

# Vulnerability Reduction of Coastal Communities (VRCC) Government of Tamil Nadu August 2008 (Updated)

## Environmental and Social Management Framework

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### **I. Introduction, Objectives and Scope**

1.0 The project will support the efforts of the Governments of India, Tamil Nadu to revive the livelihoods and promote recovery in the Tsunami-affected areas. The project will include significant amount of reconstruction work and thus involve environmental assessment, land acquisition, involuntary resettlement and impacts to cultural properties. In order to deal with the adverse impacts, the preparation of environmental and social management framework has been undertaken. This framework is updated based on the implementation experience so far and also taking into account the nature of impacts in the proposed new component "Vulnerability Reduction

of Coastal Communities” in Tamilnadu. This framework describes the principles, objectives and approach to be followed in minimizing and mitigation the adverse environmental and social impacts caused as a result of the implementation of the Tsunami reconstruction activities.

## **Purpose of ESMF**

1.1 The Environment and Social Management Framework (ESMF) details agreed policies, guidelines, and procedures to be integrated into the implementation of the Bank-supported Emergency Tsunami Reconstruction Project (hereafter the 'Project') in the Indian state of Tamil Nadu. The Project will support the Government of India (GoI) with immediate post-tsunami recovery needs and reconstruction activities. The operation is expected to be implemented over a three-year period. The project has been prepared in accordance with the World Bank's Operational Policy 8.50, Emergency Recovery Assistance, to expedite processing and provide immediate support through an IDA credit of US\$465 million. The project consists of 5 components and will support: (i) repair and reconstruction of rural and urban housing; (ii) restoration of livelihoods, including limited support to the severely affected fisheries sector, restoration of damaged agricultural and horticultural lands, and repair/ reconstruction of damaged infrastructure in animal husbandry sector; (iii) Repair, reconstruction and upgrading of public buildings and public works; (iv) technical assistance and training, and; (v) project management. The rehabilitation and reconstruction program is also being supported by the Asian Development Bank who is planning some activities in Kerala and in certain sectors in Tamil Nadu. A new component called " Vulnerability Reduction of Coastal communities (VRCC) is added at the mid-term of the project in middle of 2007.

1.2 Good environmental and social management practice is a well-established element of project preparation and implementation. It is even more important in the context of a reconstruction scenario where additional criteria must be considered, such as enhancing hazard risk management and strengthening natural resilience to climatic and natural events. Development of the ESMF therefore attempts to respond to the needs of the reconstruction and the opportunities provided by it, and seek to:

- Enhance positive and sustainable environmental and social outcomes associated with Project implementation;
- Support the integration of environmental and social aspects associated with the numerous subprojects into the decision making process;
- Support displaced persons in their efforts to restore their livelihoods and living standards and compensate any loss of livelihood or assets;
- Enhance positive environmental and social outcomes;
- Minimize environmental degradation as a result of either individual subprojects or their cumulative effects;
- Protect human health;
- Minimize impacts on cultural property.

1.3 Implementation of the ESMF will also support and assist with the achievement of compliance with applicable laws and regulations and with relevant Bank policies on environment and social development issues.

## II. Principles and Considerations

2.1 The damage assessment report prepared by the joint assessment team of ADB-UN-WB proposed broad principles for the environmental aspects of the rehabilitation and reconstruction program. These principles propose a framework for considering issues, remedial options and opportunities to enhance environmental management and outcomes associated with man-made and natural systems. These principles, which go beyond the ESMF framework, are presented in Annex 3 as a reminder of the spirit in which the environmental aspects are to be integrated into the overall program.

2.2 From a narrower project-specific perspective, the ESMF was prepared in consideration of the emergency nature of the proposed rehabilitation and reconstruction operations, while incorporating the principles of due diligence in managing potential environmental and social risks. Key ESMF principles, in the context of responding to the external and internal requirements, have therefore considered:

- The Project will support multiple subprojects, although the general thrust is understood by the nature of the sectors (housing, fisheries, etc...). To ensure effective implementation of environmental and social criteria, the ESMF provides guidance on the approach to be taken during implementation for the selection and design of subprojects and the planning of mitigation measures;
- Subprojects with the potential for significant environment and/or social impacts will be identified . through the subproject screening mechanism and the, subproject-specific environmental and/or social assessment will be prepared and will be the subject of review and approval by the World Bank;
- The project will have two categories of affected people. The people affected by Tsunami (TAPs) will be assisted under the provisions of Tsunami Rehabilitation Policy (TRP) finalized by the Government of Tamil Nadu vide G.O.Ms.No172 Revenue NC III Department dated 30.03.2005. The people affected by project activities such as land acquisition for housing and infrastructure facilities and displacement of squatters occupying public lands to be used for reconstruction activities, will be offered compensation and/or assistance as appropriate in accordance with the principles and guidelines outlined in this framework;
- Draft resettlement plans (RP) for any sub-project involving land acquisition and associated impacts or involuntary relocation of people affected by the tsunami due to safety considerations is required prior to the approval of corresponding sub-project. This is to ensure that a proper planning has been made to deliver the resettlement benefits to the affected persons. The voluntary donation or compensated contribution of land for sub-project activities will be guided by the "Guidelines for preparation of land acquisition and involuntary resettlement plans" presented in **Annex 6**;
- The overall aim of the proposed operations is to ensure the sustainable restoration of the habitats and livelihoods of populations displaced or affected by the tsunami. The overarching principles of the World Bank's social safeguard policies are instructive on the use of systematic and cost effective mechanisms to achieve this objective. These include: (i) consultations with affected people in the preparation of relocation plans and ensuring that their views and concerns are made known to decision makers and taken into account; (ii) socio-economic surveys to identify and assess social impacts, including loss of assets, income source or livelihoods; (iii) disclosure of relocation plans to the affected population and dissemination of information on their rights and measures to improve or restore their livelihoods; and (iv) strategies to ensure that benefits are also provided to host communities;
- In the event that people are physically or economically affected by Project-supported subprojects, appropriate social studies, in accordance with GoI and state/UT policies and the

- Bank's policies will be prepared; and
- Consultation and disclosure requirements will be adapted to meet the special needs of the proposed project. The updated SMF will be disclosed in the websites of the Government of Tamil Nadu, other public places in Tamil Nadu, and in the World Bank InfoShop.

### **III. Laws, Regulations and Notifications**

3.1 A brief synopsis of select environmental regulations is provided in **Annex 1**. The following paragraphs highlight the salient features of select laws which have a particularly important bearing on the design and implementation of the Project.

#### **a) Environment**

3.2 Coastal Regulation Zone (CRZ) Notification. A crucial element of the regulatory framework that holds significant implications for project implementation is the Coastal Regulation Zone (CRZ) Notification of 1991. The CRZ Notification is the principle legislation governing development activities and land use along India's coasts in the area falling within 500 meters of the high tide line and in the inter-tidal zone. Under the notification, all areas within this zone are to be classified as CRZ I (i), I (ii), II, III or IV based on geomorphology and various other criteria, including ecological significance, existing developments and other features. The nature and kinds of land uses permitted vary according to the specific zone within which an area falls, with greater restrictions on CRZ-I areas, fewer on CRZ-II areas and variable restrictions in CRZ-III areas, where there is considerable scope for varied interpretation as well. Generally, the Notification is complex (this is compounded by 17 amendments since 1991) and has been interpreted and applied in different ways by both Centre and states.

#### **(b) Land Acquisition**

3.3 The Land Acquisition Act (LA) of 1894 amended in 1984. The private land acquisition will be guided by the provisions and procedures outlined in this act. As per the LA act, the District Collector will function as the Land Acquisition Officer on behalf of the Government. Usually, the land acquisition is time consuming and takes about 2-3 years to complete the process. A major cause of the delays in the land acquisition is regarding the amount of compensation for the land and assets lost leading to legal proceedings. There is also provision under section 17 of the act to acquire lands under emergency or urgency clause by paying 80% of the initial estimated amount and take the possession of the land and later complete the process to pay the balance amount in case of emergency development activities. There is also provision for consent award to reduce the time for processing if the land owners are willing to agree for price fixed by the District collector. The option of acquiring lands through private negotiations is also available.

#### **(c) Resettlement**

3.4 National Policy on Resettlement and Rehabilitation. The Government of India recently issued a "National Policy on Resettlement and Rehabilitation for Project Affected Families, 2003" through a Gazette notification on February 17, 2004, which is now under revision. The policy applies to all projects where more than 500 families are displaced in plain areas and more than 250 families in hilly and scheduled areas. The policy mentions that proposed benefits and monetary grants are minimum and state governments and project proponents are free to adopt higher provisions than provided in the policy. However, the state Government and other agencies are yet to come out with their own policies in line with the national policy. Therefore, the principles and objectives laid

down in this framework will be the basis for mitigating any resettlement impacts.

#### **IV. Environment and Social Management Framework**

##### **a) Roles, Responsibilities and Management Framework**

4.1 GOI has constituted a multi-sector core group headed by a Chief Coordinator for planning and implementation of post-tsunami recovery and rehabilitation program in the affected states and union territories. It will work as an inter-departmental coordination mechanism to be convened on a regular basis for planning and monitoring the entire recovery and rehabilitation program. At the state level in Tamil Nadu, the Relief Commissioner's Office in Revenue Department will be the nodal department and implementing agency. The primary responsibility for compliance with ESMF will rest with this office. Subproject identification and preparation will be the responsibility of the respective Departments while implementation will be handled through the District Administration headed by the District Collectors.

4.2 The Commissioner will designate ESMF Coordinators as may be necessary, for overseeing the implementation and monitoring of the ESMF. The Coordinators will work closely with each department to determine the appropriate level of inputs on environment and social issues and support the development of standard guidelines, codes of practice, environmental and social review frameworks, as appropriate and in accordance with the preliminary analysis provided in the sector issues matrices presented in **Annexes 4 and 5**.

4.3 The overall management framework, including roles and responsibilities, for the implementation of the ESMF will be consistent and fully integrated with the agreed project implementation arrangements at the state/UT level. The PMU will, among other things, and in accordance with guidance provided in **Annexes 4 and 5**: i) develop the sector-level criteria for environmental and social management; ii) develop the cross-cutting guidelines on core environment and social issues (such as the guidelines for resettlement and rehabilitation, site selection criteria for rural and urban housing, debris/rubble collection and disposal guidelines, among many others); iii) establish reporting framework and formats; iv) others, as required.

4.4 During Project supervision, the World Bank will assess the implementation of the ESMF and recommend additional measures for strengthening the management framework and implementation performance. The reporting framework, screening procedures and preparation of management and mitigation plans will be discussed and agreed by the Bank team as necessary.

##### **a) Sub-Project Cycle and Screening Criteria**

4.5 Subproject selection, design, contracting, monitoring and evaluation will be consistent with agreed guidelines, requirements and documentation as required under the Screening and Review Process which will be fully integrated into the Project Implementation Plan/Operations Manual.

- Overall guidelines for environment and social aspects of the project as well as procedures for the protection of cultural property, including chance finds of archaeological artifacts (**Annexes 3 and 4**);
- Checklist for screening of social impacts of subprojects in **Annex 5**;
- Land acquisition assessment data sheet in **Annex 5(a)**;
- Guidelines for land acquisition and resettlement plans **Annex 6**;
- A list of ineligible subprojects listed in **Annex 7**;
- Land Acquisition And Monitoring Sheet **Annex 8**

- Entitlement Matrix for Land and Resettlement Impacts, **Annex 9**.
- Social Aspects - Roles and Responsibilities, **Appendix 10**

4.6 The PMU's first activity on the ESMF front should be the elaboration of a clear sub-project cycle and the identification of the key decision points for managing the ESMF screening process, including the subproject specific reviews/assessment and management plans, as discussed below.

## **b) Screening Process**

4.7 The screening process is the first step in the ESMF process. One of the objectives of the screening process is to rapidly identify those subprojects which have little or no environmental or social issues so that they can move to implementation in accordance with pre-approved standards or codes of practices or other pre-approved guidelines for environmental and social management. The screening process requires consideration of the guidelines provided in **Annexes 4 and 5**.

4.8 Involuntary Resettlement (World Bank OP 4.12) The Bank's policy on Involuntary Resettlement covers those displaced by the project's activities. For any sub-project involving land acquisition and associated impacts, a draft resettlement plan (RP) is required, prior to the approval of sub-project and borrowers will implement the RP in advance of sub-project implementation. The approval of the resettlement plan is subject to approval by IDA. Several issues will increase the complexity of land acquisition, such as the loss or destruction of ownership documents during the tsunami, the disappearance of physical markers of land boundaries and the huge death toll resulting in numerous inheritance issues involving vulnerable persons like widows and orphans. The safeguards framework therefore includes procedures for identifying eligible project-affected people, calculating and delivering compensation, mechanisms for land dispute grievance redress, and for protection of inheritance right of vulnerable groups.

4.10 Indigenous Peoples (World Bank OD 4.20). In the Indian context, the application of OD 4.20 is equated with the impacts to tribal population. It is unlikely that there are any tribal population in the disaster affected areas (11 coastal districts of Tamil Nadu) living in the disaster affected villages. As part of the proposed social assessment,, a potential vulnerability assessment of all affected groups is planned to ensure effective consultations and culturally appropriate benefits for each affected group. As part of this analysis, subproject preparation will assess the vulnerability of different ethnic groups in particular project contexts (in terms of potential exclusion from project benefits, negative project impacts, and the need for specific culturally compatible mechanisms for participation), and will incorporate adequate measures to address such vulnerability in project design. The requirement of separate tribal plan to address the concerns and needs of the indigenous peoples will be determined through sub-project screening or social assessment process.

## **c) Standards and Codes of Practice**

4.11 A number of Project activities are unlikely to entail any significant environment issues and as such the screening process should consist largely in the verification of inclusion of appropriate standards in the project design and contract documentation. Areas which are likely to be more effectively covered through the development of standards and codes include, but are not limited to, the following:

- Rubble/debris collections and disposal;
- Guidelines for temporary shelter site dismantling and disposal;
- Site selection criteria for new housing settlements, including alternative analysis framework;
- Guidelines new housing site clearing and preparation;

- Community environmental management plans for new settlements, including waste management practices;
- Good environmental practice in housing construction;
- Good environmental practice in aquaculture and pisciculture
- Good practice in Integrated Pest Management
- Good environmental practice in small scale construction

#### **d) Sub-Project-Level Environmental and Social Reviews**

4.12 While most Project activities are expected to have generic environmental and social issues that are manageable through standards and codes of practice, there will be Project activities that carry a higher risk of environmental and social disruptions and/or impacts. These subprojects should be the subject of environment and/or social reviews as the key management tool for identifying opportunities for lower impact project opportunities (through an alternative analysis exercise whenever possible) and/or for the identification of necessary mitigation measures in accordance with the prevailing legal framework and the Bank's safeguard policies. The terms of reference for such reviews will be developed by the PMU in cooperation with the line department (with the assistance from the Environment Department where and when possible).

