

Project Director,
State Project Implementation Unit (SPIU)
National Cyclone Risk Mitigation Project-II
No. 627, 6th Floor, 1st Gate, M.S. Building, Bengaluru, 560001
Tel : +91-80-22032582
E-mail- pdncrmpkar@gmail.com

Terms of Reference (TOR)
for Conducting Environment Impact Assessment (EIA), Social Impact Assessment (SIA) and
Preparation of appropriate Environment Management Plans and Resettlement Action Plans
for Saline Embankment, Roads and Bridges in Coastal Karnataka under NCRMP II

1. Project Background

The National Cyclone Risk Mitigation Project (NCRMP) is a hydro-meteorological risk mitigation project drawn up by Ministry of Home Affairs (MHA), Government of India (GOI) to be implemented in 13 Cyclone prone coastal States/UTs with World Bank assistance. The overall objective of the project is to minimize the risk and vulnerabilities to cyclones through strengthening structural and non-structural cyclone mitigation efforts and to build capabilities and capacities of people for cyclone risk mitigation in harmony with the conservation of coastal ecosystems in coastal cyclone hazard prone States and Union Territories. NCRMP is a centrally sponsored scheme. It is funded by the World Bank as an adjustable program loan with an IDA credit.

Considering the vulnerability to cyclones, Karnataka has been chosen as one of the states under the National Cyclone Risk Mitigation Project, Phase II. The main objective of the project is to minimize risk and vulnerabilities to cyclones through structural and non-structural mitigation measures. Structural mitigation measures taken up by Karnataka through this project are construction of Multipurpose Cyclone Shelters (MPCS), evacuation roads, bridges/culverts and Saline Embankment. The project in Karnataka is implemented in the three coastal districts viz, Udupi, Dakshina Kannada, and Uttara Kannada by Department of Revenue (Disaster Management), Government of Karnataka through Deputy Commissioners of the above mentioned districts and concerned line departments.

The SPIU intends to apply a part of proceeds for engaging consultancy services to conduct Environment Impact Assessment, Social Impact Assessment and prepare appropriate Environment Management Plans (EMPs) and Resettlement Action Plans for roads & bridges (located across the three coastal districts in the state) and a saline embankment at Manikatta Village, Kumta Taluk, Uttara Kannada district.

To understand, assess and mitigate issues related to environment management, land requirement, displacement and resettlement related to the proposed investments, the National Disaster Management Authority (NDMA) had conducted a study in the participating states. An Environment and Social Management Framework (ESMF) has been developed for avoiding, minimizing, mitigating and managing the identified environmental and social issues, which are likely to arise due to the implementation of sub-project level activities. The ESMF has been prepared for supporting the integration of environmental and social aspects within the decision making and implementation process of various sub-projects. The document (2 volumes) is available on the NDMA and the Govt. of Karnataka website for reference and use for the purpose of this assignment.

2. Objectives of the Assignment

The overall objective of carrying out Environment Impact Assessment (EIA) and Social Impact Assessment (SIA) study is to help the SPIU in identifying environment and social impacts; prepare commensurate management plans to mitigate the identified issues and; ensure that the proposed works are designed and constructed in line with the regulations made by Govt. of India and Govt. of Karnataka. The consulting services (öthe Servicesö) shall broadly include:

- a) Assessment of environment and social issues/impacts in line with the over-all guidance given under the project's approved Environmental and Social Management Framework (ESMF) and in line with the EIA Notification 2006 (and its amendments thereof), as relevant. This includes preparation of baseline/existing

conditions; analysis of data/ information; consultations with stakeholders and; assessment of impacts, including any alternatives that can help avoid/minimize the identified impacts.

- b) The Consultants will review and verify adequacy of existing system/practices for application of relevant safeguard procedures and practices, and adherence to various applicable regulations/rules and guidelines detailed out in the ESMF.
- c) Preparation of relevant/comprehensive sub-project specific Environment Management Plan/s and Resettlement Action Plan, Indigenous Peoples Development Plan (IPDP), Gender Action Plan (GAP) and Land Acquisition Plan (LAP) if applicable, and their integration into the DPRs and Bidding documents.

To provide these services, the SPIU wishes to engage Consultants who have qualified environment and social experts with in-depth knowledge and experience in conducting Environment Impact Assessments, Social Impact Assessments and have carried out preparation of EMPs and RAPs. The engagement of the finally selected firms is expected to be for a period of 4 (four) months.

3. Scope of Work

The main tasks envisaged under this consultancy service include:

- a) Carrying out necessary surveys/investigations and establishing a credible baseline;
- b) Environmental and social impact assessment;
- c) Carrying out proper/meaningful consultations with stakeholders;
- d) Preparation of commensurate management/mitigation instruments;
- e) Preparation of cost estimates (including rate analysis), drawings, bill of quantities, technical specifications and other inputs for the EMP that will be integrated with the bid documents following the World Bank guidelines;
- f) Support the client in obtaining necessary regulatory clearances/permissions, as applicable and;
- g) Ensure/facilitate appropriate disclosure of documents.

