



A. HOW IS THE COASTAL ZONE DEFINED IN THE COUNTRY?

The Coastal Regulation Zone Notification 2011 defines the Coastal Regulation Zone (CRZ) in India as:

- Area from High Tide Line (HTL) to 500 metres (m) on the landward side. HTL is the line on the land upto which the highest water line reaches during the spring tide.
- For tidal influenced water bodies: area from HTL to 100m or width of the creek, whichever is less, on the landward side. The distance for these water bodies upto which CRZ will become applicable is to be decided depending on salinity concentration of 5 parts per thousand (ppt) measured during the driest period of the year.
- Area falling between the hazard line and 500m from HTL on the landward side. For tidal influenced water bodies this distance is 100m. Hazard line is the line demarcated by the union Ministry of Environment and Forests (MoEF), through the Survey of India, taking into account tides, waves, sea level rise and shoreline changes.
- Inter-tidal zone: area between HTL and Low Tide Line (LTL).
- Water and bed area between LTL and 12 nautical miles. In case of tidal influenced water body, it will be the water and bed area between LTL at the bank and LTL on the opposite bank.

B. HOW IS THE COASTAL ZONE CATEGORISED?

CRZ in the country is sub-divided into the following, according to CRZ Notification 2011:

- **CRZ I:** include areas that are ecologically sensitive like mangroves, corals and coral reefs, sand dunes, mudflats, national parks, marine parks, sanctuaries, reserve forests, salt marshes, turtle nesting grounds, etc. A buffer zone of 1,000 square metres (m²) around the mangrove area is also to be considered as CRZ I. CRZ I also include the inter-tidal zone.
- **CRZ II:** include areas that have developed close to the shoreline. These are urban areas, which have drainage, approach roads and other infrastructural facilities with a ratio of built up plots to total plots more than 50 per cent.
- **CRZ III:** are relatively undisturbed areas that are neither CRZ I or II. Area upto 200m from HTL for seafront and 100m for tidal influenced water body is to be set aside as No Development Zone (NDZ).
- **CRZ IV:** include water area from LTL to 12 nautical miles seaward. For tidal influenced water bodies, this includes the water area from the mouth of the water body at the sea upto the influence of tide (5 ppt measurement).
- **Special areas:** These include CRZ areas within municipal limits of Greater Mumbai, CRZ areas of Kerala including backwaters, CRZ area of Goa, critically vulnerable areas like Sunderbans and other ecologically sensitive areas identified under the Environment (Protection) Act, 1986.
- There is a special notification called Island Protection Zone Notification, 2011 which governs the islands of Andaman and Nicobar and Lakshadweep. There are about 500 islands in Andaman and Nicobar and about 30 in Lakshadweep. The NDZ for the development of eco-tourism activities as per the Island Protection Zone Notification 2011 is 50m from the HTL. (After hazard line demarcation, the hazard line will be considered the no development zone limit). Mining is prohibited by the notification. Developmental activities are carried on these islands based on the plans approved by the Ministry of Environment and Forests (MoEF).

C. PROCEDURE FOR DEMARCATING HTL AND LTL

■ HTL and LTL is to be mapped by one of the authorized agencies of the MoEF based on recommendations given by the National Centre for Sustainable Coastal Management (NCSCM). These lines are to be mapped at 1:25000 scale. Coastal geomorphological signatures like – landward berm crest, rocks, headlands, cliffs, seawalls, revetments and embankments – are to be used for demarcating HTL and LTL.

■ In addition, local level Coastal Zone Management (CZM) maps are to be prepared at the cadastral scale (1:3960) for use to determine CRZ locally. HTL and LTL are to be demarcated on these maps based on detailed physical verification using similar geomorphological signatures. These maps are to be prepared by local agencies authorized by the Centre.

■ Each state is to prepare a Coastal Zone Management Plan (CZMP) at 1:25000 scale by engaging a reputed and scientific agency. The different CRZ categories are to be marked on this map after public consultation. The draft CZMP is to be submitted to the State Coastal Zone Management Authority (CZMA). The CZMA is to submit the CZMP to MoEF within six months after incorporating suggestions. MoEF is to approve the CZMP within a period of four months. The CZMP should be revised after a period of five years. As per the Notification, all states should submit their CZMPs to MoEF by January 2014 but the ministry has not received any plans yet.

■ Mapping of hazard line is to be carried out at 1:25000 scale for macro level planning and 1:10000 or cadastral scale for micro level planning.