4.13 Examples of subprojects which are most likely to require subproject-specific plans include, but are not limited to, the following:

- Large housing colonies, particularly in urban areas;
- Infrastructure projects such as jetties, fish processing facilities, access roads, water management structure, among others.

#### **e) Environmental and Social Management Plans**

4.14 An outcome of the above environmental and social reviews will in most cases be an environmental and/or social management plan that is sub-project specific.

### **V. Consultations and Disclosure**

5.1 This ESMF is based on a strong participatory approach in undertaking all key activities in the emergency recovery program. The implementing agencies level will make all reasonable efforts to consult relevant stakeholders (including the affected communities and NGOs, especially for subprojects with potentially significant environmental or social impacts) in the implementation of the emergency recovery activities, incorporate local community needs and resolve conflicts. The government will ensure that the affected people are consulted in a meaningful way and allowed to participate actively in the consultation process. The consultations will be carried out in a way which is appropriate for cultural, gender based and other differences among stakeholders. The implementing agencies will initiate these consultations as early as possible, and provide relevant material in a timely manner prior to consultation. The views and needs of the vulnerable groups will be given due consideration.

5.2 The ESMF and subsequent implementation plans as well as studies for investments will be disclosed in the government websites and other public places accessible to the local people and NGOs in English and Tamil.

## **Annex 1: Synopsis of Select Environmental Laws and Regulations**

This section is provided as a reminder that all activities under the proposed project must be consistent with all applicable laws, regulations, notifications that are judged to be relevant in the context of the rehabilitation and reconstruction effort. It is the responsibility of the Implementing Agency to ensure that project activities are consistent with the regulatory/legal framework, whether national, state or municipal/local. This section is not a legal opinion on the applicability of the law but serves as a guidance in the application of the law to the current project context.

### National Environmental Regulations

#### Water and Air (Prevention & Control of Pollution) Acts

Background. Water (Prevention and Control of Pollution) Act, 1974 resulted in the establishment of the Central and State Pollution Control Boards (SPCBs) whose responsibilities include managing water quality and effluent standards, as well as monitoring water quality, prosecuting offenders and issuing licenses for construction and operation of certain facilities. The SPCB is empowered to set air quality standards and monitor and prosecute offenders under the Air (Prevention and Control of Pollution) Act, 1981.

#### **Relevance to the project. For housing:**

All construction contractors need to obtain the consent-to-establish and consent-to-operate for the various plants – concrete batching, stone crushing and other plants – that they may erect for the purpose of housing construction. This should be obtained from the nearest regional offices of the SPCB. If existing plants are to be used, then these should have the required consents.

#### Environment (Protection) Act, 1986 and Environmental Impact Assessment Notification, 1994

Background. Environmental (Protection) Act, 1986 is the umbrella legislation providing for the protection of environment in the country. This Act provides for the Environment (Protection) Rules. Environmental Impact Assessment Notification, 1984 and the various amendments pertaining to this notification form a part of the regulations under this legislation.

#### **Relevant to the project. For housing:**

#### **Environment (Protection) Act, 1986 and Environmental Impact Assessment Notification, September 14, 2006**

Background. Environmental (Protection) Act, 1986 is the umbrella legislation providing for the protection of environment in the country. This Act provides for the Environment (Protection) Rules. Environmental Impact Assessment Notification, 1984 and the various amendments pertaining to this notification form a part of the regulations under this legislation.

Relevant to the project: (1) In all their plant operations (if they erect), the contractors need to meet the requirements / standards prescribed in the various Environmental Protection Rules and other environmental regulations. (2) for relocation sites, there may be need to undertake an environmental impact assessment and obtain clearance under the EIA notification. This is based on the size of the relocation site.

Fore small works:

- In all their plant operations, the contractors need to meet the requirements/standards prescribed in the various Environmental Protection Rules and other environmental regulations.

Forest (Conservation) Act, 1980

Background. Forest (Conservation) Act, 1980 pertains to the cases of diversion of forest area and felling of roadside plantation. Depending on the size of the tract to be cleared, clearances are applied for at the following levels of government:

- If the area of forests to be cleared or diverted exceeds 20ha (or, 10ha in hilly area) then prior permission of Central Government is required;
- If the area of forest to be cleared or diverted is between 5 to 20ha, the Regional Office of Chief Conservator of Forests is empowered to approve;
- If the area of forest to be cleared or diverted is below or equal to 5ha, the State Government can give permission; and,
- If the area to be clear-felled has a forest density of more than 40%, permission to undertake any work is needed from the Central Government, irrespective of the area to be cleared.

Restrictions and clearance procedure proposed in the Forest (Conservation) Act applies wholly to the natural forest areas, even in case the protected/designated forest area does not have any vegetation cover.

**Relevance to the project. For all sectors:**

If the activities are going to necessitate the diversion of forest area, then the respective line departments have to take the necessary clearances from the Forest Department / MoEF.

**Ancient Monuments and Archaeological Sites and Remains Act, 1958**

Background. According to this Act, area within radii of 100m and 300m from the "protected property" are designated as "protected area" and "controlled area" respectively. No development activity (including building, mining, excavating, blasting) is permitted in the "protected area" and development activities likely to damage the protected property are not permitted in the "controlled area" without prior permission of the Archaeological Survey of India (ASI) if the site/remains/monuments are protected by ASI or the State Department of Archaeology if these are protected by the State.

**Relevance to the project. For all sectors:**

- Activities in protected areas should not be undertaken.
- If activities are to be done in the controlled area of protected properties, then the respective line department should take the necessary permissions from the ASI.

## Coastal Regulation Zone (CRZ) Regulations, 1991 (amended upto 2002)

Issued under the Environment (Protection) Act, 1986, coastal stretches have been defined as Coastal Regulation Zone and restrictions have been imposed on industries, operations and processes within the CRZ. For regulating development activities, the coastal stretches within 500 metres of High Tide Line on the landward side are classified into four categories, namely:

- **CRZ-I:** (i) Areas that are ecologically sensitive and important, such as national parks/marine parks, sanctuaries, reserve forests, wildlife habitats, mangroves, corals/coral reefs, areas close to breeding and spawning grounds of fish and other marine life, areas of outstanding natural beauty/historically/heritage areas, areas rich in genetic diversity, areas likely to be inundated due to rise in sea level consequent upon global warming and such other areas, and (ii) Area between Low Tide Line and the high Tide Line.
- **CRZ-II:** The areas that have already been developed upto or close to the shoreline. For this purpose, "developed area" is referred to as that area within the municipal limits or in other legally designated urban areas which are already substantially built up and which have been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains.
- **CRZ-III:** Areas that are relatively undisturbed and those which do not belong to either CRZ-I or CRZ-II. These will include coastal zone in the rural areas (developed and undeveloped) and also areas within Municipal limits or in other legally designated urban areas which are not substantially built up.
- **CRZ-IV:** Coastal stretches in the Andaman & Nicobar, Lakshadweep and small islands, except those designated as CRZ-I, CRZ-II or CRZ-III.

The development or construction activities in different categories of CRZ area shall be regulated by the concerned authorities at the State/Union Territory level, in accordance with norms stipulated in the CRZ regulation and in the state / UT coastal zone management plan.

### **Relevance to the project. For housing:**

- No new construction is permitted in CRZ-I areas that are ecologically sensitive.
- In CRZ-II areas, new buildings are permitted only on the landward side of the existing (or approved) road or authorized structures.
- In CRZ-III areas, no new construction shall permitted within 200m from the High Tide Line.
- In CRZ-III areas, construction or reconstruction of dwelling units between 200m and 500m is permitted only if it pertains to traditional / customary rights.

**For fisheries:**

- No new construction is permitted in CRZ-I areas that are ecologically sensitive.
- In CRZ-II areas, new buildings are permitted only on the landward side of the existing (or approved) road or authorized structures.
- In CRZ-III, the following activities require clearance from the State Coastal Zone Management Authority: (i) Construction of boat jetties and fishing harbours - requires an EIA, (ii) boat building and repair and (iii) boat re-fuelling facilities.

**For small works:**

- No new construction is permitted in CRZ-I areas that are ecologically sensitive.
- Construction of public rain shelters, community toilets, bridges, roads and jetties are permitted in CRZ-I areas that are not ecologically sensitive and fall between the high and low tide line. But clearance is required from the State / UT Coastal Zone Management Authority.
- In CRZ-II areas, new small works are permitted only on the landward side of the existing (or approved) road or authorized structures.
- In CRZ-III areas, construction of small public works such as public rain shelters, drainage, & roads and bridges is permitted with the permission of the State / UT Coastal Zone Management Authority.

**State-level legislation – Tamil Nadu****Tamil Nadu Groundwater (Development and Management) Bill, 2000**

Background. This bill is to protect groundwater resources, to provide safeguards against hazards of its over-exploitation and to ensure its planned development and management in the state of Tamil Nadu and for matters connected therewith or incidental thereto. The bill shall empower government through the Tamil Nadu Groundwater Authority to develop, control, regulate and administer the groundwater in the state by ensuring its optimal and efficient utilisation. This also provides for conjunctive use of surface and groundwater. This bill provides for registration of new users of wells and also prohibition of sinking wells in notified areas without permit. It shall empower the authority to penalise the activities not in accordance with the act regarded as offences.

**Relevance to the project. For housing:**

TN Groundwater Authority regulates the abstraction of groundwater. Line department / contractor should obtain clearances / permissions, if required, from this Authority prior to any abstraction of groundwater.

**For fisheries:**

- TN Groundwater Authority regulates the abstraction of groundwater. Line department / contractor should obtain clearances / permissions, if required, from this Authority prior to any abstraction of groundwater.

**For small works:**

- TN Groundwater Authority regulates the abstraction of groundwater. Line department / contractor should obtain clearances / permissions, if required, from this Authority prior to any abstraction of groundwater.

*Tamil Nadu Town and Country Planning Act, 1971*

Background. Tamil Nadu Town and country planning act, 1971 is set with an objective to provide for planning the development and use of rural and urban land in the State of Tamil Nadu and for purposes connected therewith. The Act provides for the preparation and implementation of Regional Plans, Master Plans, New Town Development Plans and Detailed Development Plans and other various spatial plans. The act ensures implementation through various developmental controls and policies that would be incorporated in the spatial plans. The developmental plan is being implemented at various levels through the Directorate of Town and Country Planning. These plans form the basis for landuse regulations within the planned area.

**Relevance to the project. For housing:**

- All housing projects should be in compliance with the respective and existing development plans. Clearances / permissions should be taken from the Regional offices of the Directorate of Town and Country Planning prior to the construction of these housing projects.
- Town and Country Planning Regulations shall apply including the norms related to Floor Space Index (FSI) and Floor Area Ratio (FAR).
- Reconstruction of the authorized buildings to be permitted subject to the existing FSI/FAR norms and without change in the existing use.

**For small works:**

All small works should be in compliance with the respective and existing development plans. Clearances / permissions, if required, should be taken from the Regional offices of the Directorate of Town and Country Planning prior to the construction of these housing projects.

Tamil Nadu Panchayats Act, 1994

**Background.** The Tamil Nadu Panchayats Act, 1994 is an act to repeal and re-enact the Tamil Nadu Panchayats Act, 1958, for establishing a three tier panchayat raj system in keeping with the Seventy – third Amendment Act, 1992. It relates to the panchayats for greater participation of the people so as to make these institutions of self-government and more effective implementation of rural development programmes. The Tamil Nadu Panchayats Act provides for preparation and implementation of District development plans. Plan preparation is enforced from the Panchayat level, Panchayat union, Panchayat council, village panchayats, town panchayats, municipal councils and the municipal corporation towards overall development plans. District Planning Committee is responsible for the overall coordination of plan preparation. The act also provides for avoidance of encroachment of public lands and protection of roadside properties (including trees) belonging to the respective government departments.

**Relevance to the project. For housing:**

- All housing projects proposed in areas, which are under the jurisdiction of the town or village panchayats, should obtain their clearance / permission. The line department should ensure that this is obtained.
- All construction camps (including plant & equipment) in areas, which are under the jurisdiction of the town or village panchayats, should be established only after obtaining their clearance / permission.

**Small public works:**

All small works proposed in areas, which are under the jurisdiction of the town or village panchayats, should obtain their clearance / permission.

**Fisheries**

All workshops, e.g. boat repair yards, which are under the jurisdiction of the town or village panchayats, should be established only after obtaining their clearance / permission.

Tamil Nadu Aquaculture (Regulation) Act, 1995

**Background.** The act is meant for regulation of coastal aquaculture in Tamil Nadu. It is administered through the Directorate of Fisheries at state level and District committees at the district level. The act provides for issue of licenses for setting up of any new aquaculture farm or expansion of the same. Aquaculture farms setup before the existence of the act is also to be registered with the District Committees setup for the purpose. The act empowers Directorate of Fisheries to penalise the offenders of provisions of the act by cancellation of licenses and/or levying of fines.

**Relevance to the project.** For fisheries, aquaculture farms that are to be reconstructed or relocated should abide by the following rules:

- No aquaculture farms can be established in areas (termed as prohibited areas) such as wetlands including biodiversity rich areas mangrove swamps, migratory bird routes, breeding grounds, sanctuaries, national parks, biosphere reserves designated as protected areas or areas committed to community conservation or prediction forestry, place of heritage or place of worship, grey or dark areas in the map prepared by the Public Work Department (Groundwater).
- Certain minimum distances as 300m for villages with population less than 500, 500m for villages with population more than 500 and 2 km from any place of heritage. A buffer zone of 50 to 100m is to be maintained between aquaculture zone and non-aquaculture zone in case of sea-based aquafarms and 25 to 50m in case of estuarine-based farms.
- No aquaculture farm should extract ground water for culture purpose.

### Applicability of regulations across sectors

The following table shows the applicability of the various regulations across the four different sectors:

No.	Title of the regulations	Housing	Fisheries	Agriculture	PWD Small Works
<b>A. National legislations</b>					
	Environment (Protection) Act, 1986 and Environmental Impact Assessment Notification, 1994	√	√		√
	Forest (Conservation) Act, 1980	√	√	√	√
	Ancient Monuments and Archaeological Sites and Remains Act, 1958	√	√	√	√
	Coastal Regulation Zone (CRZ) Regulations, 1991 (amended upto 2002)	√	√		√
<b>B. State-level legislations – Tamil Nadu</b>					
	Tamil Nadu Groundwater (Development and Management) Bill, 2000	√		√	√
	Tamil Nadu Town and Country Planning Act, 1971	√			√
	Tamil Nadu Panchayats Act, 1994	√	√		√
	The Tamil Nadu Aquaculture (Regulation) Act, 1995		√		

## Annex 2: Synopsis of Select World Bank Safeguard Policies

**1.** This ESMF has been developed to support a due diligence process, to avoid causing harm or exacerbating social tensions, and to ensure consistent treatment of social and environmental issues across sectors of intervention. The ESMF should assist the Project Implementing Agencies in screening all the subprojects for social and environmental issues and/or impacts, in accordance with applicable laws regulations and the Bank’s safeguard policies, as summarized below.