These tasks will be carried out for: roads (10 numbers with a total length of 22 kms); two proposed bridges in Udupi district (25mts.across River Boodanagundi between Manooru to Nadubettu and 161mts. linking Kelagiri to KodiKanyana Temple) and one saline embankment proposed to be widened and strengthened in a length of about 7 kms at Manikatta Village, Kumta Taluka in Uttara Kannada District. More details are in **Annexure 1**.

The entire consultancy assignment is divided into two (2) main tasks. The scope of work envisaged under each task will include, but will not be limited to the following:

Task 1: Environment Impact Assessment and Preparation of Environment Management Plan/s

The Task 1 of this Terms of Reference (ToR) covers the preparation of Environment Impact Assessment/s (EIA/s) and Environment Management Plan/s for the sub-projects mentioned under scope of work. The study will be carried out in a manner consistent with World Bank policies, guidelines and procedures and in line with the applicable laws & regulations of the Government of India and Government of Karnataka.

Objectives of EIA

The objective of the EIA/s is to ensure that anticipated adverse impacts on natural, physical and social environment likely to accrue on account of proposed project interventions are evaluated/assessed adequately and addressed through appropriate mitigation measures incorporated/integrated into the design and execution of works. The EIA shall be based on primary data collection, intensive site visits and detailed assessment, consultations with stakeholders and study/analysis of available secondary data. The EIA is to be carried out in a manner that achieves the following objectives:

- 1) Establishes the environmental baseline in the study area
- 2) Identifies significant environmental issues and informs decision making for the proposed works, including analyzing the various alternatives.
- 3) Assesses potential impacts and provides for the requisite avoidance, minimization, management/mitigation and compensation measures, as needed.
- 4) Appropriate mitigation measures are developed and environmental management plan/s addressing

implementation, monitoring and reporting requirements are prepared.

- 5) Addresses the identified environmental issues through appropriate planning and design of works and integrates EHS requirements into the bidding documents.

Environmental Impact Assessment Requirement

The EIA shall be prepared following the World Bank's Operational Policies 4.01, 4.04¹, 4.36² and 4.11³. Applicable legislations or/and regulations promulgated by Ministry of Environment, Forests & Climate Change, Govt. of India (GoI) and regulations of Government of Karnataka, including those pertaining to coastal environment shall also be taken into consideration for preparation of EIA/s and EMP/s. The EA study to be undertaken under this assignment must conform to the guidelines and regulations issued by the Ministry of Environment & Forests & Climate Change, Govt. of India (GoI).

Study Area

The Consultants will identify and define the project influence area right at the inception stage. A 10 km radius from the project area could be considered for identifying and assessing impacts, if any on ecological sensitive areas/features.

Activities/sub-tasks to be carried out

The various key tasks/activities to be undertaken as a part of EA include the following:

Sub-task 1: Preparation of the Inception Report and Screening

The inception period shall be utilized by the Consultants team to familiarize with the project details. The Consultants should also recognize that due care and diligence planned during the inception stage helps in improving the timing and quality of the EA reports.

During the inception period, the Consultants shall:

- Study the project information to appreciate the context within which the EIA should be carried-out
- Identify the sources of secondary information on the project, on similar projects and on the project area
- Carry out a reconnaissance survey and revalidate the environmental screening exercise carried out by SPIU (using a format already developed for the project);
- Undertake preliminary consultations with selected stakeholders. The Consultants shall study the various available surveys, techniques, models and software in order to determine what would be the most appropriate in the context of this project.

The Consultants shall study the various available surveys, techniques, models and software in order to determine what would be the most appropriate in the context of this project. The environment team shall interact with the engineering and social teams to determine how the EA work fits into the overall project preparation cycle; how overlapping areas are to be jointly addressed; and to appropriately plan the timing of the deliverables of the EA process. These shall be succinctly documented in the Inception Report.

Sub-task 2: Description of the Proposed Works

Describe the proposed project and its geographic, ecological, social, and temporal context, including any offsite investments that may be required (e.g., access roads, raw material and product sources and storage facilities). The description of the project will include the following details:

¹<http://siteresources.worldbank.org/intforests/resources/op401.pdf>

²http://web.worldbank.org/wbsite/external/projects/extpolicies/extopmanual/0_contentmdk:20970737~menupk:64701637~pagepk:64709096~pipk:64709108~thesitepk:502184~iscurl:y_00.html

³<http://siteresources.worldbank.org/extforsoubook/resources/08-fsb-ch08.pdf>

- Need and justification for the proposed work/s.
- A map showing the project site and the project's area of influence
- Map/s at appropriate scale with proper labels and legends to illustrate the general setting of the project and related activities as well as surrounding areas/features.
- Geographic coordinates and photos of the site, including key offsite areas, if any.
- Details on proposed works, quantities of materials to be used, material sources, work methodology/sequencing, key equipment/machinery and man power proposed to be used and other such technical details.
- Schematic diagram describing each activity and operational parameters/issues.
- Construction methodology and strategies proposed for the execution of works.
- Proposed Construction Schedule.
- Likely project beneficiaries.