D. HOW IS THE COASTAL ZONE REGULATED?

■ The CRZ Notification 2011 prohibits the following activities within the CRZ:

- Setting up of new or expansion of existing industries.
- Manufacture or handling of oil and storage or disposal of hazardous substances.
- Setting up and expansion of fish processing units except hatcheries and natural fish drying.
- Land reclamation, bunding or disturbing the natural course of seawater except those required for foreshore facilities or activities permissible under the Notification, measures for erosion control, etc.
- Setting up or expansion of units or mechanism for disposal of wastes and effluents except discharge of treated effluent, storm water drains, treatment and disposal of wastes and effluents from hotels, resorts and houses located in CRZ areas (other than CRZ I).
- Discharge or dumping of untreated wastes and effluents from industries, cities, towns, etc. Any existing discharge should be phased out within two years or one year respectively, of the CRZ Notification, 2011.
- Port and harbours in high eroding stretches of the coast except defence related projects.
- Reclamation for commercial purposes like shopping or housing complex, hotels, etc.
- Mining of sand, rocks, etc.
- Withdrawal of groundwater and construction within 200m of HTL except in area inhabited by local communities. Within 200-500 m of HTL, withdrawal of groundwater allowed for drinking, horticulture, agriculture and fisheries, if done manually.
- Altering the sand dunes, hills, natural features for beautification and recreation.

■ The notification also lists down permissible activities:

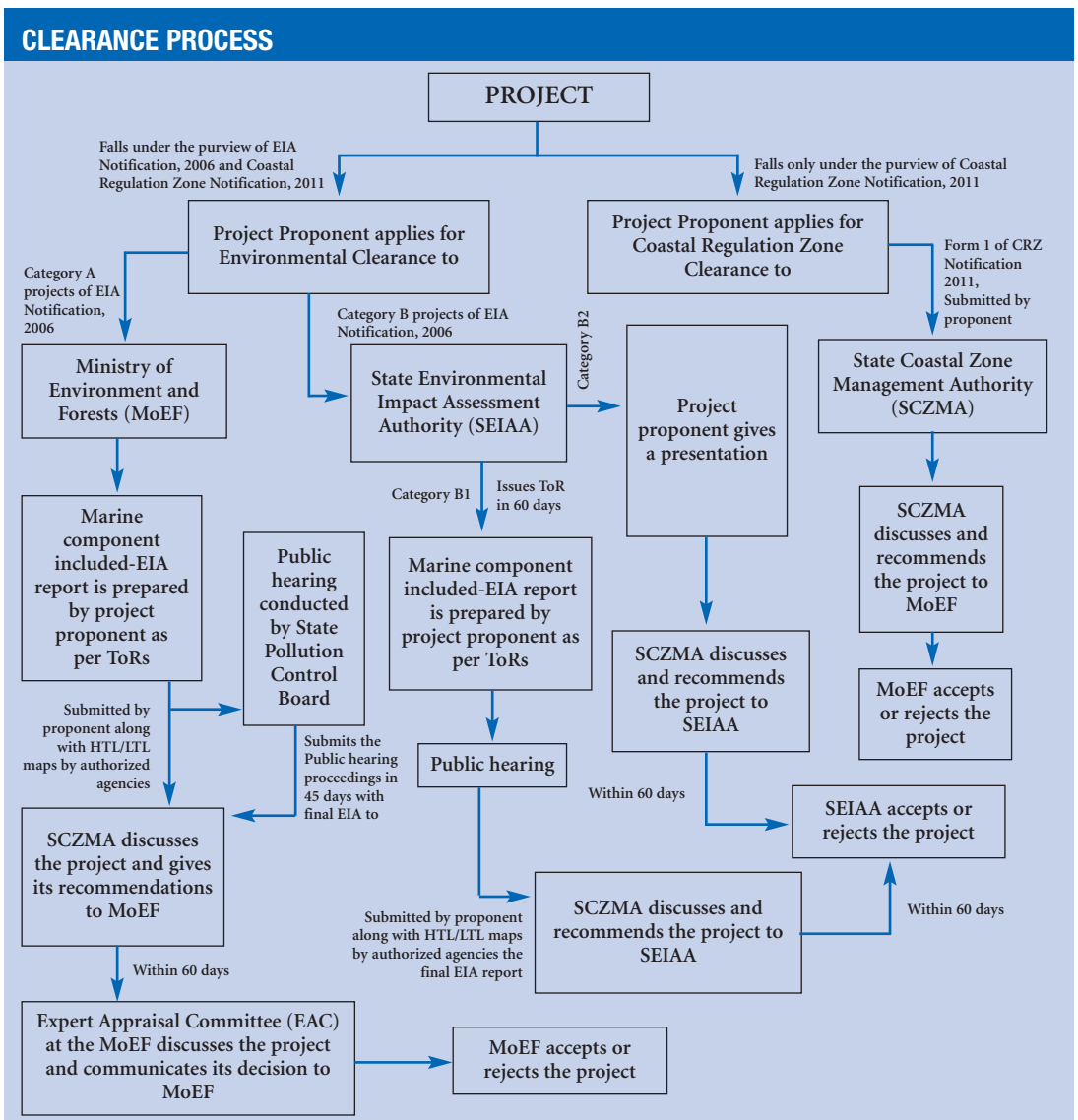
- Activities needing waterfront and foreshore facilities
- Housing schemes
- Construction involving more than 20,000 m² built up area in CRZ II
- Ports, harbours, jetties, quays, ship construction yards, breakwaters, groynes, erosion control measures, etc.
- Department of Atomic Energy projects or defence requirements
- Construction and operation of lighthouses
- Laying of pipelines and transmission lines