**2. OP 4.01 Environmental Assessment.** Most of the proposed subprojects are likely to focus on the repair, rehabilitation, reconstruction and upgrading (where necessary) of damaged houses,

buildings, roads, railways, bridges and infrastructure of critical importance. This would include, but not be limited to, power generation and distribution, agricultural infrastructure, irrigation and drainage networks, water supply and distribution networks, sanitation facilities and rehabilitation of primary and secondary schools. Support will also be provided for mitigation measures related to reversing the adverse impacts of the tsunami on coastal eco systems and reef system.

**3.** Considering the nature and magnitude of potential environmental impacts from relatively limited scale and magnitude of reconstruction works, the proposed operations are likely to be classified as category 'B'. The requirement to carry out an Environmental Analysis as part of project preparation can be waived but, for subprojects with potential adverse impacts, a limited Environmental Analysis will be done during project implementation. At the same time, prior to appraisal the implementing agency will agree to apply the following minimum standards during implementation: inclusion of standard environmental codes of practice (ECOP) in the repair and reconstruction bid documents of all subprojects; review and oversight of any major reconstruction works by specialists; implementation of environmentally and socially sound options for disposal of debris; and provisions for adequate budget and satisfactory institutional arrangements for monitoring effective implementation.

**4. OP 4.12 Involuntary Resettlement.** The need for involuntary resettlement or land acquisition in specific subproject areas will only be known during project implementation, when site-specific plans are available. Therefore subprojects will be screened for applicability of the resettlement policy. In view of the emergency nature of the operations, IDA will, in applicable instances, require a draft resettlement plan for sub-projects prior to approval of corresponding sub-project. The approval of the resettlement plan is subject to approval by the IDA. Several issues will increase the complexity of land acquisition - the loss or destruction of ownership documents during the tsunami, the disappearance of physical markers of land boundaries and the huge death toll resulting in numerous inheritance issues involving vulnerable persons like widows and orphans. The safeguards framework will therefore include procedures for identifying eligible project-affected people, calculating and delivering compensation, mechanisms for land dispute grievance redress, and for protection of inheritance right of vulnerable groups.

**5. OD 4.20 Indigenous Peoples.** In the Indian context, the application of OD 4.20 is equated with the impacts to tribal population. It is unlikely that there are any tribal population in the disaster affected areas (11 coastal districts of Tamil Nadu) living in the disaster affected villages. However, the issue of ethnic and religious affiliation is a larger factor in considering the vulnerability. In light of the above situation, a potential vulnerability assessment of all affected groups is planned to ensure effective consultations and culturally appropriate benefits for each group, instead of focusing only on groups defined as "indigenous peoples". As part of this analysis, subproject preparation will assess the vulnerability of different ethnic groups in particular project contexts (in terms of potential exclusion from project benefits, negative project impacts, and the need for specific culturally compatible mechanisms for participation), and will incorporate adequate measures to address such vulnerability in project design.

**6. OPN 11.03 Cultural Properties.** The emergency operation may pose limited risks of damaging cultural property, assuming that they will not include large-scale excavations, movement of earth or demolition. Furthermore, projects and subprojects will be reviewed for their potential impact on cultural property and clear procedures will be required for identification, protection of cultural property from theft, and treatment of discovered artifacts, and will be included in standard bidding documents. While not damaging cultural property, subproject preparation may later identify and include assistance for preservation of historic or archeological sites. If these opportunities occur, cultural property management plans would be prepared for those subprojects.

**7. OP 4.04 Natural Habitats.** The reconstruction of housing is likely to require a large amount of land. The Project will not support sub-projects that involve conversion of critical natural habitats such as in Forest Reserves, Wildlife Reserves, National Parks or Sanctuaries. Site selection criteria for new housing colonies, in both rural and urban areas, should therefore include appropriate provisions for safeguarding valuable natural habitats.

### **Annex 3: Environmental Principles of Reconstruction**

1. This section proposes key principles to be considered in the design and implementation of an environmentally sustainable rehabilitation and reconstruction program for tsunami-affected areas. These principles propose a framework for considering issues, remedial options and opportunities to enhance environmental management and outcomes associated with man-made and natural systems.

2. Mainstreaming environmental considerations into sectoral interventions. There are environmental dimensions to practically every sector affected by the tsunami. This requires the consideration of environmental issues in all sectoral reconstruction planning and action, particularly the siting of temporary and permanent settlements. Actions related to reconstruction and recovery should seek to ensure that the sustainability of coastal and marine ecosystems is not compromised, and is ideally enhanced as the goods and services they provide underpin the livelihoods and immediate welfare of large coastal populations. Wherever possible, 'soft' options with fewer adverse environmental impacts should be favored over 'hard' options that may involve changes to coastal hydrology and other natural processes.

3. Learning lessons from the tsunami event. Tsunamis occur relatively infrequently in the Indian Ocean. The present situation offers an opportunity to assess and monitor the resilience of natural and modified ecosystems to such extreme events, which in turn will help plan mitigation of the potential impacts of a range of natural risks and hazards, which affect coastal areas periodically. Such monitoring can also help plan against the anticipated adverse impacts of climate change. In the short-term, such monitoring is key to identifying environmental damage and prioritizing environmental restoration

4. Need for a comprehensive coastal zone management strategy. Such a strategy would reflect the dynamic nature of the coastal and marine environment and support multiple-use objectives, without compromising the sustainable supply of environmental goods and services. These objectives would reflect livelihood needs, reduce vulnerability to natural hazards, and the conservation of biodiversity and ecological services.

5. Focus on localized site-specific solutions. The extent of the damages along the coastline and the fear of a tsunami recurring must not lead to uniform strategies being applied across the board without full consideration of the different variables such as climatic factors, bathymetry and coastal topography associated with vulnerability to natural hazards. Economic, environmental, social and cultural factors must all be taken into account when developing disaster risk mitigation strategies, and solutions must be anchored in the prevailing circumstances of local situations.

## Annex 4: Matrix of Environmental Management Measures

Sector	Sub-project type	Activities envisaged	Environmental issues	Environmental management measures
Housing	<ul style="list-style-type: none"> <li>Construction of new temporary shelters, rehabilitation of existing shelters</li> </ul>	<ul style="list-style-type: none"> <li>Planning</li> <li>Design</li> <li>Repair and/or construction of new shelters</li> </ul>	<ul style="list-style-type: none"> <li>Improper siting, design, construction, maintenance</li> <li>Poor sanitation</li> <li>Water availability/quality</li> <li>Temporary shelter site closure and clean-up</li> </ul>	<ul style="list-style-type: none"> <li>Consultation</li> <li>Introduction of Community Environmental Management Plans (CEMP)</li> <li>Guidelines for dismantling and decommissioning of relief camps and temporary shelter sites</li> </ul>
	<ul style="list-style-type: none"> <li>Rehabilitation of damaged housing</li> </ul>	<ul style="list-style-type: none"> <li>Removal of debris</li> <li>Planning</li> <li>Design</li> <li>Repair and rehabilitation</li> </ul>	<ul style="list-style-type: none"> <li>Debris removal and disposal</li> <li>Continued exposure to hazard and risks</li> </ul>	<ul style="list-style-type: none"> <li>Consultation</li> <li>Guidelines for collection and debris disposal</li> <li>Use of disaster-resistant techniques and materials (appropriate construction standards)</li> <li>Introduction of CEMPS</li> </ul>
	<ul style="list-style-type: none"> <li>Building new housing on community scale (largely in rural areas)</li> </ul>	<ul style="list-style-type: none"> <li>Planning</li> <li>Construction of new houses</li> </ul>	<ul style="list-style-type: none"> <li>Debris removal and disposal</li> <li>Site location could be inappropriate (e.g. very vulnerable to disasters)</li> </ul>	<ul style="list-style-type: none"> <li>Application of site selection criteria</li> <li>Guidelines for site clearance and preparation</li> <li>Consultation and community involvement in planning, design and</li> </ul>

				<ul style="list-style-type: none"> <li>• Incorporation of more disaster-resistant building codes for design and construction</li> <li>• Good environmental management in housing construction</li> <li>• Introduction of CEMPs</li> </ul>
	<ul style="list-style-type: none"> <li>• Building new housing on large-scale (such as multilevel building in urban areas), including new townships</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Detailed Designs</li> <li>• Construction</li> </ul>	<ul style="list-style-type: none"> <li>• Site location could be inappropriate (e.g. very vulnerable to disasters, aggravate political conflicts)</li> <li>• Public health and nuisance concerns from improper water supply, sanitation and waste disposal</li> </ul>	<ul style="list-style-type: none"> <li>• Application of site selection criteria</li> <li>• Guidelines for site clearance and preparation</li> <li>• Consultation and community involvement in planning, design and construction</li> <li>• Good environmental management in housing construction</li> <li>• Incorporation of more disaster-resistant building codes for design and construction</li> <li>• Introduction of CEMPs</li> <li>• Subproject specific environmental and social assessment</li> </ul>
<b>Restoration of Livelihoods:</b>	<ul style="list-style-type: none"> <li>• Repairs to small harbours</li> </ul>	<ul style="list-style-type: none"> <li>• Repair of small harbour infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Construction waste management</li> </ul>	<ul style="list-style-type: none"> <li>• Subproject-specific environmental</li> </ul>

Fishing	(3 or 4 sites)	to allow for the resumption of boat movement and fish processing activities	<ul style="list-style-type: none"> <li>Water pollution and turbidity</li> </ul>	and social management plan
	<ul style="list-style-type: none"> <li>Clearing of bar mouths</li> </ul>	<ul style="list-style-type: none"> <li>Removal of sand accretion and possibly some</li> </ul>	<ul style="list-style-type: none"> <li>Disposal of sand</li> <li>Disposal of dredged materials</li> <li>Water pollution and turbidity</li> </ul>	<ul style="list-style-type: none"> <li>Guidelines on removal of sand in harbours</li> <li>Subproject-specific environmental and social management plan</li> </ul>
	<ul style="list-style-type: none"> <li>Aquaculture infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Rehabilitation of farms (needs more details)</li> </ul>	<ul style="list-style-type: none"> <li>Direct discharge of used water into sea without proper treatment.</li> </ul>	<ul style="list-style-type: none"> <li>Proper waste water treatment plans</li> </ul>
Restoration of livelihoods: Agriculture, Horticulture and Livestock	<ul style="list-style-type: none"> <li>Agriculture, horticulture</li> </ul>	<ul style="list-style-type: none"> <li>restoration of damaged land, farm ponds and wells</li> <li>Livestock provision and management</li> </ul>	<ul style="list-style-type: none"> <li>Disposal of removed debris and deposited sea sludge</li> <li>Use of chemicals to recondition the soil for agricultural usage</li> </ul>	<ul style="list-style-type: none"> <li>Appropriate disposal of sea sludge</li> <li>Pest management plans/Integrated pest Management approaches</li> <li>Others to be identified and developed.</li> </ul>
Small public buildings and public works	<ul style="list-style-type: none"> <li>Repair of existing roads</li> </ul>	<ul style="list-style-type: none"> <li>Repair of existing roads</li> </ul>	<ul style="list-style-type: none"> <li>Inadequately rehabilitated borrow pits</li> <li>Quality of construction</li> </ul>	<ul style="list-style-type: none"> <li>Dust controls by water sprayers during construction</li> <li>Adequate Personal Protective Equipments (PPE) during construction.</li> <li>Tree</li> </ul>

				<p>both sides of road to control air and noise pollution should be considered.</p> <ul style="list-style-type: none"> <li>• Erosion protection Borrow pit rehabilitation</li> <li>• Provision of cross &amp; side drains</li> </ul>
	<p>Repair and reconstruction of small public buildings (school, halls, cyclone shelters)</p>			<ul style="list-style-type: none"> <li>• Application of site selection criteria</li> <li>• Guidelines for site clearance and preparation</li> <li>• Consultation and community involvement in planning, design and construction</li> <li>• Incorporation of more disaster-resistant building codes for design and construction</li> <li>• Good environmental management in housing construction</li> <li>• Introduction of CEMPs</li> </ul>
	<p>Restoration of damaged river and drain banks</p>			
	<p>Restoration and/or plantation of mangrove shelter belts (pilot basis)</p>			

## **Annex 5: Checklist for Screening of Land Acquisition and Resettlement Impacts**

This Form is to be used by the Safeguard Focal Point (SFP) at the Sector/District level in Screening Subproject Applications in respect of PAPs/land acquisition. This information will be submitted as soon as sub-project is identified. Based on the impacts, the need for preparation of sub-project specific Resettlement Plan will be determined.

- a) Number of Subproject:
- b) Proposing Agency:
- c) Subproject Location (include map/sketch):
- d) Sub-project Objective:
- e) Expected Subproject Activities:
- f) Infrastructure to be Constructed:
- g) Infrastructure to be Rehabilitated:
- h) Estimated Cost:
- i) Proposed Date of Commencement of Work:
- j) Technical Drawing/Specifications Reviewed (circle answer): Yes \_\_\_ No \_\_\_
- k) Major adverse impacts expected and mitigation proposed:
- l) Will the subproject involve land expropriation or demolition of existing structures? Yes/No, If yes, provide details in Land acquisition Assessment sheet 5(a)
- m) Current land uses of the above affected lands (use)\_\_\_\_\_ (ha)\_\_\_\_\_
- n) Will the subproject negatively impact livelihoods Yes/No (If yes, describe impact separately):
- o) Whether any common facilities or others structures affected due to acquisition of above lands;
- p) Indicate whether any scheduled caste/tribe population is affected or living in the affected villages. Yes/No (If yes, describe the group)
- q) Type of Plan required: (a)Resettlement Plan..... (b) Abbriated Plan..... ( C) No Plan required.....(d) Whether Tribal Plan is required: Yes/ No

Signed by Sector/District ESMF coordinator: Name:\_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Signed by ESMF Coordinator at PMU

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

## **Annex 5(a): Land Acquisition Assessment Data Sheet**

**(To be used to record information in case of requirement of Use of land for sub-projects)**

1. Likely land requirement for the sub-project ( Ha):

(a) Government\_\_\_\_\_ha (b) Private \_\_\_\_\_ha (c) Temple Land\_\_\_\_\_ha

(d) Gram Panchyat\_\_\_\_\_ha ( e) any other-----ha

2. Method of land acquisition (Land Acquisition Act, Private Negotiations or voluntary donation):

3. Locations:

4. No of land owners to be affected:

5. No. of structures affected:

6. Current uses of the affected lands:

7. Users:

a) Number of Customary Claimants:

b) Number of Squatters:

c) Number of Encroachers:

d) Number of Owners:

e) Number of Tenants:

f) Others (specify): \_\_\_\_\_ Number:

g) Common facilities affected : (Describe)-----

8. Details of standing crops to be affected:

9. Any other properties such as wells or trees, etc. to be affected:

10. In case of voluntary donation, sufficient proof must be obtained ((notarized or witnessed statements).

Provisions of the government order in this regard will be made known to the private land owners in case of negotiations.