Sub-task 3: Description of the Environment – Preparation of Baseline

The existing conditions/status shall be described through collection, compilation, evaluation and presentation of baseline environmental status, including the following:

I. Natural/Physical Environment

- Description of the existing topography in the project area
- Nature of surrounding environment (including settlements, tourist places, forest areas, and other establishments) and distance from the proposed sub-project site
- Climatological and meteorological conditions (temperature, humidity, wind direction, rainfall, cyclone tracks, tidal surge).
- Listing past natural and other disaster with its magnitude and subsequent damage reported.
- Description of soil, land and geology of the study area
- Water resources, water bodies and water availability/quality in the project area
- Ambient air quality and noise levels.
- Any other aspect/element relevant in the local context

II. Biological Environment

- Ecological characteristics/features in the project area
- Major terrestrial and aquatic flora and fauna in the project area.
- Presence of ecologically sensitive habitats/migratory routes of animals/birds/fish and other aquatic organisms
- Presence of wetland/s
- Presence of rare, endangered or threatened species, if any
- Protected areas and other critical habitats, if any.
- Any other aspect/element relevant in the local context

III. Socio-cultural Environment

- Socio-economic setting and characteristics
- Predominant economic activities such as fishing, paddy cultivation etc.
- Usage by tourists, general public and other groups/agencies
- Culturally important features/structures

- Utilities and common property resources
- Any other aspect/element relevant in the local context

Strip plans will be prepared. An inventory of all key features will be documented and included in strip plans. This includes:

- Trees and other environmental features
- Mangroves
- Land-use
- Temporary and permanent structures
- Utilities, if any
- Various sensitive receptors such as schools, religious places and other common property resources and
- Any other issues/features, which may be affected by the construction and/or during operation and maintenance.

The Consultants shall determine the Valued Environment Components (VECs) considering the baseline information (from both secondary and primary sources), the preliminary understanding of the activities proposed in the project and the stakeholder (and expert) consultations. Use of iterative Delphi techniques is recommended. Based on the identification of VECs, Consultants shall identify information gaps to be filled, and conduct additional baseline surveys, including primary surveys. The sampling size and frequency should be appropriate to establish a reliable/realistic baseline and associated impact predictions.

Sub-task 4: Identification of Applicable Laws/Regulations/Rules

The national, state and local legislations, acts, rules and guidelines applicable to proposed project interventions/activities shall be identified and studied properly. Regulatory permissions/consents required for the proposed works shall be identified and listed appropriately and brought to client's attention. The details and applicability of the safeguard policies of World Bank to the proposed activities shall also be assessed. Based on this, the Consultants will assist the client in applying and obtaining the required clearances/permissions.

Note: CRZ clearance for all the proposed sub-projects, including the saline embankment have been obtained by SPIU.

Sub-task 5: Assessment of Potential Impacts

The anticipated potential environmental impacts due to project activities shall be identified and evaluated/assessed comprehensively. In the cases of significant environmental losses or benefits, the Consultants shall estimate the economic/financial costs of environment damage and the economic/financial benefits the project is likely to cause. In cases, where the impacts or benefits are not too significant, qualitative methods could be used. In addition, wherever economic and financial costs of the environmental impacts cannot be satisfactorily estimated, or in the cases of significant irreversible environmental impacts, the Consultants shall make recommendations to avoid generating such impacts.

The determination of potential environmental impacts shall include (but not be limited to) on the following aspects:

- Impact on Terrestrial and Aquatic flora and fauna, including Threatened or Endangered Species
- Impact on Mangroves
- Impact on air quality
- Impact on water quality
- Impact on noise levels

- Impact on properties (by type/category) (including CPRs)
- Impact on permanent or temporary use of public spaces and facilities
- Impact on utilities, if any in/along the alignment, including disruption in services that may specifically occur during construction

- Health and safety issues during construction and operation phases.
- Occupation and safety hazards during construction phase.

- Historical data on type and frequency of accidents.
- Disruption/inconvenience to traffic/pedestrian movement, including access to public properties
- Temporary traffic diversion/access control, including provision for barricading and safety signage markers

- Construction materials (quantity requirement and storage)
- Water requirement for the project with basis of calculations, and its source/s during the construction phase.
- Type of vehicle/equipment usage during construction.

- Quantity of debris/excavated earth during construction
- Disposal of excess excavated earth and waste (if any)
- Other construction stage impacts (camps/plants)

During impact assessment, special attention shall be given to:

- Comprehensive description of baseline (including sources of information)
- Potential environmental, economic and cultural impacts due to proposed works covering the points listed above. Specific attention is needed to assess the impact on mangroves, aquatic species, material sources and livelihoods of the people.
- The Consultants shall conduct an analysis of the nature, scale and magnitude of the impacts that the project is likely to cause on environment, especially on the identified VECs, and classify the same using established methods.
- Categorization of the impacts in terms of nature/type, positive or adverse, magnitude (high, medium or low), scale, direct/indirect/induced, duration (short, medium and long term, sporadic), reversibility (temporary/permanent).
- Possible sources/activities of pollution during execution of the project
- Assessment of Cumulative Effects/Impacts, where possible.
- Identification of various other issues such as disposal of excess excavated earth and waste.
- Assessment of the health and safety impacts, likely to arise particularly during the construction phase.
- Identification of various regulatory clearances that may be required for the project other than CRZ permission, which has already been obtained.

