

Chapter 1: Introduction

Coastal areas comprise some of the most dynamic natural ecosystems of our planet, where three main components—the hydrosphere, the lithosphere, and the atmosphere—meet and interact, forming interconnected systems. Coastal ecosystems including marshes, mangroves, near-shore coral reefs, seagrass beds, sandy beaches and dunes provide numerous benefits like livelihood through fisheries, protection from sea surges/cyclones. These benefits have ensured that demographic pressures on coastal resources have increased over the past several decades: 38 percent of the world’s population lives within 100 km of the coast. Recognising the significance of life under water, the United Nations included SDG 14, aims at conserving and sustainably using the oceans, seas and marine resources, to be achieved by all the member countries of UN SDG 14.

India, with a coastline of about 7516 kms, is one among the 12 mega biodiversity countries and 25 hotspots of the richest and highly endangered eco regions of the world. Coastal regions of India provide home to 13.36% of the people of the country and thus place tremendous pressure on the resources along the coast. There are nine coastal states in the country, namely, Gujarat, Maharashtra, Goa, Karnataka,

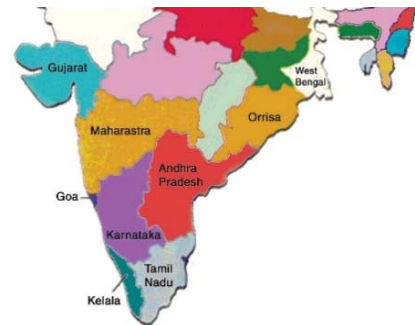


Fig. 1: Coastal states of India

Kerala, Tamil Nadu, Andhra Pradesh, Odisha, West Bengal.

The nodal institutions at the national level, Ministry of Environment, Forests and Climate Change (MoEF&CC), and Ministry of Earth Sciences along with various stakeholder ministries and other key scientific and research bodies all over India has been entrusted with the responsibility of protecting the coast and the fragile coastal resources and ensuring their sustainable use. The most significant among these is the Coastal Regulation Zone Notification in 1991, 2011 and 2019 promulgated by MoEF&CC. This is the overarching legislation for management of activities in Indian coastal space. Thus, evaluation of enforcement and implementation of this zonation mechanism is central to the assessment of Government measures to protect the coastal ecosystems.

1.1 Regulation of activities in coastal areas

The Central Government notified the Coastal Regulation Zone (CRZ) Notification, 1991 with a view to ensuring the livelihood security of fishermen and other local communities living in the coastal areas, to conserve and protect coastal stretches and also to promote development in a sustainable manner. The Notification also imposed restrictions on setting up and expansion of industries from operating in the CRZ areas. CRZ Notification was revised in 2011¹ and in 2019, based on the recommendations of a committee chaired by Sh. Shailesh Nayak. All CRZ

¹ Based on the recommendations of the Committee chaired by Prof. M.S. Swaminathan in 2009

notifications had demarcated the coastal areas into zones, with only permitted activity allowed in these zones. Under the CRZ notification 2011, the coastal regulated areas are categorised as CRZ I, CRZ II, CRZ III and CRZ IV:

<p>CRZ I</p> <ul style="list-style-type: none">• areas which are ecologically sensitive, form the geomorphological features which play a role in the maintaining the integrity of the coast.• includes-mangroves and 50 m buffer area for mangroves exceeding 1000 sqm.; corals, coral reefs and associated biodiversity; sand dunes; biologically active mudflats;• national parks, marine parks, sanctuaries, reserve forests, wildlife habitat and other protected areas notified as biosphere reserves;• Salt marshes; turtle nesting grounds; horse shoe crab habitats; sea grass beds; nesting grounds of birds;• areas or structures of archaeological importance/heritage sites/area lying between the Low Tide Line and High Tide Line
<p>CRZ II</p> <ul style="list-style-type: none">• areas within the existing municipal limits/other urban areas which are substantially built-up and drainage, approach roads and other infrastructural facilities
<p>CRZ III</p> <ul style="list-style-type: none">• relatively undisturbed /do not belong to either CRZ-I or II; This includes coastal zone in the rural areas, areas within the existing municipal limits or other urban areas which are not substantially built up.
<p>CRZ IV</p> <ul style="list-style-type: none">• designated to the water area from the Low Tide Line to twelve nautical miles on the seaward side and inland waters influenced by tide
<p>Areas requiring special consideration in the CRZ</p> <ul style="list-style-type: none">• for the purpose of protecting critical coastal environment/difficulties faced by local communities; consist of -CRZ area falling within municipal limits of Greater Mumbai;• the CRZ areas of Kerala including the backwaters and backwater islands;• CRZ areas of Goa and Critically Vulnerable Coastal Areas like Sundarbans• other ecologically sensitive areas identified as under Environment (Protection) Act, 1986 and managed with the involvement of coastal communities including fisherfolk.