## **Annex 6: Guidelines for Preparation of Land Acquisition and Involuntary Resettlement Plans**

1. Land acquisition and involuntary resettlement will be kept to a minimum, and will be carried out in accordance with these guidelines. Subproject proposals that would require acquisition of productive lands and demolition of structures will be carefully reviewed to minimize or avoid their impacts through avoidance or minimization process. The principal objectives of resettlement are as follows:

- a) Involuntary resettlement will be avoided or minimized by exploring all possible options that have least impacts in terms of land acquisition and resettlement ;
- b) In unavoidable circumstances, the affected persons irrespective of their legal status will be assisted in their efforts to improve their livelihoods and standards of living or at least restore them in real terms to the pre-affected levels; and,
- c) The compensation and assistance to the project affected people are based on the principle that people shall not suffer net losses as a result of the project.

### **Eligibility for Benefits**

2. Project Affected Persons (PAPs) are defined as persons whose livelihood or shelter is directly affected by the project activities due to acquisition of the land owned or used by them. PAPs deemed eligible for compensation are:

- (a) Those who have formal legal rights to land, water resources or structures/buildings, including recognized customary and traditional rights;
- (b) those who do not have such formal legal rights but have a claim to usufruct rights rooted in customary law; and
- (c) those whose claim to land and water resources or building/structures do not fall within (a) and (b) above, are eligible to resettlement assistance to restore their livelihood.

### **Involuntary Resettlement Support Principles**

3. The project implementation agencies will ensure timely provision of compensation and resettlement assistance to the project affected peoples. The land acquisition process will be a voluntary, transparent and negotiated process where the land owner has the right to refuse to sell the land. There is no involuntary resettlement involved in tis project.

- a) Individuals may elect to voluntarily contribute land or assets provided the persons making such contributions do so willingly and are informed that they have the right to refuse such contributions;
- b) in case of physical relocation, alternative provisions for replacement of houses with adequate basic civic amenities at the resettlement sites.

## Support Principles for Different Types of Impacts.

4. The support principle for broad category of impacts is summarized below.

Type of Impact	Support Principles
Loss of land and immovable assets	<ul style="list-style-type: none"> <li>The Government will compensate the lost assets at their replacement cost</li> <li>The option of voluntary donation is available to the asset owners</li> </ul>
Loss of House and Shelter	<ul style="list-style-type: none"> <li>Every effort will be made by the Government to ensure that new housing is available before people are required to relocate.</li> <li>If resettlement sites are developed close to the existing villages the local "host population" will also be consulted about their views and needs, and be given appropriate support to reduce any negative impact caused by an influx of new people.</li> </ul>
Loss of Livelihood or Income Opportunities	<ul style="list-style-type: none"> <li>Assistance will be given to the affected population to reestablish their livelihood and income, and to compensate for temporary losses.</li> </ul>
Group Based Development Opportunities	<ul style="list-style-type: none"> <li>Through designs, provision of infrastructure, and other support mechanisms, the project will replace lost assets and minimize any negative impact on groups, particularly groups that are considered vulnerable.</li> </ul>
Unidentified impacts	<ul style="list-style-type: none"> <li>Unforeseen impacts will be documented and mitigated based on the provisions of the policy applicable for the project.</li> </ul>

## Land Acquisition and Payment of Compensation

5. Land acquisition is likely to take place through combination of several methods. Identification of available vacant government lands will be most preferred method. In addition, the lands belonging to temples trusts, Gram Panchyats, etc. will also be explored. In some cases the land owners or Gram Panchyats or temples may come forward for voluntary donation of lands. The private land acquisition will be made through private negotiations or using the land acquisition process transparently with the willingness of both seller and buyer. The expected price by the seller should be quoted, the guideline value and the market value for the site to be informed to the land owner by the District Administration. Based on the above support principles, the individual entitlements will be proposed and included in the RP.

6. Negotiations will be used for acquiring the private lands. The guideline values used for registration of sale transactions or the market values will be used as a basis for finalizing the compensation under private negotiations. The District Level Negotiation Committee is empowered to purchase land through private negotiations up to a maximum of 150% of the market value or guideline value whichever is lower without any monetary ceiling. If the required lands cannot be purchased even after giving 150% of the market value or guideline value whichever is lower, Collectors may recommend for higher compensation to the Empowered Committee constituted for the ETRP/TEAP with adequate justification for taking a decision. The final amount of compensation will depend upon the negotiated amount. The

details of entitlements for various resettlement related impacts are provided in the Annex 9. In case of any voluntary donation of land appropriate agreement between the land owner and implementing agency will be executed to avoid any claims of compensation at a later stage

### **Consultation Process**

7. Implementing agencies will ensure that all occupants of land and owners of assets located in a proposed subproject area are consulted. Community meetings will be held in each affected villages to inform the local population of their rights to compensation and options available in accordance with these guidelines.

### **8. Monitoring Indicators for Land Acquisition and Payment of Compensation**

- Number of sites where Private land acquisition is done and compensation is fully paid prior to the commencement of construction
- Site wise proportion of land acquisition is completed
- Proportion of number of land owners received compensation fully
- Proportion of land owners received compensation in compliance with provisions of ESMF

### **9. Sub- Project Approval**

10. In the event that a subproject involves land acquisition against compensation or loss of livelihood or shelter, the implementing agency shall:

(a) Not approve the subproject until a satisfactory RP has been prepared and shared with the affected person and the local community; and

(b) Not allow works to start until the compensation and assistance has been made available in accordance with the framework.

### **Preparation of Resettlement Plans (RPs)**

12. Having identified the potential impacts of the relevant sub-projects, the next step is to develop action plans to mitigate the impacts. The RPs provides a link between the impacts identified and proposed mitigation measures to realize the objectives of involuntary resettlement. The RPs will take into account magnitude of impacts and accordingly prepare a resettlement plan that is consistent with this framework for Bank approval before the sub-project is accepted for Bank financing.

a) Sub-projects that will affect more than 200 people due to land acquisition and/or physical relocation and where a full Resettlement Plan (RP) must be produced. Such plan will be prepared as soon as the sub-project is finalized and cleared prior to approval of the corresponding civil work bid document.

(b) Sub-projects that will affect less than 200 people will require an abbreviated RP;

(c) The above plans will be prepared as soon as subproject is finalized, prior to Bank's approval of corresponding civil works bid document; and,

(d) Projects that are not expected to have any land acquisition or any other significant adverse social impacts; on the contrary, significant positive social impact and improved livelihoods are exempted from

such interventions.

## **Annex: 6(a): Indicative outline of Resettlement Plans**

The scope and level of detail of the resettlement plan vary with the magnitude of land acquisition and complexity of resettlement. The plan is based on up-to-date and reliable information about (a) the proposed compensation payment and resettlement of adversely affected groups, and (b) the legal issues involved in resettlement. The resettlement plan covers the elements below, as relevant. When any element is not relevant to project circumstances, it should be noted in the resettlement plan.

(i) **Description of the sub- project.** General description of the project and identification of the project area.

(ii) **Potential impacts.** Identification of: (a) the project component or activities that give rise to land acquisition and resettlement (b) the alternatives considered avoiding or minimizing land acquisition and resettlement; and (c) the mechanisms established to minimize resettlement, to the extent possible, during project implementation.

(iii) **Objectives.** The main objectives of the resettlement program.

(iv) **Results of census socioeconomic surveys.** The findings of surveys to be conducted in the early stages of project preparation and with the involvement of potentially affected people, including:(a) the results of a census survey covering; (b)current occupants of the affected area to establish a basis for the design of the compensation payment and resettlement program and to exclude subsequent inflows of people from eligibility for compensation and resettlement assistance;(c)standard demographic and socio-economic characteristics of affected households,(d) the magnitude of the expected loss—total or partial—of assets, and the extent of impacts, physical or economic;(e) public infrastructure and social services that will be affected; and(f)social and cultural characteristics of affected communities, including a description of formal and informal institutions (e.g., community organizations, ritual groups, nongovernmental organizations (NGOs) that may be relevant to the consultation strategy and to designing and implementing the resettlement activities.

(v). **Eligibility.** Definition of affected persons and criteria for determining their eligibility for compensation and other resettlement assistance, including relevant cut-off dates.

(vi). **Valuation of and compensation for losses.** The methodology to be used in valuing losses to determine their replacement cost; and a description of the proposed types and levels of compensation under local law and such supplementary measures as are necessary to achieve replacement cost for lost assets

(vii). **Resettlement measures.** A description of the packages of compensation and other resettlement measures that will assist each category of eligible affected persons to achieve the objectives of the policy. In addition to being technically and economically feasible, the resettlement packages should be compatible with the cultural preferences of the displaced persons, and prepared in consultation with them. Any measures necessary to prevent land speculation or influx of ineligible persons at the selected sites. The provisions of housing, infrastructure (e.g., water supply, feeder roads), and social services (e.g., schools, health services); plans to ensure comparable services to host populations. Additional measures to ensure that such vulnerable groups as indigenous people, ethnic minorities, the landless,

and women are adequately represented.

(viii) **Income Restoration Measures.** Wherever the livelihoods are affected, appropriate measure for improvement or restoring of livelihoods including assistance during the transition period will be proposed which should be compatible with the cultural preference and skill of the affected people.

(ix) **Community participation.** Involvement of affected people for consultation with and participation of in the preparation and implementation;(b)a summary of the views expressed and how these views were taken into account in preparing the resettlement plan;(c) a review of the alternatives presented and the choices made by affected persons wherever options available to them, including choices related to forms of compensation and resettlement assistance. and

(x) **Integration with host populations.** Measures to mitigate the impact of resettlement on any host communities, including: (a)consultations with host communities and local governments;(b)arrangements for prompt tendering of any payment due the hosts for land or other assets provided to resettlers;(c)arrangements for addressing any conflict that may arise between resettlers and host communities; and (d) any measures necessary to augment services (e.g., education, water, health, and production services) in host communities to make them at least comparable to services available to resettlers.

(xi). **Implementation Arrangements:** The description of agencies responsible for implementation of compensation payment and resettlement activities should be outlined and an assessment of the institutional capacity of such agencies and NGOs; and any steps that are proposed to enhance the institutional capacity of agencies and NGOs responsible for resettlement implementation.

(xii). **Grievance procedures.** Affordable and accessible procedures for redressal of disputes arising from resettlement; such grievance mechanisms should take into account the availability of judicial recourse.

(xiii) **Implementation schedule.** An implementation schedule covering all payments of compensation and other applicable resettlement activities from preparation through implementation, including target dates for the achievement of expected benefits to resettlers and hosts and terminating the various forms of assistance. The schedule should indicate how the resettlement activities are linked to the implementation of the overall project.

(xiv) **Costs and budget.** Tables showing itemized cost estimates for all compensation payments and associated resettlement activities other contingencies; timetables for expenditures; sources of funds; and arrangements for timely flow of funds, and funding for land acquisition and resettlement should be described.

(xv). **Monitoring and evaluation.** Arrangements for monitoring of compensation payments and resettlement activities by the implementing agency, supplemented by independent monitors as considered appropriate by the Bank, to ensure complete and objective information; performance monitoring indicators to measure inputs, outputs, and outcomes for resettlement activities; evaluation of the impact of resettlement for a reasonable period after all resettlement and related development activities have been completed; using the results of resettlement monitoring to guide subsequent implementation.

## **Abbreviated Resettlement Plan**

An abbreviated plan covers the following minimum elements

- (a) a census survey of displaced persons and valuation of assets;
- (b) description of compensation and other resettlement assistance to be provided;
- (c) consultations with displaced people about acceptable alternatives;
- (d) institutional responsibility for implementation and procedures for grievance redress;
- (e) arrangements for monitoring and implementation; and
- (f) a timetable and budget.

## **Annex 7: List of Ineligible Activities**

Subprojects with any of the attributes listed below will be ineligible for support under the proposed project.

<b>Attributes of Ineligible Subprojects</b>
<ul style="list-style-type: none"><li>• Any project activity with the potential for significant conversion or degradation of critical natural habitats. Including, but not limited to, any activity within:<ul style="list-style-type: none"><li>• Declared Forest Reserves</li><li>• Wildlife Reserves;</li><li>• National Parks and Sanctuaries;</li><li>• CRZ I</li></ul></li><li>• Any project that is not consistent with applicable laws and regulations.</li><li>• Any project with the potential for significant damages to cultural property.</li><li>• Any project that is not consistent with the project description at time of project negotiations, unless subsequently agreed to with the Bank along with the appropriate level of environmental and social management.</li><li>• Any project or activity involving the procurement of pesticides not allowable under Bank guidelines</li></ul>

## **Annex-8: Land Acquisition and Monitoring Sheet**

### **(Tamil Nadu)**

1. Name of the sub-project:
2. Village, Panchayat and Taluk:
3. Name of the Land Owner and Survey Number:
4. Area of land acquisition (Ha):
5. Type of Land: (a) Irrigated (b) Non-irrigated c) Homestead (d) Temple (e) Donated  
(f) Barren (e) other (specify)
6. (a) Market value (in Rs/Ha): ..... (b) Guideline Value..( in Rs/Ha).....  
(c) Date of latest revision of guideline value:.....  
(d) Negotiated Price (in Rs/Ha)..... (e) Total compensation Paid..... (.....% of guideline value)
7. Date of Negotiations:
8. Date of registration of sale deed:
9. Payment Details : (Cheque No, Date etc.)
10. Details of standing crops affected and compensation payment details
11. Details of any other properties affected such as wells or trees, structures affected and compensation payment details .....
12. Area of left over land holding.....
13. Option for surrendering left over land if it is residual

14. Long term rehabilitation measures ( if required).....

15. Remarks.....

Signature of District/Sector ESMF Co-coordinator

## **Annex 9 : Entitlement Matrix for Land Acquisition and resettlement related Impacts**

<b>Impact Category/Entitlement</b>	<b>Remarks</b>
<b>I. Loss of Private Property</b>	
<b>(a) Loss of Land (agricultural or otherwise)</b>	The minimum compensation will be available as described in Para 6 of <b>annex 6</b> .  The private land acquisition will be made through a negotiation process transparently with the willingness of both seller and buyer.
<b>(b) Loss of residential, commercial structures and Impacts to standing crops and other properties</b>	The private land acquisition will be made through a negotiation process transparently with the willingness of both seller and buyer.
<b>(II) Unidentified Impacts</b>	
Unforeseen impacts will be documented and mitigated based on the provisions of the policy applicable for the project	

## **Appendix 10 : Social Aspects – Roles & Responsibilities**

### **District Collector and District Implementation Unit:**

At the district level, the project would be implemented under the overall supervision and coordination from the office of the District Collector by the District Implementation Unit to be formed by the Rural Development and Panchayat Raj department with staffing Executive Engineers, Asst. Executive Engineers, Asst. Engineers from the existing complement of staff, Block Development Officer and other staff who would in addition to the core engineering functions be also assigned tasks related to environmental monitoring, social development etc. as well as hiring additional professionals in disciplines that are not available. To ensure effective involvement of the beneficiary communities particularly in the housing construction activity and strengthening their

interface with contractors, line departments, revenue department etc., the District Collector shall hire the services of a **partner Non-Governmental Organization (NGO)** as per clear terms of reference to undertake this task that include the following:

### **Independent validation of beneficiary selection:**

A process of independent validation of beneficiary selection is in place to confirm that all vulnerable houses and beneficiaries have indeed been included, none left out and that no ineligible houses or beneficiaries have been included. GoTN has confirmed that the first round of independent validation based on publication of list of beneficiaries and receipt of grievances related to exclusion of beneficiaries/houses has been completed and has resulted in an addition of around 5000 additional beneficiaries/houses as of May 24, 2007. The NGOs contracted for assisting with community consultation as part of their first task are expected to undertake a confirmatory review of this validation process by organizing Gram Sabha/habitation level meetings at all the participating habitations and confirming that the revised list provided by PIU/PMU is indeed final. Any changes in these lists would be reported to the concerned District Collector offices who in turn will confirm and report the same to PIU/PMU.