Sub-task 6: Analysis of Alternatives

- Evaluate and compare feasible alternatives in terms of technology, design and operation, including the "without project" situation.
- The feasibility of mitigating impacts; their capital and recurrent costs; their suitability under local conditions; and their institutional, training, and monitoring requirements should also be detailed out.
- For each of the alternatives, quantify the environmental impacts to the extent possible, and attach economic values where feasible.
- Explain the rationale behind the preferred/chosen option.

Sub-task 7: Consultations with Public/Stakeholders

Consultation with the stakeholders shall be used to improve the plan and design of the project rather than as project information dissemination sessions. The consultations shall be carried out to:

- Collect baseline information;
- Obtain a better understanding of the potential impacts;
- Appreciate the perspectives/concerns of the stakeholders and;
- Secure their active involvement during subsequent stages of the project.

Consultations shall be preceded by a systematic stakeholder analysis, which would:

- Identify the individual or stakeholder groups relevant to the project and to environmental issues;
- Include expert opinion and inputs;
- Determine the nature and scope of consultation with each type of stakeholders and;
- Determine the tools to be used in contacting and consulting each type of stakeholders.

A systematic consultation plan with attendant schedules will be prepared for subsequent stages of project preparation as well as implementation and operation, as required.

During the Environmental Assessment process, adequate number of structured public consultation shall be carried out at prior informed time and place with various stakeholders including women stakeholder groups. Proceedings and/or minutes of all such meetings/consultations, attendance sheets, photographs and videography shall be a part of EA and shall be submitted to the SPIU for record and reference.

Sub-task 8: Preparation of Environmental Management Plan

Based on the anticipated environmental impacts identified, assessed and predicted, an Environmental Management Plan (EMP) shall be prepared. The EMP should include a set of avoidance/minimization, mitigation, monitoring, robust cost estimates and institutional measures to eliminate adverse environmental impacts and to offset or reduce them to acceptable levels. The plan also should include actions needed to implement these measures. Specifically, the EMP should (but not limited to):

- Identify and summarize all anticipated significant adverse environmental impacts and opportunities for enhancement
- Develop feasible and cost-effective measures to prevent or reduce all identified and evaluated significant adverse environmental impacts to acceptable levels.
- Describe with technical details, each mitigation measure, including the type of impact to which it relates and the conditions under which it is required, together with designs, equipment descriptions, and operating procedures, as appropriate.
- Prepare a Construction Management Plan with safety measures and work procedures to avoid accidents and accidental spills/pollution during the execution of works
- Guidelines for specific activities such as camp site management, dust control, work zone safety management, tree/mangrove plantation etc.
- Identify monitoring objectives and specify the type of monitoring, with linkages to the impacts assessed in the EA report.
- Recommended monitoring program should provide a specific description and technical details of monitoring measures including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions;
- The EMP should also provide a specific description of institutional arrangements, including individuals/agencies responsible for carrying out the mitigation and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training).
- Provide monitoring and reporting procedures to: (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.
- A detailed training plan shall be prepared, (a) to ensure that the environment management plan can be implemented; and (b) to develop and strengthen environmental capacities. To strengthen environment management capability in the agencies responsible for implementation, EMPs may suggest: (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.
- For all the above three aspects (mitigation, monitoring, and capacity development), the EMP should provide (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) capital and recurrent cost estimates (c) sources of funds for implementing the EMP. All these cost estimates should be integrated into the total project cost estimates.
- The EMP should be integrated into the project's overall planning, design (DPR/s), budget, and implementation. EMP should also specify the action needs to be taken, with institutional mechanism, in the event of proposed mitigation measures fail or are found inadequate to ameliorate environmental impact of the sub project.

Sub-task 9: Report Preparation

The Environmental Assessment Report shall be focused with presentation of supporting data and analysis in a separate volume, if needed. It should include an Executive summary concisely discussing significant findings and recommended actions. The suggested report structure is outlined below:

1. Executive Summary
2. Introduction
3. Description of the Proposed Project
4. Approach and Methodology Used
5. Policy, Legal and Regulatory Assessment
6. Existing Environmental Conditions
7. Analysis of Alternatives
8. Consultations with Stakeholders
9. Potential Environmental Impacts
10. Environmental Management Plan, including monitoring plan and budget
11. References
12. Annexures containing additional data, analysis, maps, drawings etc.

Sub-task 10: Disclosure of Documents

The Consultants will provide support and assistance to the client in meeting the disclosure requirements, which at the minimum shall meet the World Bank's policy on public disclosure. The Consultants will prepare a plan for in-country disclosure, specifying the timing and locations; translate the key documents, such as the EA Summary in local language; draft the newspaper announcements for disclosure; and help the SPIU to place all the reports/key outputs in the client's website. The Consultants shall prepare a non-technical EA summary report for public disclosure.

