved waste disposal systems, improved environmental conditions, etc.

- Employment potential—skilled; semi-skilled and unskilled labour both during construction and operational phases of the project with specific attention to employment potential of local population as well as necessity for imparting any specialized skills to them to be eligible for such employment in the project on a long term basis i.e., during operational and maintenance stages of the project and
- Other tangible benefits like improved standards of living, health, education, etc.
- Revenue by way of royalties

Chapter- 9 Environmental Management Plan (EMP)

This chapter shall comprehensively present the EMP, which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational phases.

This chapter shall cover the following:

- Summary of potential impact & recommended mitigation measures.
- Allocation of resources and responsibilities for plan implementation
- Administrative and technical setup for management of environment
- Institutional arrangements proposed with other organizations/Govt. authorities for effective implementation of environmental measures proposed in the EIA
- Safe guards/mechanism to continue the assumptions/field conditions made in the EIA
- Environmental specifications for contractors should cover the required safeguards during the design and construction stage
- Approach towards voluntary compliance (ISO 14001 & ISO 18001) should be explained

Chapter- 10 Summary & Conclusion (Summary EIA)

This chapter shall make the summary of the full EIA report condensed to ten A-4 size pages at the maximum. It shall provide the overall justification for implementation of the project and shall explain how the adverse effects are proposed to be mitigated.

It should necessarily cover in brief the following chapters of the full EIA report.

- Introduction
- Project description
- Description of the environment
- Anticipated environmental impact & mitigation measures
- Additional studies
- Project benefits
- Important Aspects of the Environmental Management Plan
- Important Aspects of the Environmental Monitoring Programme
- Disclosure of consultants engaged

Chapter- 11 Disclosure of Consultants Engaged

This chapter shall include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

3.2.3 Preparation of CRZ Map

Consultant has to prepare CRZ map through the approved agency of MoEF&CC and Consultant shall provide all technical assistance for the preparation of CRZ map.

3.2.4 Preparation of Project Layout on the CRZ map.

Consultant has to superimpose the project layout on the above map through the approved agency. The Consultant shall provide all technical assistance for the same and also shall review the project layout.

3.2.5 Obtaining CRZ Clearance and Environmental Clearances

Consultant shall obtain CRZ Recommendations from Lakshadweep State Coastal Zone Management Authority (LCZMA) and CRZ & Environmental Clearances from the State Environment Impact Assessment Authority (SEIAA) / MoEF&CC including presentation of the report at Public Hearing (if required), before Technical Committee of State Pollution Control Board (SPCB) and SEIAA/MoEF&CC/other statutory body(ies).

3.3 STUDIES AND INVESTIGATIONS

All studies, investigations, reports etc. to be prepared for obtaining all the clearances envisaged above shall be in the scope of the Consultant. No separate payment will be made for any studies, investigations, reports etc. required for obtaining the clearances.

3.4 DELIVERABLES

The Assignment has to be carried out in such a way so as to get clearances for the Eastern and Western side facilities separately for each island. The deliverables for Eastern and Western side facilities separately for each island are as follows:

- (i) Inception Report (One soft copy in pendrive and three hard copies) and its presentation.
- (ii) Duly filled Form-1 and its attachments (One soft copy in pendrive and hard copies as required for submission to SPCB/LCZMA/MOEF&CC along with draft Terms of Reference (ToR).
- (iii) Draft EIA Report including RA, DMP, EMP etc. (One soft copy in pendrive and five hard copies) and its presentation.
- (iv) Twenty copies of the final EIA Report including RA, DMP, EMP etc. and Executive Summary in English and local language (Malayalam) along with two soft copies on CD (both in PDF and word formats).
- (v) Technical and all required assistance for presentation of the Report at Public Hearing (if required), before Technical Committee of State Pollution Control Board (SPCB) /LCZMA/SEIAA/ MoEF&CC.

3.5 It is deemed that, the Assignment shall include all such works which are not specifically listed in TOR, but required to carry out to secure statutory clearances from concerned authorities and final CRZ, IIMP and Environmental Clearances for the construction of jetties / landside facilities at Androth, Kadmath, Kalpeni, Kiltan and Chetlat islands in Lakshadweep.