### **Grievance redress mechanism:**

Communities have been made aware of the grievance redress mechanism in place at the village level Gram Sabha as well as the level of the concerned District Collector for them to make use of, should they wish to seek redress regarding having been excluded despite being technically "eligible" or in the case of inclusion of ineligible houses/beneficiaries in the list. The list of eligible houses and beneficiaries has been widely **publicized** by the District Collector at public places accessible to all concerned villagers and all grievances/requests for review would be received formally and reviewed for due consideration by a widely publicized deadline. Gram Sabha meetings held with the attendance of a majority of community members in each of the habitations shall formally confirm in writing that all eligible houses and beneficiaries have been included and these formal agreements shall have the signatures of all those who attended these meetings and particularly including each of the selected beneficiaries. A copy of these agreements for each participating habitation will be sent to the PIU by the DIU/District Collector by an agreed deadline.

The established system for grievance redress at the District Collector's office would also be available for beneficiaries to report any deviations from the proposed implementation mechanism that they have been made aware of including aspects such as design of houses, construction quality, use of appropriate materials as per design, timely construction, delays in implementation etc..

### **Land titles in the names of beneficiaries:**

As per GoTN procedures followed for ETRP, the **title for the land** on which these houses are to be constructed should be clearly in the joint names of the woman and man from the selected household and the responsibility of having these land titles entered into the land records by a mutually agreed deadline shall be that of the concerned District Collector. After completion of the land titling and land record entry in the name of the concerned beneficiaries, the District Collector shall be responsible for ensuring that a final list of beneficiaries with their land title details is sent to PIU/PMU by an agreed deadline to be worked out in coordination with PIU/PMU prior to beginning the process of preparing housing construction contract packages.

### **Land acquisition procedures:**

In cases where **land acquisition** is called for including in cases where relocation of selected beneficiaries to alternate sites is necessitated on account of non-availability of land, the District Collector shall ensure and confirm that due process as per GoTN Government Orders for such land acquisition and Bank Social Safeguard Policy on Resettlement and Rehabilitation (OP 4.12) are duly followed and those from whom the land has been acquired have been compensated as per norms laid out in GoTN Government Orders in this regard by a mutually agreed date. The District Collector shall send details of land acquisition confirming completion of all procedures related to the acquisition as well as compensation of those from whom the land has been acquired by a mutually agreed date prior to beginning the process of preparing housing construction contract packages.

The Project Implementation Unit (PIU) at the State level Rural Development and Panchayati Raj Department shall be strengthened with the contracting of a Social Development Specialist whose role shall be to ensure that Social Development issues outlined in the sections above such as detailed beneficiary consultations, contracting of NGOs/Social Development Consultants, contracting of Social Development Specialists where necessary at the District Collector's office along with systems for ensuring timely and land acquisition and land titling in accordance with GoTN procedures and with due attention to Bank Social Safeguards policy OP 4.12 on Resettlement and Rehabilitation are strictly followed.

### **Coordination of multiple disciplines for effective project implementation:**

To ensure **coordinated functioning** of the engineering and environmental professional functionaries of the District Implementation Unit with the revenue department , contracted NGO/Social Development Consultant, the Social Development Specialist contracted at the Collector's level where necessary etc., once these functionaries are in place, the project shall hold that a one day workshop to clarify roles and responsibilities of all these entities and functionaries is conducted at every district under the Chairmanship of the District Collector and the sequence of project implementation activities with detailed schedule and action plan as per the Operational Manual is discussed and agreed upon for the concerned district. The monitoring and management information system to be designed will then help the District Collector, the PIU and PMU to monitor if indeed actual implementation is following the agreed schedule and action plan

### **Baseline survey and Socio-economic impact assessment:**

A detailed baseline survey focusing on the socio-economic status of the housing construction beneficiaries would be undertaken using a format to be developed by the PIU/PMU. The beneficiary survey form with photograph of the beneficiary in front of the existing house that has been prepared for the process of beneficiary identification shall be strengthened with collection of information on socio-economic parameters and this data shall be computerized for later use in the form of periodic socio-economic impact assessments

### **Responsibilities and reporting arrangements for Social specialists proposed in PIU and PMU**

1	Selection of NGOs as the facilitating agency for VRCC project	Selection of NGOs and preparation of ToR for NGO works and aspects to be covered	Assist PIU in selection of NGOs in the districts
2	Land required for the vulnerable housing – Relocation sites	Identification of land with NGO and Revenue Officials	Assessing the suitability of the site and livelihood of the beneficiaries and PAFs
3	Compensation for Land, Structure, entitlement cost, cost for relocation and resettlement	Done by Revenue Officials, DIUs Following the procedure mentioned in the ESMF	Examining the process and document inline with WB and forward to WB
4	Grievance redressal mechanism	Constitute body as in the ESMF and grievance redressal to be conducted periodically at DIUs. Monitored by PIU	Unusual grievances would be discussed in the PMU in consultation with PIU for solving
5	Baseline socio-economic survey PAFs	Engaging NGOs or Consultants for the study	Developing ToR and Monitoring the study in coordination with PIU & DIUs
6	Assessing the needs of the host community	NGOs and DIUs to be trained by PIU staff and assessing the needs of the host community and fulfill the same up to the mark	PMU would involve in this matter if any impediments involved
7	Identification of Right Beneficiaries	NGOs in coordination with Panchayat elected body and Gram Sabha	Assess the selection criteria
8	Screening of Land Acquisition and Resettlement Impacts Annex 5 of ESMF	To be collected by NGOs and DIU in the field	Compiled by PIU and PMU and send to WB
9	Land Acquisition Assessment Data Sheet Annex 5 (a) of ESMF	Do	Do
10	Monitoring NGOs	Progress report by NGOs and DIUs to the PIU	Assessing and Compiling data and providing training to the DIU and NGOs. Random checking through periodical field visits
11	Awareness and orientation Workshops to the NGOs	Personnel of PIU and PMU would conduct	
15	Preparation of Indicative Resettlement Plans for the PAFs as in the ESMF	Done through DIUs and NGos	Guidance and assessment by PMU and undertake field visits
16	Organize meetings and reviews	with District Implementation Units and NGOs	With DIUs and PIU staff members

17	Responsible for ensuring compliance with ESMF with respect to preparation and implementation of plans related to social impacts.	PIU and PMU
18	Coordinate preparation of relevant action plans to implement the outcomes of social Assessment process.	PIU and PMU

## **Environmental Management Framework ( VRCC )**

### **Introduction**

### **In-situ construction of vulnerable houses**

### **Relocation of vulnerable houses and their construction**

### **Other infrastructure**

### **Habitation planning & Capacity-building initiatives**

### **Community / Stakeholder Consultations**

### **Disclosure**

### **Monitoring & Reporting**

### **District Wise Number of Vulnerable Houses Proposed for Reconstruction**

### **Site Selection – Environmental Checklist for Relocation Sites**

### **Environmental Requirements During Construction of Vulnerable Houses**

### **Environmental Requirements During Construction of Evacuation Routes / Roads**

### **Environmental Requirements During Construction of Mutli-Purpose Shelters**

### **EMF Legal Compliance Reporting Format**

### **EMF Compliance Reporting Format**

## Abbreviations & Acronyms

# Introduction

## 1.1 Project Background

Tamil Nadu has a long coastline of 1076 km. constituting 12% of the coastline of India comprising 12 coastal districts, 25 coastal blocks and 591 fishing villages. The coastal area of Tamil Nadu is multi-hazard prone in nature. The major natural hazards that threaten the Tamil Nadu coast frequently are cyclones and associated storm surges. Floods and flash floods, particularly in urban areas, are not uncommon. In the past, it was only the cyclone and flood-related disasters that occurred along the coastal areas but in the recent years, we have witnessed even the deadliest tsunami disaster all along the Tamil Nadu coast and hence, Tamil Nadu has become vulnerable to natural hazards also. Therefore, the need to develop a Coastal Community Vulnerability Reduction Project along the entire Tamil Nadu coast.

From the experience of tsunami reconstruction, it emerged that multi-purpose evacuation shelters, early warning systems, evacuation routes / roads, signages and constructing new houses for those living under vulnerable conditions were required to reduce the vulnerability of the coastal communities.

As a starting point, a detailed household survey was done in the coastal areas to determine vulnerable houses. The coastal districts covered were the following (from north to south): (1) Tiruvallur, (2) Kancheepuram, (3) Villupuram, (4) Cuddalore, (5) Nagapattinam, (6) Tiruvarur, (7) Thanjavur, (8) Pudukottai, (9) Ramanathapuram, (10) Thoothukudi, (11) Tirunelveli and (12) Kanniyakumari.

Based on a detailed household survey in vulnerable coastal areas, it is proposed to take up the 52,569 houses, which are up to 1000 m from the coastal line, which was assumed to be the High Tide Line (HTL). This includes 45,454 in situ houses and 4,478 houses in relocation sites. The table below gives the breakdown of the number of houses in the rural and urban areas. The number of houses is based on the household survey conducted between December 2006 and February 2007. The tentative lists of beneficiaries are placed in the Village Committee (Grama Sabha) meetings and published widely. The selection process is also validated through an external agency/NGO. The numbers may undergo modifications based on the above.

Package	Total no. of houses to be reconstructed		
	Rural	Urban	Total
Tsunami Rehabilitation Programme GoI assistance	15869	6131	22000

Emergency Tsunami Reconstruction Project (ETRP) funded by World Bank	23646	6923	30569
<b>Total</b>	<b>39515</b>	<b>13054</b>	<b>52569</b>

The district-wise information of the number of vulnerable houses is included in the **Annex 1**.

## 1.2 Project objectives

The primary purpose of the project is to reduce the vulnerability of the coastal community in the rural areas.

## 1.3 Project description

The project will be achieve this objective by providing

(1) Repairs and reconstruction of 52,569 vulnerable houses (30,569 funded by World Bank and 22,000 houses between 0-200 m from HTL funded by Government of India) in the rural & urban areas to become multi-hazard resistant and this is spread over about 997 habitations. The plinth area of each house will be 325 sq. ft.

(2) Evacuation routes / roads and minor bridges of total 150 km spread over 12 coastal districts,

(3) About 78 Multi-purpose evacuation shelters spread over 12 districts,

(4) Signages (625 nos) for easy identification of evacuation routes and avoidance of congestion during emergency evacuation spread across 12 districts, and

(5) Early warning towers / systems in 997 habitations to cover all the vulnerable coastal communities.

All of these are individually small investments distributed across the entire TN coast.

## 1.4 Project cost estimate

The total funding requirement for proposal under ETRP to be funded by the World Bank are given in the table below (Note: the figures have to be modified to include only rural houses):

Sl. No.	Details	Quantity (Nos.)	Rate per quantity (Rs. in lakh)	Total cost (Rs. in crore)
1	Construction cost of houses	30569	2.40	733.656
2	Tentative cost of amenities in each house	10548	0.40	42.192
3	Insurance coverage for 10 years	30569	0.001 per year	3.057
4	Construction of Evacuation Shelters	78	150.00	117.000
5	Cost of Evacuation Routes (150 kms @ Rs.40 lakh per km.)			60.000
6	Establishment of Warning Tower / Early Warning System	997	0.50	4.985
7	Setting up of Implementation Cell for monitoring at PMU			4.076
8	Setting up of Engineering Divisions for Rural Development & Panchayat Raj Department			15.246

9	Putting up of Signages	625	0.50	3.125
10	Cash rent at Rs.500/- per month for twelve months	25700	128.50 per month	15.420
<b>TOTAL</b>				<b>998.757</b>

The International Development Association (IDA) propose to support GOI with assistance to Tamil Nadu. The proposed project's total cost is estimated to be about Rs.998.757 crore. including contingencies, of which IDA would finance Rs.998.757 crore.

## **Institutional arrangements**

### **1.4.1 Policy, planning & overall coordination**

The Special Commissioner & Commissioner of Revenue Administration has already in place a Project Management Unit (PMU), which will be coordinating and monitoring the community vulnerability reduction programme. While the PMU is not engaged in actual reconstruction of houses and other structures, the following functions associated with reconstruction will be undertaken by this office:

- Coordinate the State-wide reconstruction program with many entities that are part of the process, including the relevant line departments.
- Provide policy guidance ensuring that all categories of beneficiaries are adequately served.
- Manage the financial resources and provide the funds intended for reconstruction by directing them to the decentralized centres as appropriate.
- Coordinate the development of the overall standards for the reconstruction process that should be accepted and adhered to by all the participants in the reconstruction process.

### **1.4.2 Implementing Agencies**

The following will be the implementing agencies for the project:

Rural Development and Panchayat Raj (RD & PR) Department: This department will be involved in the construction of houses, evacuation routes / roads within their jurisdiction and signages in the various coastal communities. This department will liaise with other departments (TN Water Supply & Drainage Board and TN Electricity Board) for the basic amenities such as water supply, sanitation and electricity provision.

Public Works Department (Buildings): This department will be involved in the construction of evacuation shelters.