Task 2: Social Impact Assessment and Preparation of Resettlement Action Plan/s

Social impact assessment and preparation of RAP is a critical step taken to incorporate social analyses and participatory processes into project design and implementation for optimizing development outcomes. SIA helps to enhance benefits to the poor, marginalized and the vulnerable while minimizing and mitigating adverse impacts on the local communities. This involves analyzing social issues and impacts on the affected populations in order for designing social management plans to mitigate adverse impacts and improve people's lives through participatory implementation.

The social assessment assists in taking conscious decisions to avoid social and resettlement impacts. Detailed and extensive SIA will be conducted as per WB guidelines and established international best practices.

Objectives of SIA

The main objective of Social Impact Assessment (SIA) and preparation of RAP is to ensure that the project design and implementation are socially acceptable. Further, the objective of SIA shall be to provide inputs for preliminary and detailed design for the sub-project. The Resettlement Action Plan/s to be developed as part of the SIA are to be used during the implementation of the project for executing the resettlement and rehabilitation activities.

The SIA shall identify all potential social issues in the project and shall develop management measures for addressing all these issues. To this end, the SIA shall consist of (but not limited to):

- Socio economic baseline established through census surveys
- Stakeholder Identification & Participatory Consultation
- Project and regional level social issues that would need to be considered in the analysis of alternatives, planning and design of the project and establish their criticality in the context of the proposed works

- Assessment/analysis of impacts and mitigation strategy
- A Resettlement Action Plan to address the project's social issues
- Training and capacity building plan, strategy and modules for concerned stakeholders towards implementation of the plans produced.
- A Monitoring Plan encompassing the monitoring parameters and schedule for monitoring.

Key tasks to be carried out in this part of the assignment includes:

In the preparation phase, the SIA shall include the following tasks (but not be limited to):

- Define likely project impact zone (direct/indirect) based on project proposal
- Collect information through desk review and field visits on existing baseline conditions, including all land uses, structures and people (e.g., demography, socio-economic status, vulnerability, status of infrastructure and access to people, livelihood programs, market rate of assets, legal status of land through revenue records.) within the likely project impact zone.
- Identify major and minor social impact issues including loss of assets, poverty, gender and health issues and estimate the economic and social impacts on people and land.
- Analyze differential impacts on different categories of people (land owners, residential households, small/landless/marginal farmers, labour and daily wage earners, SCs/STs, women and children, elderly, differently abled, poor, marginalized etc), and impacts on communities/common facilities such as roads and cultural properties;
- Assessment of construction phase impacts on people, groups and communities;
- Explore viable alternative project designs to avoid, where feasible, or minimize social impacts (displacement, impact on vulnerable community, cultural properties etc.)
- Assess impacts of the project, and provide for measures to address the adverse impacts by the provision of the requisite avoidance and/or compensation measures;
- Suggesting broad strategies for adverse impact mitigation and social value addition in order to optimize development outcomes.
- Identification of key stakeholders involved in various aspects of the project (project implementing and executing agencies and groups from civil society; description of socio-economic organizations of local communities that may affect project outcomes; carry out public consultation with the likely affected groups, NGOs, district administration and other stakeholders and document the issues raised and outcomes; and assessment of local capacities in terms of participation in planning, implementation and supervision, and evaluation
- Studying people's perceptions of project impacts and minimum acceptable mitigation measures that will enable them to cope with economic losses and displacement;
- Socio-political analysis of local power relations and institutions available for participation, grievance redress, and conflict resolution ó access to resources and power by different groups and communities / categories of people;
- Develop Resettlement Action Plan including gender impacts and enhancement measures for implementing, monitoring and reporting of the social, gender and resettlement compensation measures suggested.
- Detailed assessment for loss of livelihoods is to be done. This includes:
 - Complete loss of livelihood
 - Partial loss of livelihood
 - Loss in working hours
 - Loss in working efficiency
 - Loss in livelihood because of increase in commutation time and other associated impacts

of the project

- Impact on children and other vulnerable sections of the society.

Vulnerability assessment and mitigation due to increased exposure to natural and manmade hazards during and after the project implementation phase

4. Other Requirements

The other requirements for the Environment & Social Impact Assessment (EIA/SIA) studies will include:

- Preparation of environmental and socio-economical profile of the village/s, through primary and secondary information (comprising demographic, socio-economic, physical, biological and ecological environmental features, etc.)
- Development of a detailed strip plan with various features that are located along the alignment and its immediate vicinity that may be impacted directly or indirectly on account of proposed works. The impacts, however minor, are to be marked on these plans/maps.
- Videography of the entire alignment for records.
- A socio-economic survey of the households along the alignment duly covering all indicators for the present and future evaluation and assessment.
- Preparation of a questionnaire or instruments for the EIA/SIA study and share the same with SPIU/World Bank for review.

5. Consultants Inputs/ Staffing

The Consultants are encouraged to visit the project area and familiarize themselves, at their own cost, before submitting the proposal; and **propose an adequate number and skill-set for the senior specialists and technical support staff required for this assignment**. The Consultants are free to employ additional resources as they see fit. However, basic requirements are specified in **Annexure 2** of this ToR. Further, the Consultants will allocate adequate number of field surveyors, distinct from the technical support staff, to complete the study in time.

The Consultants shall provide for all tools, models, software, hardware and supplies, as required to complete the assignment satisfactorily. These should be widely recognized or accepted. Any new model or tool or software employed should be field-tested before use for the purpose of this EIA.