All states had to prepare Coastal Zone Management Plans (CZMP), based on cadastral maps² and demarcation of high tide and low tide lines, to regulate specific activities under these zones. Further, a World Bank assisted project called Integrated Coastal Zone Management Project (ICZMP) was introduced for building national capacity for implementation of comprehensive coastal management approach in the country, starting with three coastal states of Odisha, West Bengal, and Gujarat.

² A cadastral map is a map that shows the boundaries and ownership of land parcels

1.2 Institutional Mechanisms involved in the conservation of coastal areas

Institutional Mechanism for implementation of CRZ Notifications

MoEF&CC

- The Impact Assessment Division of the Ministry regulates developmental activities of the coastal areas falling within CRZ. The Ministry constitutes Expert Appraisal Committees with domain experts for grant of approvals to Category A project proposals along the coasts.

NCZMA

- National Coastal Zone Management Authority is the apex agency for coastal regulation. It advises central government on the matters for changes in the classification of coastal zone areas and CZMPs. It also provides guidance and technical assistance to SCZMAs.

SCZMAs

- State Coastal Zone Management Authorities evaluate the project proposals from their respective states and recommend them to MoEF&CC or SEIAA for approval.

SEIAA

- State Environmental Impact Assessment Authorities are state bodies responsible for granting project clearance to Category B projects on the basis of recommendations of SCZMAs. The composition of SEIAA is similar to that of Expert Appraisal Committees at the centre.

DLC

- DLCs are the district level authorities for monitoring and enforcement of CRZ Notification

Institutional Mechanism for Implementation of ICZMP

SICOM

- Society of Integrated Coastal Management (SICOM) is a registered society under the aegis of the MoEF&CC, it is the designated National Project Management Unit for planning management, execution, monitoring and implementation of ICZMP.

Institutional Mechanism for Implementation of selected targets of SDG-14

MoES

- It is the data source Ministry for SDG 14.1- Prevention and reduction of marine pollution of all kinds and SDG 14.3- Minimisation of impacts of ocean acidification. National Centre for Coastal Research, an attached office of MoES collects all the data pertaining to SDG 14.1 and 14.3 in the country.

MoEF&CC

- It is the data source Ministry for SDG 14.2 sustainably manage and protect marine and coastal ecosystems and 14.5-Conservation of at least 10% of coastal and marine areas.

1.3 Audit Objectives

Audit framed five overarching objectives encompassing the relevant activities of the key players in the coastal environment. The audit objectives are as follows:

- (i) To examine if institutional mechanism exists at Centre as well as State to regulate the activities in CRZ areas as per the provisions of CRZ notification 2019.
- (ii) To examine if CRZ clearances granted by the Government are as per due procedure, to conserve coastal ecology
- (iii) Whether post clearance monitoring as well as enforcement of CRZ notifications safeguarded coastal ecosystems
- (iv) To examine if the project development objectives under Integrated Coastal Zone Management Programme (ICZMP) were successful.
- (v) To evaluate the measures taken up by the Government towards achieving the targets under SDG-14.

1.4 Audit Criteria

The main sources of audit criteria for the performance audit were CRZ Notification, 2011/2019³; Environment Impact Assessment Notification 2006; agenda and minutes of Expert Appraisal Committees; state specific Coastal Zone Management Plans; Terms of References of Expert Appraisal Committee (EAC), Environment Impact Assessment (EIA) and Environmental Management Plans (EMP) for project clearances, conditions imposed in Environment Clearance and CRZ clearance; records at Society of Integrated Coastal Management (SICOM), National Centre for Sustainable Coastal Management (NCSCM) and National Centre for Coastal Research; General Financial Rules and SDG 14 related records at MoES.