Tamil Nadu Water Supply & Drainage Board (TWAD): This department will be involved for providing of water supply and sanitation facilities in the project area.

Revenue Department – Disaster Management & Mitigation Department: This department will procure the equipment, which will be installed by the respective District Collectors.

PMU will provide the necessary coordination support to all these implementing agencies.

## **1.5 Roles & responsibilities**

### **1.5.1 Staffing of the PMU**

PMU already has an environmental specialist for the ongoing project. This environmental specialist will provide the necessary coordination and support for this project as well. The tasks will comprise coordination with implementing agencies on the one hand and the World Bank on the other.

Environment Specialist of PMU will be responsible for monitoring and supervising the District PIU and other environmental issues. Environment Specialist of PMU will also coordinate and report to the World Bank.

### **1.5.2 Staffing of the PIU-RD&PR**

PIU-RD&PR, the implementing agency primarily for constructing the vulnerable houses, will appoint an environmental specialist at the state level to coordinate implementation with the various District PIUs and the PMU.

At the district level, an Executive Engineer will be assigned with the responsibility of ensuring the EMF activities during implementation.

### **1.5.3 Procurement and Management Consultants**

At the district level, Procurement and Management Consultants will be appointed to support the activities of the District PIU. These Consultants will necessarily have an engineer, who will be assigned the responsibility of monitoring and reporting on EMF activities. This engineer from the Consultant's team will work closely with the District PIU's Executive Engineer.

### **1.5.4 Contractor**

Contractor should assign an engineer to coordinate the implementation of the EMF requirements on his various sites. On a monthly basis, the Contractor should submit a short report indicating compliance to the EMF requirements or stating the deviations, if any, along with corrective actions.

## **1.6 Purpose of EMF**

The Environment Management Framework (EMF)-Environment details agreed environmental policies, guidelines, and procedures to be integrated with the implementation of the Bank-supported Vulnerability Reduction of Coastal Communities Project (hereafter the 'Project') in the Indian state of Tamil Nadu. The Project will support the Government of India (GoI) Vulnerability Reduction of Coastal Communities Project reconstruction activities. The operation is expected to be implemented over a two-year period.

The following are the specific objectives of the EMF:

- Enhance positive and sustainable environmental outcomes associated with Project implementation;
- Support the integration of environmental aspects associated with the numerous subprojects into the decision making process;
- Enhance positive environmental outcomes;
- Minimize environmental degradation as a result of either individual subprojects or their cumulative effects;
- Protect human health;

- Minimize impacts on cultural property.
- Ensure compliance to relevant environmental laws

The above objectives and the contents of the EMF were developed based on the lessons related to environmental performance that were learned from ETRP Phase I. The lessons include the following:

- HTL demarcation should be done prior to construction of houses.
- EIA for large housing sites should be done as per the requirement of the EIA notification and environmental clearance should be obtained prior to construction.
- Local Panchayat, Town & Country Planning and CRZ clearances should be obtained prior to construction.
- Appropriate sanitation designs should be developed prior to the construction of the houses.
- Good environmental practices should form an integral part of the contracts being awarded to the contractors.
- Coordination between the various agencies at the State and District levels have to be done for ensuring that clearances are obtained in advance of construction.
- Site selection should be done taking into account its previous land use and whether or not it is in a low-lying area.

## **1.7 Environmental laws**

The following are the environmental laws that are relevant to this project:

### **Water and Air (Prevention & Control of Pollution) Acts**

Background: Water (Prevention and Control of Pollution) Act, 1974 resulted in the establishment of the Central and State Pollution Control Boards (SPCBs) whose responsibilities include managing water quality and effluent standards, as well as monitoring water quality, prosecuting offenders and issuing licenses for construction and operation of certain facilities. The SPCB is empowered to set air quality standards and monitor and prosecute offenders under the Air (Prevention and Control of Pollution) Act, 1981.

Relevance to the project: All construction contractors need to obtain the consent-to-establish and consent-to-operate for the various plants – concrete batching, stone crushing and other plants – that they may erect for the purpose of housing construction. This should be obtained from the nearest regional offices of the SPCB. If existing plants are to be used, then these should have the required consents.

### **Environment (Protection) Act, 1986 and Environmental Impact Assessment Notification, September 14, 2006**

Background. Environmental (Protection) Act, 1986 is the umbrella legislation providing for the protection of environment in the country. This Act provides for the Environment (Protection) Rules. Environmental Impact Assessment Notification, 1984 and the various amendments pertaining to this notification form a part of the regulations under this legislation.

Relevant to the project: (1) In all their plant operations (if they erect), the contractors need to meet the requirements / standards prescribed in the various Environmental Protection Rules and other environmental regulations. (2) for relocation sites, there may be need to undertake an environmental impact assessment and obtain clearance under the EIA notification. This is based on

the size of the relocation site.

### **Forest (Conservation) Act, 1980**

**Background.** Forest (Conservation) Act, 1980 pertains to the cases of diversion of forest area and felling of roadside plantation. Depending on the size of the tract to be cleared, clearances are applied for at the following levels of government:

- If the area of forests to be cleared or diverted exceeds 20ha (or, 10ha in hilly area) then prior permission of Central Government is required;
- If the area of forest to be cleared or diverted is between 5 to 20ha, the Regional Office of Chief Conservator of Forests is empowered to approve;
- If the area of forest to be cleared or diverted is below or equal to 5ha, the State Government can give permission; and,
- If the area to be clear-felled has a forest density of more than 40%, permission to undertake any work is needed from the Central Government, irrespective of the area to be cleared.

Restrictions and clearance procedure proposed in the Forest (Conservation) Act applies wholly to the natural forest areas, even in case the protected/designated forest area does not have any vegetation cover.

**Relevance to the project:** If the activities are going to necessitate the diversion of forest area, then the respective line departments have to take the necessary clearances from the Forest Department / MoEF.

### **Ancient Monuments and Archaeological Sites and Remains Act, 1958**

**Background.** According to this Act, area within radii of 100m and 300m from the "protected property" are designated as "protected area" and "controlled area" respectively. No development activity (including building, mining, excavating, blasting) is permitted in the "protected area" and development activities likely to damage the protected property are not permitted in the "controlled area" without prior permission of the Archaeological Survey of India (ASI) if the site/remains/monuments are protected by ASI or the State Department of Archaeology if these are protected by the State.

**Relevance to the project:** The following precautions are required:

- Activities in protected areas should not be undertaken.
- If activities are to be done in the controlled area of protected properties, then the respective line department should take the necessary permissions from the ASI.

### **Coastal Regulation Zone (CRZ) Regulations, 1991 (amended upto 2002)**

**Background:** Issued under the Environment (Protection) Act, 1986, coastal stretches have been defined as Coastal Regulation Zone and restrictions have been imposed on industries, operations and processes within the CRZ. For regulating development activities, the coastal stretches within 500 metres of High Tide Line on the landward side are classified into four categories, namely:

- CRZ-I: (i) Areas that are ecologically sensitive and important, such as national parks/marine parks, sanctuaries, reserve forests, wildlife habitats, mangroves, corals/coral reefs, areas

close to breeding and spawning grounds of fish and other marine life, areas of outstanding natural beauty/historically/heritage areas, areas rich in genetic diversity, areas likely to be inundated due to rise in sea level consequent upon global warming and such other areas, and (ii) Area between Low Tide Line and the high Tide Line.

- CRZ-II: The areas that have already been developed upto or close to the shoreline. For this purpose, "developed area" is referred to as that area within the municipal limits or in other legally designated urban areas which are already substantially built up and which have been provided with drainage and approach roads and other infrastructural facilities, such as water supply and sewerage mains.
- CRZ-III: Areas that are relatively undisturbed and those which do not belong to either CRZ-I or CRZ-II. These will include coastal zone in the rural areas (developed and undeveloped) and also areas within Municipal limits or in other legally designated urban areas which are not substantially built up.
- CRZ-IV: Coastal stretches in the Andaman & Nicobar, Lakshadweep and small islands, except those designated as CRZ-I, CRZ-II or CRZ-III.

The development or construction activities in different categories of CRZ area shall be regulated by the concerned authorities at the State/Union Territory level, in accordance with norms stipulated in the CRZ regulation and in the state / UT coastal zone management plan.

Relevance to the project: As the project is being done between 0-1000m of the HTL, all reconstruction of housing units between 0-500m and 0-100 m back water will require CRZ clearances that need to be obtained from the State Coastal Zone Management Authority / Department of Environment.

### **Tamil Nadu Groundwater (Development and Management) Bill, 2003**

Background. This bill is to protect groundwater resources, to provide safeguards against hazards of its over-exploitation and to ensure its planned development and management in the state of Tamil Nadu and for matters connected therewith or incidental thereto. The bill shall empower government through the Tamil Nadu Groundwater Authority to develop, control, regulate and administer the groundwater in the state by ensuring its optimal and efficient utilisation. This also provides for conjunctive use of surface and groundwater. This bill provides for registration of new users of wells and also prohibition of sinking wells in notified areas without permit. It shall empower the authority to penalise the activities not in accordance with the act regarded as offences.

Relevance to the project. Groundwater Authority regulates the abstraction of groundwater. Line department / contractor should obtain clearances / permissions, if required, from this Authority prior to any abstraction of groundwater.

### **Tamil Nadu Town and Country Planning Act, 1971**

Background. Tamil Nadu Town and country planning act, 1971 is set with an objective to provide for planning the development and use of rural and urban land in the State of Tamil Nadu and for purposes connected therewith. The Act provides for the preparation and implementation of Regional Plans, Master Plans, New Town Development Plans and Detailed Development Plans and other various spatial plans. The act ensures implementation through various developmental controls and policies that would be incorporated in the spatial plans. The developmental plan is being implemented at various levels through the Directorate of Town and Country Planning. These plans form the basis for landuse regulations within the planned area.

Relevance to the project: The following need to be adhered to:

- All housing projects should be in compliance with the respective and existing development plans. Clearances / permissions should be taken from the Regional offices of the Directorate of Town and Country Planning prior to the construction of these housing projects.
- Town and Country Planning Regulations shall apply including the norms related to Floor Space Index (FSI) and Floor Area Ratio (FAR).
- Reconstruction of the authorized buildings to be permitted subject to the existing FSI/FAR norms and without change in the existing use.

### **Tamil Nadu Panchayats Act, 1994**

Background. The Tamil Nadu Panchayats Act, 1994 is an act to repeal and re-enact the Tamil Nadu Panchayats Act, 1958, for establishing a three tier panchayat raj system in keeping with the Seventy – third Amendment Act, 1992. It relates to the panchayats for greater participation of the people so as to make these institutions of self-government and more effective implementation of rural development programmes. The Tamil Nadu Panchayats Act provides for preparation and implementation of District development plans. Plan preparation is enforced from the Panchayat level, Panchayat union, Panchayat council, village panchayats, town panchayats, municipal councils and the municipal corporation towards overall development plans. District Planning Committee is responsible for the overall coordination of plan preparation. The act also provides for avoidance of encroachment of public lands and protection of roadside properties (including trees) belonging to the respective government departments.

Relevance to the project. The following need to be adhered to:

- All housing projects proposed in areas, which are under the jurisdiction of the town or village panchayats, should obtain their clearance / permission. The line department should ensure that this is obtained.
- All construction camps (including plant & equipment) in areas, which are under the jurisdiction of the town or village panchayats, should be established only after obtaining their clearance / permission.

### **1.8 Bank's environmental safeguards**

The following Bank's environmental safeguard policies are relevant in the context of this project:

**OP 4.01 Environmental Assessment.** The investments pertaining to the community vulnerability reduction are likely to cause minor and reversible environmental impacts, which can be managed through appropriate mitigation measures. Considering the nature and magnitude of potential environmental impacts from relatively limited scale and magnitude of reconstruction works, the proposed operations are likely to be classified as category 'B'. This EMF is being submitted as a safeguards document. This EMF has been developed based on the experience of the ongoing project that includes several environmental impact assessment studies of housing projects and the internal capacity of the PMU. This EMF includes procedures for ensuring compliance to legislation, also environmental requirements to be adhered during the construction and also the monitoring & reporting arrangements.

If there is a large housing project in a single relocated site, there will be a separate EIA commissioned and the required clearance from the GoTN / GoI as well as the World Bank will be obtained.

**OP 4.04 Natural Habitats.** The reconstruction of housing is likely to require a large amount of land. The Project will not support sub-projects that involve conversion of critical natural habitats such as in Forest Reserves, Wildlife Reserves, National Parks or Sanctuaries. Site selection criteria for new housing colonies, in both rural and urban areas, therefore include appropriate provisions for safeguarding valuable natural habitats.

Of the two environmental safeguard policies that are relevant to this project, only OP 4.01 on Environmental Assessment is triggered.

## **2 In-situ construction of vulnerable houses**

### **2.1 Introduction**

This section refers to in-situ reconstruction of vulnerable houses.

### **2.2 Compliance requirements**

#### **2.2.1 Local body clearance**

District PIU should obtain the building permission from the Local Panchayat (for rural areas) and Town Panchayat / Municipality (for urban areas).

#### **2.2.2 CRZ screening**

#### **HTL Demarcation**

District PIU should arrange for the HTL demarcation to be done in the habitation wherein the in-situ vulnerable house is situated. This will be completed by September 2007. Any minor modifications to the project design will be done with the new HTL demarcation.

#### **Identification of CRZ area**

District PIU should determine whether the location of the in-situ vulnerable falls under CRZ-I, CRZ-II or CRZ-III area. This should be based on the HTL demarcation and the following guideline:

CRZ-I	Eco-sensitive area Between LTL and HTL
CRZ-II	Urban area as identified in 1991*
CRZ-III	Rural areas as identified in 1991*

Note: \* To consult the local Town & Country Planning Authority and / or District PCB.

#### **CRZ-I area**

If CRZ-I, then the District PIU should not take up the in-situ reconstruction of the vulnerable house under this project.

#### **CRZ-II area**

If CRZ-II, then the District PIU should determine whether the vulnerable house falls within the seaward or the landward side of the development line, i.e. identified as the authorized building or

road.

If the vulnerable house is on the seaward side and the size is less than 325 sq.ft, District PIU should seek CRZ exemption through the District & State Coastal Zone Management Authority. This CRZ exemption through issues of an amendment to CRZ modification at MoEF level should be obtained from authorized agencies, prior to the award of contract specifically for the housing construction component financed by the World Bank. Prior to obtaining this exemption, no construction should be initiated.

If the vulnerable house is on the seaward side and the size is equal to or more than 325 sq.ft, District PIU should plan the construction for only 325 sq.ft.

If the vulnerable house is on the landward side, District PIU can plan the construction of vulnerable house of 325 sq.ft. plinth area.

### **CRZ-III area**

If CRZ-III, then the District PIU should determine whether the vulnerable house falls within 200m of HTL or 200-500m of HTL.