6. Co-ordination among Engineering, Social and Environmental Studies

Timing is an important essence for the study, which shall be closely coordinated between the engineering, environment and social teams involved in preparation of the project. The Consultants with the assistance from SPIU, shall establish a strong coordination with the technical/engineering team. The Consultants will keep in mind the specific requirements of the project in general, and the engineering/design studies in particular, and outputs shall be planned accordingly. It is recommended that some of the consultation sessions are organized in co-ordination with the engineering/DPR Consultants. The Consultants shall review the contract documents ó technical specifications, and rate analysis, to ensure that there are no conflicts between the EMP stipulations and specifications governing the execution of works under the project.

7. Outputs/Deliverables

The following are the expected outputs/deliverables from this assignment:

The Consultants is expected to provide the following outputs:

- 1) Inception Report, which should include approach and methodology for the assignment and detailed work plan including time schedules.
- 2) Detailed Strip Plans(separate for each proposed work/sub-project) incorporating environment and

social features along with necessary photographs and videograph as specified in the scope.

- 3) Public Consultation Report/s (separate for each proposed work/sub-project): This will include the summary and details of the conducted /organized stakeholders meetings/ consultations and preparation of Minutes of meeting (MOM), photographs and videography. It will also include recorded discussions with individual stakeholders and experts.
- 4) Environment Impact Assessment Report/s (separate for each proposed work/sub-project)
- 5) Environment Management Plan/s, including bill-of-quantities (BOQ) and technical specifications for all items of work required for environmental mitigation/enhancement in a way that these can be readily integrated to the construction contracts (separate for each proposed work/sub-project).
- 6) Non-technical EIA/EMP summary report for public disclosure in English and in vernacular (separate for each proposed work/sub-project).
- 7) Social Impact Assessment Report/s (separate for each proposed work/sub-project)
- 8) Resettlement Action Plan (separate for each proposed work/sub-project)
- 9) Non-technical SIA/RAP summary report for public disclosure in English and in vernacular (separate for each proposed work/sub-project).

The Consultants shall make formal presentations, coordinated by the SPIU, at key milestones on the: (a) proposed work plan after submitting the Inception Report; (b) findings of the EIA/SIA; and (c) design recommendations and details of EMP/s and RAP/s. The Consultants shall co-ordinate with the concerned line agencies/departments working on project preparation before each presentation. All supporting information gathered by the Consultants in undertaking these terms of reference would be made available to the SPIU.

8. Inputs and logistic support to be provided by the SPIU

The SPIU will provide all ready and available information as requested by the firm. Further, the SPIU will provide all necessary and reasonable support to the firm to collect secondary data, such as issuing authorization letters. The Firm will be responsible for any translation of documents and for processing of data. The SPIU will designate an officer to act as the main liaison officer for the study and participate as possible. The SPIU will ensure the timely flow of information and documents from one firm/agency to other. The SPIU will also help in organizing the formal presentations from all Consultants engaged in project preparation. The SPIU will not provide any other logistic support.

9. Duration of Services

The total duration for the assignment is 4 months from the date of agreement. The consulting firms should submit the work plan and the timelines as per the standard format for timely completion of the assignment. The times schedule for submission of various reports is as follows:

- Inception report shall be furnished within 2 weeks from the date of agreement.
- Draft EIA/SIA and EMP/RAP report/s shall be submitted by 12 weeks from the date of agreement (separate for each sub-project/proposed work).
- Final EIA/SIA and EMP/RAP report/s shall be submitted by 14 weeks from the date of agreement (separate for each sub-project/proposed work).
- Non-technical EIA and EMP summary report for public disclosure in English and in Kannada within 15 days from finalization of EIA/EMP (separate for each sub-project/proposed work).