1.5 Audit Scope and Sampling

Audit covered the activities of institutions under the MoEF&CC and the MoES for the period from 2015-2020 with regard to implementation of CRZ notifications. In this regard, records at the State Coastal Zone Management Authorities (SCZMAs) of all the nine coastal states (West Bengal, Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Goa, Maharashtra and Gujarat) for the period 2015 to 2020 were examined. We also reviewed the implementation of ICZM projects in the states of Gujarat, Odisha and West Bengal. Further, given the significance of Sustainable Development Goals and the commitments of the country towards achieving them, we have also attempted to evaluate the efforts viz., planning, implementation and delivery mechanism towards attaining the targets related to coastal regulations under SDG 14- Life below water.

³ CRZ notification 2011 is the criteria for clearances as on February 2022 as the CZMPs based on CRZ 2019 are yet to be prepared by the States and approved by the MoE&FCC.

1.5.1 Sampling of Project clearances for examination under audit

(i) MoEF&CC accords two kinds of clearances. (a) composite clearance⁴, and (b) CRZ clearance⁵. 71 composite clearances and 139 CRZ clearances were granted by MoEF&CC during the period 2015-2019, of which 15 composite clearances and 28 CRZ clearances were sampled⁶.

(ii) 118 project clearances were sampled and examined by the state audit offices out of 1978 project clearances accorded by the State Bodies⁷.

(iii) Two districts in each of the nine coastal states were examined⁸ to evaluate the health of coastal environment with focus on endemic vulnerable flora and fauna.

(iv) We also examined 128 CRZ violations that formed 20 percent of the total reported violations (1898 violations) in the states to assess the measures taken by the State Coastal Zone Management Authorities on the CRZ violation cases reported to them⁹.

(v) We examined 13 pilot projects undertaken under ICZMP in the states of Odisha, West Bengal and Gujarat.

1.6 Audit Methodology

Entry conference was held on 1st July 2020, with representatives from the constituent units of MoEF&CC and MoES, wherein the audit objectives/ criteria/ scope and methodology of the performance audit were discussed. Field audit included examination of records at MoEF&CC, MoES, National Centre of Coastal Research, and State Coastal Zone Management Authorities (SCZMAs) of the nine coastal states. Joint physical verifications were conducted to ascertain the status of sampled reported violations. Audit used GIS tools to map the approved CZMP for selected region with satellite images from Google Earth to observe unreported violations.

⁴ Where the projects require Environmental Clearance (EC) as per the EIA Notification 2006 as well as CRZ clearance.

⁵ Where the project requires only CRZ clearance, in accordance with the Coastal Regulation Zone Notification in place.

⁶ Based on criteria a) inherent risk associated with the developmental activity b) vulnerability of marine ecosystems in and around the project site c) sufficiency of gestation period of the project (most of the selected projects, which had been granted clearance in the earlier part of the audit period).

⁷ SEIAA, Town Planning Authority, Municipalities, Panchayats etc.

⁸ The districts were sampled based on a number of factors such as risk from ongoing developmental activities, presence of endemic flora and fauna, reports on deterioration of coastal environment etc. The selected districts are as: Andhra Pradesh (East Godavari and Srikakulam), Goa (North Goa and South Goa), Gujarat (Bhavnagar and Gir Somnath), Karnataka (Dakshin Kannada and Udupi), Kerala (Ernakulam and Thiruvananthapuram), Maharashtra (Mumbai Sub Urban and Sindhudurg), Odisha (Kendrapara and Ganjam), Tamil Nadu (Chennai and Ramanathapuram), West Bengal (South 24 parganas and Purba Medinipur).

⁹ The cases which were sub-judice were left out and sampling was done from the remaining cases for each state.

Performance Audit Report on Conservation of Coastal Ecosystems

Audit findings were shared with the respective ministries for their response. The exit conference was held with MoEF&CC and MoES on 16th February 2022.

The draft report on this Performance Audit was issued to both MoEF&CC and MoES on 9th December 2021. Despite repeated requests, till the time of finalization of this report, with the exception of MoES, the SICOM and Statistical Division of MoEF&CC, no responses to the draft report have been received from the MoEF&CC.