If the vulnerable house is within 200m of HTL and the covered area is less than 325 sq.ft., District PIU should seek CRZ exemption through the District & State Coastal Zone Management Authority. Prior to obtaining this exemption, no construction should be initiated.

If the vulnerable house is within 200m-500m of HTL, District PIU should plan the construction for 325 sq.ft. provided this does not exceed 33% of the existing plot size and not above 9m in height. If this plot size is not available, District PIU should seek CRZ exemption through the District & State Coastal Zone Management Authority. This CRZ exemption through issues of an amendment to CRZ modification at MoEF level should be obtained from authorized agencies, prior to the award of contract specifically for the housing construction component financed by the World Bank. Prior to obtaining this exemption, no construction should be initiated.

If the vulnerable house is beyond 500m of HTL, District PIU can plan the construction of vulnerable house of 325 sq.ft. plinth area.

### **2.2.3 CRZ clearance**

For all vulnerable houses falling within CRZ-II and CRZ-III areas, and 1-100 m from back water, District PIU should apply to the State Coastal Zone Management Authority through the District Coastal Zone Management Authority for the necessary CRZ clearance.

District PIU should ensure that the CRZ clearance is obtained prior to the award of contract.

### **2.3 Good design & construction practice**

District PIU should attach the two-page environmental requirements provided in Annexes 3, 4 and 5, to the bid / contract documents, which form a part of the construction contract agreement.

These requirements cover the following issues: filling of low-lying area if any, tree-cutting & compensation to be made if any, earthen storm water drains, onsite storage of material, approved quarries, sand, transportation of material, construction safety, disposal of debris, basis for the

location of toilet, rainwater harvesting and and location of individual sewage treatment system (Septic tank), location for common sullage disposal, no abstraction of ground water from within 500m and no preference for asbestos material.

## **2.4 Operational & maintenance requirements**

District PIU should make the necessary arrangements for the evacuation of sewage and evacuation of solid waste for the insitu reconstruction of the vulnerable houses under this project.

# **3 Relocation of vulnerable houses and their construction**

## **3.1 Introduction**

This section refers to relocation of vulnerable houses and their construction.

## **3.2 Site selection**

District PIU should ensure the following at the time of selecting the site:

- Lands notified as water bodies should not be chosen.
- Lands notified as eco-sensitive areas or reserved forests should not be chosen. This includes forests coming under Panchayat.
- Relocation sites nearer to the water bodies (including ponds and canals) are preferably not to be chosen.

District PIU should complete the format (Annex 2) and send it to PMU for approval. The PMU's approval should be obtained prior to the District PIU purchasing the land.

District PIU should prefer going to beyond 500m of the HTL as it is outside of the CRZ areas.

## **3.3 Compliance requirements**

### **3.3.1 Local body clearance**

District PIU should obtain the building permission from the Local Panchayat (for rural areas) and Town Panchayat / Municipality (for urban areas).

District PIU should obtain the layout approval from the concerned Director of Town & Country Planning.

### **3.3.2 CRZ screening**

#### **HTL Demarcation**

District PIU should arrange for the HTL demarcation in relation to the site for relocation. This will be completed by September 2007. Any minor modifications to the project design will be done with the new HTL demarcation.

#### **Identification of CRZ area**

District PIU should determine whether the relocation site falls under CRZ-I, CRZ-II or CRZ-III area. This should be based on the HTL demarcation and the following guideline:

CRZ-I	Eco-sensitive area Between LTL and HTL
CRZ-II	Urban area as identified in 1991*
CRZ-III	Rural areas as identified in 1991*

Note: \* To consult the local Town & Country Planning Authority and / or District PCB.

### **CRZ-I area**

If CRZ-I, then the District PIU should not take up the site for the reconstruction of the vulnerable house under this project.

### **CRZ-II area**

If CRZ-II, then the District PIU should determine whether the relocation site is within the seaward or the landward side of the development line, i.e. identified as the authorized building or road as of 1991.

If the relocation site is on the seaward side, then the District PIU should not take up the site for the reconstruction of the vulnerable house under this project.

If the relocation site is on the landward side, District PIU can plan the reconstruction of vulnerable house of 325 sq.ft. plinth area.

### **CRZ-III area**

If CRZ-III, then the District PIU should determine whether the relocation site falls within 200m of HTL or 200-500m of HTL.

If the relocation site is within 200m of HTL, District PIU should not take up the site for the reconstruction of the vulnerable house under this project.

If the relocation site is within 200m-500m of HTL, District PIU should plan the reconstruction only for the plinth area that does not exceed 33% of the individual plot size (i.e. 975 sq.ft. plot size is minimum required for construction of 325 sq.ft. covered area) being given to each beneficiary and not above 9m in height. If any deviation to this requirement is necessary, this should be done only after obtaining CRZ exemption. This CRZ exemption through issues of an amendment to CRZ modification at MoEF level should be obtained from authorized agencies, prior to the award of contract specifically for the housing construction component financed by the World Bank.

If the relocation site is beyond 500m of HTL, District PIU can plan the reconstruction of vulnerable house is not governed by CRZ regulations.

### **3.3.3 CRZ clearance**

For all vulnerable houses falling within CRZ-II and CRZ-III areas and 1-100 m from back water. District PIU should apply to the State Coastal Zone Management Authority through the District

Coastal Zone Management Authority for the necessary CRZ clearance.

District PIU should ensure that the CRZ clearance is obtained prior to the award of contract.

### **3.3.4 EIA clearance**

District PIU to determine whether or not the relocation site will require an EIA clearance. This is required under two conditions:

(1) In a building and construction project, if the built-up area is > 20,000 sq.m. and < 1,50,000 sq.m. for building and construction projects. In this case, District PIU should submit the Application Forms 1 & 1A to PMU for onward forwarding to the MoEF [until the formation of the State Environmental Impact Assessment Authority (SEIAA)].

(2) In a township and area development project, if the covered area is < 50 ha or built-up area is > 150,000 sq.m. In this case, District PIU should request the PMU to undertake an Environmental Impact Assessment (EIA) with the assistance of the external consultant. PMU should submit the Application Forms 1 & 1A and the EIA report to the MoEF [until the formation of the State Environmental Impact Assessment Authority (SEIAA)]. In this case, PMU should also ensure that the EIA is undertaken in line with the requirements of the OP 4.01 and also obtain the World Bank's clearance for the same.

Note: Built-up area is defined as the area of the covered construction; In the case of open-to-the-sky facilities, it will be activity area.

### **3.4 Good environmental practices during housing construction**

District PIU will ensure that good environmental practices are adopted during construction by attaching the Annex 3 titled "Environmental requirements in constructing houses in relocated sites" as a special condition to the contract.

These environmental practices cover the following issues: filling of low-lying area if any, tree-cutting & compensation to be made if any, earthen storm water drains, onsite storage of material, approved quarries, sand, transportation of material, construction safety, disposal of debris, basis for the location of toilet, rainwater harvesting and location of combined sewage treatment system (Dewats / ISF / FBBR) and no abstraction of ground water from within 500m.

### **3.5 Operational & maintenance requirements**

District PIU should make the necessary arrangements for the evacuation of sewage and evacuation of solid waste for the in-situ reconstruction of the vulnerable houses under this project.

## **4 Other infrastructure**

### **4.1 Introduction**

This chapter refers to the environmental issues related to other infrastructure that are to be directly funded under the project. This includes the construction of multi-purpose evaluation shelters, evacuation routes / roads, early warning systems and signages.

## **4.2 Multipurpose evacuation shelters**

District PIU will ensure that good environmental practices are adopted during construction by attaching the Annex 5 titled "Environmental requirements in constructing multipurpose evacuation shelters" as a special condition to the contract.

## **4.3 Evacuation routes / roads / minor bridges**

District PIU will ensure that good environmental practices are adopted during construction by attaching the Annex 4 titled "Environmental requirements in constructing evacuation routes / roads / minor bridges" as a special condition to the contract.

## **4.4 Early warning systems and signages**

There are no environmental issues pertaining to early warning systems and signages.

# **5 Habitation planning & Capacity-building initiatives**

## **5.1 Introduction**

This chapter refers to (1) the habitation plans that will be prepared at the district level by the District PIU with the assistance of external consultants, and (2) the capacity / awareness building initiatives to be imparted to various stakeholders during implementation.

## **5.2 Habitation planning**

### **5.2.1 Environmental issues in the habitation plan**

District PIU ensure that the following environmental issues are covered in the habitation plan: solid waste, drinking water supply, sewage disposal, roads, landscaping, avenue tree plantation, preservation of water bodies, land-filling practices, and coastal shelter belt plantation for vulnerability reduction in Government land.

### **5.2.2 Integration of environmental issues**

District PIU will ensure that the terms of reference for external consultants for preparing the habitation plan include the environmental issues.

District PIU will ensure that the drafted habitation plans adequately addresses the environmental issues and also identifies GoI / GoTN schemes that are relevant to implement the action points of the habitation plans.

## **5.3 Capacity-building initiatives**

### **5.3.1 Contractor orientation**

District PIUs will organize a 1-day orientation programme for the various contractors on the environmental requirements during construction. This will be conducted once every six months in each district.

PMU / State PIU will provide the technical assistance for conducting this orientation programme. This will be done with support from external consultants, who will be hired by the PMU.

District PIUs will also participate in this 1-day orientation programme.

## **6 Community / Stakeholder Consultations**

### **6.1 Introduction**

This chapter covers the community / stakeholder consultations done in preparing this project as well as what will be done during implementation. The project has adopted a strong participatory approach in the preparation phase and will continue to adopt the same during the implementation stages.

### **6.2 Preparation**

#### **6.2.1 Community survey**

In order to ascertain the vulnerable houses that require to be reconstructed, GoTN decided to take-up an comprehensive household survey.

GoTN issued a Government Order (Ms.No. 708, Revenue (NC IV) Department, dated 28.10.2006) to do this survey.

District Collectors of the 12 coastal districts undertook the survey with teams comprising one Deputy Collector, 2 Tahsildhars, 4 Revenue Inspectors, 1 Head Surveyor and 4 Surveyors.

The criteria to identify a vulnerable house were agreed at the state level. The criteria included: (a) fully thatched houses, (b) houses with thatched roof with any kind of wall like mud or brick, (c) houses with mud walls with any kind of roof structure, (d) houses with brick walls and mud mortar with any kind of roof structure and (e) houses built with Government finance earlier but are in a dilapidated condition (At present, houses which are 10 years old as on 1.1.2006 are identified).

Survey teams in each district identified houses that meet these criteria. This was done between December 2006 and February 2007.

District PIUs have the data that came out of this survey, which includes photographs of the beneficiaries and a completed detailed format containing specific information pertaining to the beneficiaries.

### **6.3 Implementation**

#### **6.3.1 Finalising individual housing designs**

District PIU will ensure that each beneficiary is given 4 or 5 type designs for the houses and given the option for selection. This will be done by the District PIU with help from a NGO or Development Consultant specifically employed for this purpose.

District PIU will consider any environmental suggestions received during these beneficiary

consultations.

### **6.3.2 Environmental issues during consultation**

District PIU will receive suggestions / concerns from the beneficiaries or through NGO or Development consultant any environmental issues, and ensure that these are addressed commensurately.

## **7 Disclosure**

### **7.1 Introduction**

This chapter covers the disclosure arrangements pertaining to this EMF.

### **7.2 Disclosure locations**

#### **7.2.1 PMU and State PIU**

Copies of the draft EMF will be available in the PMU and the State PIU.

#### **7.2.2 District Collectorate**

Copies of the draft EMF will be available in the District Collectorate of each of the 12 coastal districts.

#### **7.2.3 Website**

### **EMF**

Draft EMF was posted in the Project website, [www.tn.gov.in/tsunami](http://www.tn.gov.in/tsunami), in the month July 2007.

Based on the comments / feedback / suggestions received, the Draft EMF will be modified and updated. EMF will be made final by August 2007.

### **EIAs for specific relocation sites**

In selected cases, where EIAs have to be done for relocation sites, the draft EIA & EMP reports will be placed in the Project website, [www.tn.gov.in/tsunami](http://www.tn.gov.in/tsunami), for obtaining comments and feedback.

#### **7.2.4 Translation in tamil**

A translation of the final EMF in Tamil will be made available in the PMU.

### **7.3 Feedback**

PMU will consider any feedback obtained at the state-level.

District PIU will consider any feedback obtained at the district-level and will forward the same to the State PIU and the PMU for appropriate action.

## **8 Monitoring & Reporting**

### **8.1 Introduction**

This chapter covers the monitoring & reporting arrangements for the project.

### **8.2 Monitoring**

District PIU will monitor the various habitations for EMF compliance on a weekly basis.

In a six-month period, District PIU will ensure that all the habitations are covered in terms of EMF monitoring.

During these visits, District PIU will collect (i) information on the HTL Demarcation status, CRZ clearance status, Local body clearance status and Town & Country Planning Clearance status, and (ii) information on deviations from the environmental requirements during construction, if any. District PIU will also recommend appropriate corrective actions and undertake necessary follow-up.

PMU will monitor on a quarterly basis in order to ensure that the project activities are in line with the EMF. This will serve as a system of checks and balances. Annexure 8 includes a table of monitoring indicators along with frequency for various activities.

### **8.3 Reporting**

District PIU Environment Specialist will submit an EMF compliance report every quarter to the State PIU for onward forwarding to the PMU. These will be submitted by the 15th of the month following the quarter. Formats for these compliance reports are given in Annexes 6 & 7.

PMU Environment Specialist (an Executive Engineer will be assigned with the responsibility of ensuring the EMF activities during implementation) will compile these reports and submit a summary report of the main points to the Bank on a quarterly basis. These will be submitted by the end of the month following the quarter.

### **8.4 EMF audit requirements**

PMU will ensure that the audit to the EMF requirements to be adhered by the construction contractor will be done along with technical quality audits being done for the project as a whole.

In addition, the PMU will organize an audit of the adherence to EMF procedures, particularly those

pertaining to obtaining CRZ clearances and exemptions. This will be an audit done by external consultants once every year of project implementation.