Annexure 1

Brief Project Background

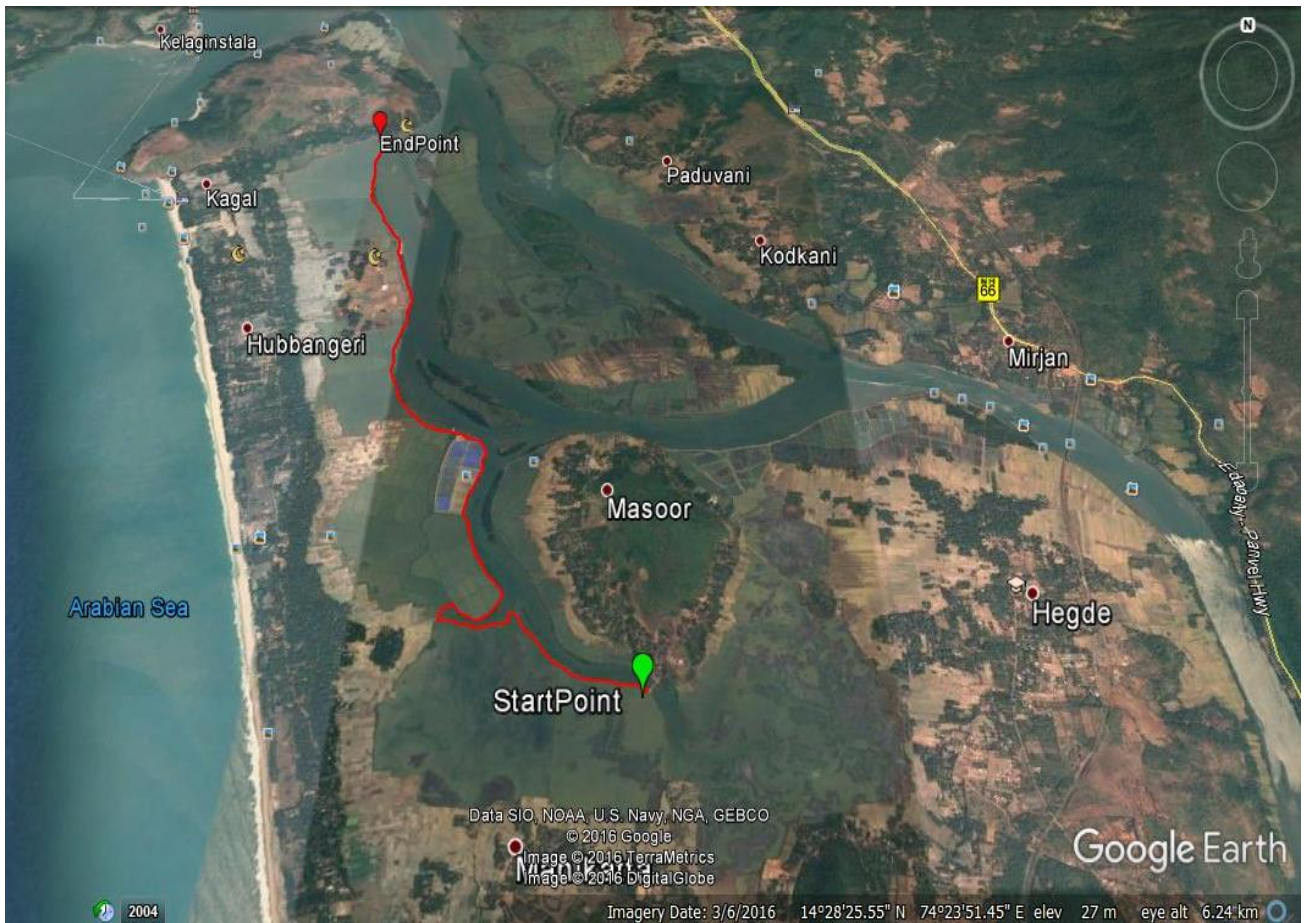
1. **Name of the Proposed Work:** Construction of Saline embankment at Manikatta (KLS) in Kumtataluka of Uttar Kannada district, covering 7 kms length of the bund.

Manikatta, a small village is located at a latitude of 74°24'30" east and longitude of 14°30'30" north on the bank of Aghanashini river. It is a small village in Kumtataluka in UttaraKannnda district and is located 62 km south from the district headquarters of Karwar. Manikatta village is located at an elevation/altitude of 20 meters above sea level. The saline embankment on the bank of Aghanashini river near Manikatta village has been proposed under NCRMP II.

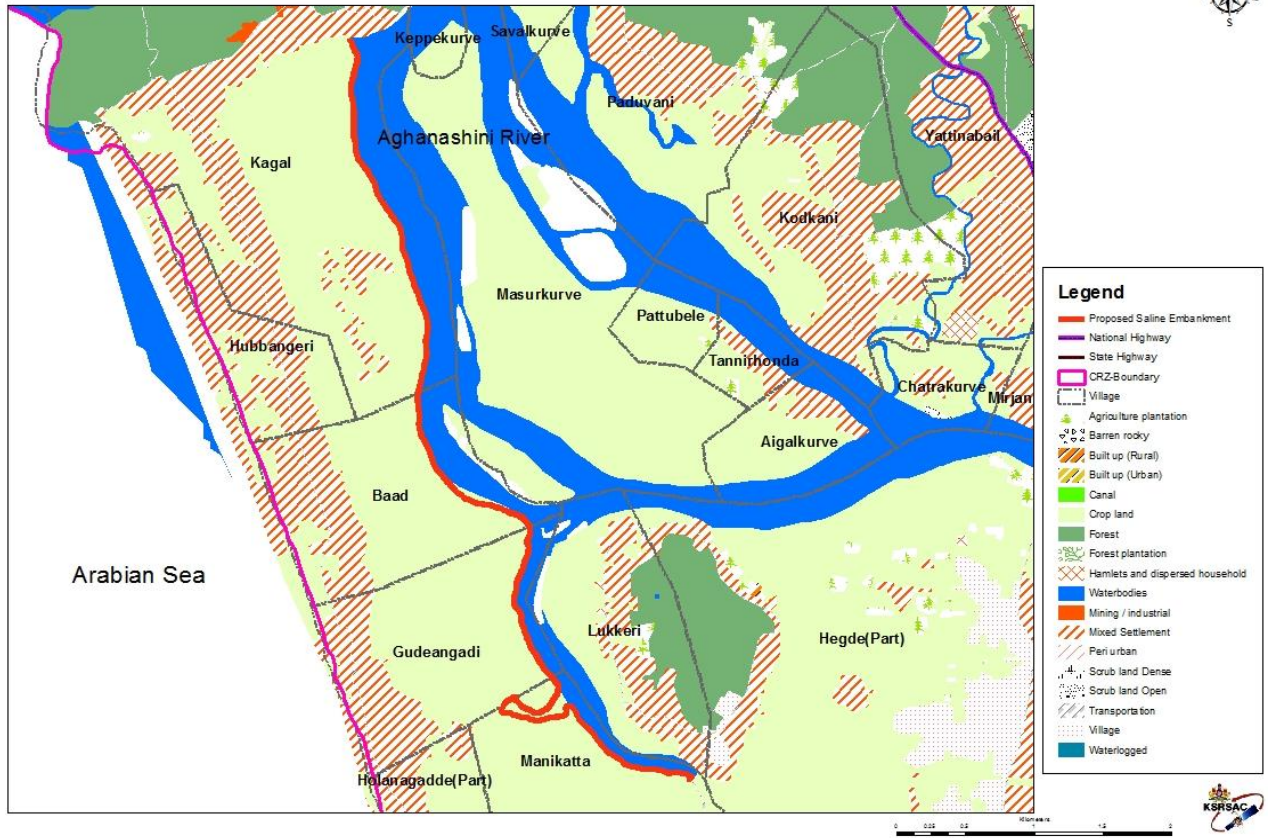
The length of the Saline Embankment near Manikatta village is 12 km and has a command area (with Paddy fields and Arecanut garden) of 405 acres. During monsoon, there is ingress of saline water into the paddy fields, when the salinity increases to around 35 ppt & PH range to around 6.0 to 7.5, destroying standing crops and rendering land useless for agriculture.