- Mining of rare minerals not available outside CRZ area
- Exploration and exploitation of oil and natural gas
- Desalination plants
- Renewable energy projects
- Facilities for transfer of raw materials, intake of cooling water and outfall for discharge of treated effluent from thermal power plants.
- Weather radars
- Demolition and reconstruction of archeologically and historically important buildings, places of worship/education/medical care, etc.
- Hotels or resorts maybe allowed in area between 200 and 500m of HTL.

E. WHAT IS THE PROCESS OF CLEARANCE FOR A COASTAL DEVELOPMENT PROJECT?

The CRZ Notification lays down the procedure for getting a CRZ clearance for the permissible activities (See: *Clearance Process*) as:

- Any project/activity falling under the Environmental Impact Assessment (EIA) Notification, 2006 will need to only apply for environmental clearance subject to a recommendation by the state CZMA.
- The EIA report should include a marine component. There should be a disaster management report, risk assessment report and management plan along with the clearance application. A CRZ map indicating HTL and LTL at a 1:4000 scale, proposed projects layout superimposed on this map, etc., to accompany the application.



- The state CZMA examines these documents and gives its recommendations to MoEF or the State level Environment Impact Assessment Authority (SEIAA) within 60 days from receipt. In case, the project/activity is not under the EIA Notification then it should be sent to MoEF.
- MoEF/SEIAA considers the project based on CZMA's recommendation within 60 days and gives its final decision.

F. INTEGRATED COASTAL ZONE MANAGEMENT (ICZMP)

■ The World Bank initiated an Integrated Coastal Zone Management Programme (ICZMP) in India in 2010. With a programme budget of US\$ 285.67 million, the project plans to assist the Government of India in developing an ICZM approach. Society of Integrated Coastal Management (SICOM) is the nodal agency for implementing this project. The project aims to:

- Build national capacity on ICZM
- Map, delineate and demarcate hazard line in the country
- Undertake three pilots, one each in Gujarat, Odisha and West Bengal.

To illustrate, the pilot project in Odisha was started in 2010 with focus along coastal stretches between Gopalpur to Chilika and Paradeep to Dhamra. The pilot aims to recognise causes for shoreline changes, coastal protection measures, construction of cyclone shelters, conservation of biodiversity, development of alternate livelihood options, development of a solid waste landfill, etc. The focus in and around the Chilika area has been on alternate livelihood – pisciculture, dairy, poultry, dry fish preparation, cold chain marketing of fish, net business, rice processing, etc. The livelihood activities are under operation in 30 villages around Chilika lake availing assistance from ICZMP. Under the alternative livelihoods programme, the villages are divided into self-help groups (SHGs) and a consultative process is followed where they choose their alternative livelihood option. So far 248 SHGs have been formed and assisted in these 30 villages. Financial assistance to the tune of 400.86 lakh has been extended to the beneficiaries of the 248 SHGs under operation to carry out their infrastructural and operational activities. But it is too soon to judge whether the ICZMP initiative is a success or not in the area.

G. ISSUES/PROBLEMS WITH COASTAL ZONE MANAGEMENT IN INDIA AND WHAT NEEDS TO BE DONE

- There is a need to review the protocols being used by the different authorised agencies undertaking CRZ demarcation and come out with a uniform guideline for the same.
- At present MoEF has authorised only seven agencies for demarcating CRZ both at national and project level. There is a need to authorise new agencies to do this work.
- There has been a lot of controversy about certain project proponents submitting false or wrong maps. Thus it is recommended that all cadastral level project mapping carried out should be put in public domain. There is a need to explore if these cadastral maps can be combined for different coastal stretches of the country to come up with a national level cadastral map. Also to avoid controversy, the project level mapping should be carried out independently by the government.
- The present clearance system is fraught with problems of sub-quality EIA reports that continues to plague coastal projects. There is a need to identify new institutions for carrying out this work independent of the project proponents.
- Monitoring of clearance conditions for projects in CRZ is also an area of concern and needs to be strengthened. It is important to have geo-referenced locations included in the conditions with landsat imagery analysis.
- There is a need to specify as to who will be carrying out the 5ppt measurements for tidal influenced bodies to ensure some accountability.
- The present Notification looks at permitting or prohibiting activities in the CRZ with very little provisions for coastal communities or habitat conservation. This needs to be incorporated.