**ANNEX 1: DISTRICT WISE NUMBER OF VULNERABLE HOUSES PROPOSED FOR RECONSTRUCTION**

Sl.No.	District	RURAL			URBAN			IAY	GRAND TOTAL
		No.of Houses within 1000m from HTL	No.of Houses within 200m from backwaters	Total	No.of Houses within 1000m from HTL	No.of Houses within 200m from backwaters	Total	No. of houses requiring reconstruction	
1	Kancheepuram	253	142	395	154	0	154	94	643
2	Nagapattinam	3133	34	3167	988	111	1099	149	4415
3	Tiruvallur	776	236	1012	6026	0	6026	335	7373
4	Tirunelveli	2610	0	2610	NIL	NIL	NIL	108	2718
5	Thanjavur	2665	0	2665	NIL	NIL	NIL	463	3128
6	Ramanathapuram	10399	0	10399	424	0	424	--- NIL ---	10823
7	Villupuram	4490	0	4490	NIL	NIL	NIL	302	4792
8	Cuddalore	695	0	695	911	554	1465	--- NIL ---	2160
9	Kanyakumari	2004	0	2004	2697	0	2697	832	5533
10	Thoothukudi	2263	0	2263	879	0	879	2192	5334
11	Pudukkottai	4808	286	5094	NIL	NIL	NIL	556	5650
	<b>Total</b>	<b>34096</b>	<b>698</b>	<b>34794</b>	<b>12079</b>	<b>665</b>	<b>12744</b>	<b>5031</b>	<b>52569</b>

## **ANNEX 2: SITE SELECTION – ENVIRONMENTAL CHECKLIST FOR RELOCATION SITES**

1. Name of the Habitation & Village:
2. Number of houses proposed:
3. Survey No of proposed Relocation site:
4. Type of Land [Agriculture (wet/dry) or Vacant Land]:
5. Available area for relocation site:
6. Soil type: [Red / Sandy / Clay / Rocky]:
7. Soil Stability [unsuitable / better / good]:
8. Drainage network connectivity [natural drain in the vicinity – Yes / No]:
9. Water logging at site during monsoons [Yes / No]:
10. Water logging in the surroundings of the site [Yes / No]:
11. Any access, road to the proposed site. If Yes, specify the type of road (cart track/ Metal Road / BT.Road):
12. Nearest Drinking water sources (Bore well / water tap) distance (in m):
13. Approximate Ground water table (in m):
14. Does the site require any earthwork? If so, what would be the extent of work? Specify in cum.
15. Any water Bodies at the nearest place, specify the distance of Tank / Pond / Lake / River / Stream / Seashore [in m]
16. Availability of borrow areas if the site is low-lying [Locations & Distance in Km]
17. Any major pollution complaints with in 1 km radius of proposed site:

18. Location for disposal of solid wastages from households:

### **ANNEX 3: ENVIRONMENTAL REQUIREMENTS DURING CONSTRUCTION OF VULNERABLE HOUSES**

<b>Sl.No</b>	<b>Activities</b>	<b>Management measures</b>	<b>Remarks</b>
1.	Concrete batching plant (if being installed or material being sourced from existing plant)	Specifications of batching plants to be procured will comply with the requirements of the relevant current emission standards; Concrete batching plants will not be within 1000 m from the habitations. TNPCB approval to be obtained for operation.	Air & Noise standards, Occupational Safety and Health Administration (OSHA) standards. Ministry of Road Transport and Highways (MoRTH).
2.	Other construction vehicles, equipments and machinery	All vehicles, equipments and machinery to be procured for construction will conform to the relevant Bureau of Indian Standards (BIS) norms	Environment protection Act 1986
3.	Quarries & crushers	The contractor will identify materials from existing licensed quarries with suitable material for construction.	TN Minerals concession Rules & TNPCB norms
4.	Water	The contractor will be responsible for arranging adequate supply of water for the entire construction period. The contractor will extract the water from surface water bodies. Boring of any tube well is not permitted within 500m of the HTL. Necessary permission to be obtained from Tamil Nadu Government Ground Water Board of PWD.	TN Ground Water Bill 2003.
5.	Labour camps	Labour camps, if any, will not be proposed within 1000m from eco-sensitive areas and basic facilities should be provided. Liquid and solid waste from these camps should be treated and properly disposed.	Environment protection Act 1986 & Factories Act / Rules
6.	Debris disposal	The contractor shall suitably dispose of the debris material, either through filling up of borrow areas or pre designated dumping locations, subject to the approval of the District PIU and Local Body. Debris should not be disposed in water bodies or in low-lying areas that were water bodies in the past.	Environment protection Act 1986
7.	Transportation of construction materials	All vehicles delivering materials to the site will be covered to avoid spillage of materials.	MoRTH
8.	Storage of construction material	All the earth work will be protected so as to minimize generation of dust.	MoRTH
9.	Monitoring Environmental Conditions	The contractor will undertake seasonal monitoring of air, water, noise & soil quality through an approved monitoring agency as per the consents, if any, obtained from the TNPCB.	TNPCB norms

10.	Contamination of soil	Vehicle, machinery and equipments operation, maintenance and refueling will be carried out in such a fashion that spillage of fuels and lubricants does not contaminate the ground.	MoRTH & TNPCB norms
11.	Dismantling of existing structures	Existing structures will be dismantled carefully and resulting materials will be disposed off properly as per the guidelines	MoRTH
12.	Redevelopment of borrow areas.	Redevelopment of borrow areas. Will be taken up in accordance with the plans approve by the District PIU.	MoRTH

#### **ANNEX 4: ENVIRONMENTAL REQUIREMENTS DURING CONSTRUCTION OF EVACUATION ROUTES / ROADS**

Sl.No	Activities	Management measures	Remarks
1.	Tree Cutting	Trees will be removed from the Corridor of Impact and construction sites before commencement of Construction with prior intimation to the Forest Department. Prior Permission will be obtained from the District Collector. Adequate tree plantation 1: 4 as per the MoEF conditions	Design MoRTH 201.6
2	Crushers, Hot-mix Plants & Batching Plants	Specifications of crushers, hot mix plants and batching plants will comply with the requirements of the relevant current emission control legislations.	Contract, MoRTH: 111.1, GoI Air & Noise Standards, OSHA Standards
3.	Other Construction Vehicles, Equipment and Machinery	The discharge standards promulgated under the Environment Protection Act, 1986 will be strictly adhered to. All vehicles, equipment and machinery to be procured for construction will conform to the relevant Bureau of Indian Standard (BIS) norms. Noise limits for construction equipments to be procured such as compactors, rollers, front loaders, concrete mixers, cranes (moveable), vibrators and saws will not exceed 75 dB (A), measured at one metre from the edge of the equipment in free field, as specified in the Environment (Protection) Rules, 1986.	Contract, Environment Protection Act, 1986 & MoRTH: 111.1
4.	Borrow Areas	Arrangement for locating the source of supply of material for embankment and subgrade as well as compliance to environmental requirements, as applicable, will be the sole responsibility of the contractor. Siting of borrow areas to be as per the Guidelines The contractor will not use any of the locations described here for borrowing (within and up to 1000m either side of Reserve Forest/ Ecologically sensitive areas). Locations identified by the contractor shall be reported to the Dept. Planning of haul roads for accessing borrow materials will be undertaken during this stage. The haul roads should be routed to avoid agricultural areas. In addition to testing for the quality of borrow materials by the Dept, the environmental personnel of the Dept. will be required to inspect every borrow area location prior to approval.	MoRTH: 305.2.2.2
5.	Quarries	The Contractor will identify materials from existing licensed quarries with the suitable materials for construction. Apart from approval of the quality of the quarry materials, the	MoRTH: 111.3

		Dept. representative will verify the legal status of the quarry operation, as to whether approval under Tamil Nadu Minor Mineral Concession Rules, 1959 [Corrected upto 31.3.2001] is obtained.	
6.	Water	The contractor will source the requirement of water preferentially from surface water bodies, as rivers and tanks in the project area. The contractor will be allowed to pump only from the surface Water bodies. Boring of any tube wells will be prohibited. Only at locations where surface water sources are not available, the contractor can contemplate extraction of ground water. Consent from the Dept` that no surface water resource is available in the immediate area for the project is a pre-requisite prior to extraction of ground water. The contractor will need to comply with the requirements of the state Ground water department and seek their approval for doing so. Ground Water Board, PWD, GoTN has categorized blocks based on ground water extraction as over exploited and dark (85-100 %) and grey (65-85%). The contractor will not be allowed to extract any ground water from such over exploited dark blocks and grey blocks. No abstraction between 0-500m of HTL.	Contract
7.	Sand	The contractor will use approved sand quarries with requisite approvals for the extraction of sand under Tamil Nadu Minor Mineral Concession Rules, 1959 [Corrected upto 31.3.2001] for use in the project	
8.	Construction Camp Locations - Selection, Design & Layout	Construction camps will not be proposed: (i)Within 1000m of locations (Reserve Forest /Ecologically sensitive areas). (ii)Within 1000m from the nearest habitation to avoid conflicts and stress over the infrastructure facilities, with the local community. Locations for stockyards for construction materials will be identified at least 1000 m from watercourses. The waste disposal and sewage system for the camp will be designed, built and operated such that no odour is generated. Unless otherwise arranged by the local sanitary authority, arrangements for disposal of excreta suitably approved by the local medical health or municipal authorities or as directed by Dept will need to be provided by the contractor.	Contract
9.	Hot Mix Plants & Batching Plant Location	Hot mix plants and batching plants will be sited sufficiently away from habitation, agricultural operations or industrial establishments. Such plants will be located at least 1000m away from the nearest eco-sensitive areas or habitation, preferably in the downwind direction.	Contract
10.	Generation of Debris from dismantling of pavement structures	Debris generated due to the dismantling of the existing pavement structure shall be suitably reused in the proposed construction, subject to the suitability of the material and the approval of the Engineer Unutilized debris material shall be suitably disposed off by the contractor, either through filling up of borrow areas created for the project or at pre-designated dump locations, subject to the approval of the Dept. Debris generated from pile driving or other construction activities shall be disposed such that it does not flow into the surface water bodies or form mud puddles in	MoRTH 202.5 MoRTH 517

		the area. Dumping sites shall be identified by the contractor as per guidelines	
11.	Bituminous wastes disposal	The disposal of residual bituminous wastes will be done by the contractor at secure land fill sites, with the requisite approvals for the same from the concerned government agencies.	MoRTH: 201.4
12	Stripping, stocking and preservation of top soil	The topsoil from borrow areas, areas of cutting and areas to be permanently covered will be stripped to a specified depth of 150mm and stored in stockpiles. At least 10% of the temporarily acquired area will be earmarked for storing topsoil.	MoRTH: 301.3.2 & MoRTH: 305.3.3 MoRTH: 301.7 & MoRTH: 305.3.9
13	Transporting Construction Materials	All vehicles delivering materials to the site will be covered to avoid spillage of materials. All existing highways and roads used by vehicles of the contractor, or any of his sub-contractor or suppliers of materials and similarly roads which are part of the works will be kept clean and clear of all dust/mud or other extraneous materials dropped by such vehicles	MoRTH: 111.9
14	Storage of Construction Materials		
15	Monitoring environmental performance	The contractor will undertake seasonal monitoring of air, water, noise and soil quality through an approved monitoring agency. The parameters to be monitored, frequency and duration of monitoring as well as the locations to be monitored will be as per the PCB standards.	TNPCB norms

## **ANNEX 5: ENVIRONMENTAL REQUIREMENTS DURING CONSTRUCTION OF MUTLI-PURPOSE SHELTERS**

<b>Sl.No</b>	<b>Activities</b>	<b>Management measures</b>	<b>Remarks</b>
1.	Concrete batching plant (if being installed or material being sourced from existing plant)	Specifications of batching plants to be procured will comply with the requirements of the relevant current emission standards; Concrete batching plants will not be within 1000 m from the habitations. TNPCB approval to obtained for operation.	Air & Noise standards, Occupational Safety and Health Administration (OSHA) standards. Ministry of Road Transport and Highways (MoRTH).
2.	Other construction vehicles, equipments and machinery	All vehicles, equipments and machinery to be procured for construction will confirm to the relevant Bureau of Indian Standards (BIS) norms	Environment protection Act 1986
3.	Quarries & crushers	The contractor will identify materials from existing licensed quarries with suitable material for construction.	TN Minerals concession Rules & TNPCB norms
4.	Water	The contractor will be responsible for arranging adequate supply of water for the entire construction period. The contractor will extract the water from surface water bodies. Boring of any	TN Ground Water Bill 2003.

		tube well is not permitted within 500m of the HTL. Necessary permission to be obtained form Tamil Nadu Government Ground Water Board of PWD.	
5.	Labour camps	Labour camps, if any, will not be proposed within 1000m from eco-sensitive areas and basic facilities should be provided. Liquid and solid waste from these camps should be treated and properly disposed.	Environment protection Act 1986 & Factories Act / Rules
6.	Debris disposal	The contractor shall suitably dispose of the debris material, either through filling up of borrow areas or pre designated dumping locations, subject to the approval of the District PIU and Local Body. Debris should not be disposed in water bodies or in low-lying that were water bodies in the past.	Environment protection Act 1986
7.	Transportation of construction materials	All vehicles delivering materials to the site will be covered to avoid spillage of materials.	MoRTH
8.	Storage of construction material	All the earth work will be protected so as to minimize generation of dust.	MoRTH
9.	Monitoring Environmental Conditions	The contractor will undertake seasonal monitoring of air, water, noise & soil quality through an approved monitoring agency as per the consents, if any, obtained from the TNPCB.	TNPCB norms
10.	Contamination of soil	Vehicle, machinery and equipments operation, maintenance and refueling will be carried out in such a fashion that spillage of fuels and lubricants does not contaminate the ground.	MoRTH & TNPCB norms
11.	Dismantling of existing structures	Existing structures will be dismantled carefully and resulting materials will be disposed off properly as per the guidelines	MoRTH
12.	Redevelopment of borrow areas.	Redevelopment of borrow areas. Will be taken up in accordance with the plans approve by the District PIU.	MoRTH

## ANNEX 6: EMF LEGAL COMPLIANCE REPORTING FORMAT

District:		Block:		Date:		
Sl.No.	Name of habitation & village	Local Body Clearance	Town & Ctry Plnng Clearance	CRZ Clearance/ exemption	EIA Clearance	Remarks / Next Steps

Legend: A – Applied for; O – Obtained; R- Rejected; NR– Not Required

## **ANNEX 7: EMF COMPLIANCE REPORTING FORMAT FOR REQUIREMENTS DURING CONSTRUCTION**

District:		Block:	Date:
Sl.No.	Name of habitation & village	Deviation from requirements observed	Remarks / Next Steps

## **ABBREVIATIONS & ACRONYMS**

CRZ	Coastal Regulation Zone
DoE	State Department of Environment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESMF	Environmental and Social Management Framework
ETRP	Emergency Tsunami Reconstruction Project
FAR	Floor Area Ratio
FSI	Floor Space Index
GoI	Government of India
GoTN	Government of Tamil Nadu
HTL	High Tide Line
IDA	International Development Association
MoEF	Ministry of Environment & Forests
NGO	Non-Governmental Organisation
OP	Operational Policies
PIU	Project Implementing Unit
PMU	Project Management Unit
RD&PR	Rural Development & Panchayati Raj
SPCB	State Pollution Control Board
SEIAA	State Environmental Impact Assessment Authority
TN	Tamil Nadu