To mitigate the risk from saline ingress, 500 farmers are engaged in community farming (joint-farming) and are growing short duration Khagga-Paddy (Salt tolerant paddy variety) - this is a risk pooling/risk management strategy.

The location of the proposed work falls under CRZ-III and has been accorded CRZ clearance from KSCZMA.



Manikatta Saline Embankment, Kumta Taluk, Uttara Kannada District



2. Name of the Proposed Bridge Works

- a) Construction of bridge and approach road (25mts.) on river/stream Boodaanagundi ó Manooru to Nodubettu in Udupitaluka of Udupi district.
- b) Construction of bridge and approach road (161mts.) at Kelageri to KodiKanyana Temple in Udupitaluka of Udupi district.

3. Name of the Proposed Road Works

Sl. No.	Name of the Road	Length (In Km)
Dakshina Kannada District (Mangalore Taluka)		
1	Mukka-Sasihithlu road from Km. 0.00 to 5.50 Km. in Mangalore Taluka	5.50
2	Chitrapura River side towards East Upto NH, Mulki Town in Mangalore Taluka	1.70
4	Adamkudru School to Adamkudru Church in Mangaluru City South Constituency	1.20
5	Someshwara Temple sea shore to Thokkottu in Mangalore Taluka.	3.00
6	Ullala Beach, UllalDargha via to Thokkottu in Mangalore Taluka.	2.40
Udupi District		
7	Tekkatte to Kome fisheries road (Subramanya temple road), Tekkatte	2.10
8	Road from Gangolli light house to TrasiGangolli Main road, Gangolli	0.90
9	ShirurAlvegadde fisheries road, Shirur	1.90

Sl. No.	Name of the Road	Length (In Km)
10	Road from Yedthare to PaduvariSomeshwara road, Yedthare	3.30

Annexure 2

Estimated Staff Requirement with preferred Qualification Requirements for the Consultancy Assignment

S. No.	Position	Preferred Minimum Qualification and Experience	
		Qualification	Experience
1	Senior Environmental Expert (1 no.) ó Team Leader	Masterø Degree in Environmental Science/ Engineering	Not less than 10 years and at least 7 years in linear infrastructure projects
2	Senior Social Expert (1 no.)	Masterø Degree in Social Science/Social Work	Not less than 10 years and at least 7 years in linear infrastructure projects
3	Coastal Ecology Expert (1 no.)	Diploma/degree in relevant subject	Not less than 10 years and at least 7 years of work on coastal ecology
4	Occupational Health and Safety Expert (1 no.)	Degree/Diploma in Occupational Health and Safety	Not less than 7 years with at least 4 years in dealing with occupational health and safety issues in linear infrastructure projects
5	Social Expert (1 no.)	Masterø Degree in Social Science/Social Work	Not less than 7 years with at least 4 years in linear infrastructure projects
6	Community Consultation Specialist (1 no.)	Masterø Degree in Social Work	Not less than 10 years of experience
7	GIS Expert (1 no.)	Diploma/training in GIS	5 years of experience

The above key positions require:

- Experience in EIA/SIA studies of linear developmental projects.
- Experience of working on coastal ecological projects will be given a preference.
- Experience on projects funded by World Bank/ADB would be of added advantage.
- Graduate field staff consisting of equal number of male and female candidates with good knowledge in Kannada and English.