

Chapter-1

Introduction

1.1 Coastal Ecosystems

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 etc. These benefits have ensured that demographic pressure on coastal resources has increased over the past several decades. India has a coastline of about 7,516 Kms of which Gujarat has about 1,600 Kms covering 16 coastal districts.

Figure 1.1: Coastline of the State of Gujarat



Coastal ecosystems are subject to a variety of anthropogenic threats including pollution, climate change, habitat alteration and overexploitation. Sustainable Development Goal 14 (SDG 14) laid down by United Nations (UN) recognizes the significance of life under water and aims at conserving and sustainably using the oceans, seas and marine resources. The Ministry of Statistics and Programme Implementation (MoSPI) has developed the National Indicator Framework (NIF) for measuring the progress of the SDGs and associated targets in India.

Through this audit, an attempt had been made to assess the institutional mechanisms involved in the protection and management of coasts; extant regulations, and major initiatives in the State for the protection of the coastal environment and to analyse the major threats posed to the coastal ecosystems.

1.2 Environment Acts and Notifications for conservation of coastal ecosystems

Ministry of Environment, Forest and Climate Change (MoEF&CC) and Ministry of Earth Sciences (MoES) are the two nodal Ministries, which deal primarily with the coastal and ocean areas. The important Acts/ Regulations that deal with the conservation and management of coastal ecosystems are as under:

- **The Environment (Protection) Act, 1986:** It is an umbrella Act of all environmental Acts, Notifications, etc., containing provisions for protection, conservation, and management of the environment. It has provisions for penalising violations of environmental norms prescribed under the Act.
- **The Water (Prevention and Control of Pollution) Act, 1974:** The Act was enacted to deal with water pollution and to prohibit the discharge of untreated wastewater into land and water bodies and marine waters with jurisdiction up to five kilometres in the sea.
- **Environment Impact Assessment (EIA) Notification, 2006:** This Notification primarily deals with the mandatory undertaking of environmental impact assessment and obtaining Environmental Clearance (EC) for major infrastructural and service activities. The schedule to this Notification contains a list of category 'A' and 'B' projects requiring prior environment clearance.
- **Coastal Regulation Zone (CRZ) Notification:** MoEF&CC under the Environment (Protection) Act, 1986 issued a Notification (February 1991) declaring the coastal stretches of the sea on the landward side, up to 500 meters from the High Tide Line (HTL), minimum of 100 meters width from HTL of tidally influenced bays, estuaries, creeks, rivers and backwaters and land between the Low Tide Line (LTL) and HTL as Coastal Regulation Zone (CRZ). The management of CRZ is through various Notifications issued and enforced by Coastal Zone Management Authorities both at the Central and State level. This CRZ Notification of 1991 was superseded by Notifications of 2011 and 2019, respectively. CRZ Notification is implemented through the preparation of district-wise Coastal Zone Management Plans (CZMPs) by the authorized agency¹ and their approval by MoEF&CC. In Gujarat, CZMPs as per 2011 Notification were approved² in the years 2019 and 2020. Updating of CZMPs as per CRZ Notification 2019 was still pending (August 2022). Hence, CRZ Notification 2011 was adopted as audit criteria. Three main activities under CRZ Notification 2011 viz. Zoning, Regulation, and Conservation are discussed in the subsequent paragraphs.

¹Eight agencies were authorised by MoEF&CC.

²CZMPs of the 16 districts were approved by MoEF&CC in January 2019 and February 2020 and accepted by the State Government in January 2019 and July 2022.

1.3 Institutional Mechanisms

1.3.1 Ministry of Environment, Forest and Climate Change

The Impact Assessment Division in MoEF&CC, Government of India (GoI) while implementing the provisions of the Environment (Protection) Act, 1986 (EPA) regulates developmental activities in coastal areas falling within the CRZ. The roles of the MoEF&CC are as follows:

- Environmental appraisal of projects under the provisions of CRZ Notification and EIA Notification.
- Review and approval of the CZMPs.
- Constitution and strengthening of State Coastal Zone Management Authorities.
- Identification of ecologically sensitive areas and notifying those areas for their effective management and conservation.

The Ministry has constituted a National Coastal Zone Management Authority (NCZMA) at the Central Level with its headquarters at MoEF&CC and 13 Coastal Zone Management Authorities in the Coastal States/ Union Territories. The State Governments and the Union Territory Administration are also required to constitute District Level Committees in each coastal district under the Chairmanship of the District Magistrate concerned, containing at least three representatives of local traditional coastal communities, especially from the fisher folk.

1.3.2 State Environmental Impact Assessment Authority

The State Environmental Impact Assessment Authority (SEIAA) reviews proposals of category 'B' projects for environment clearance and CRZ clearance recommended by the State Level Expert Appraisal Committee (SEAC) and Gujarat Coastal Zone Management Authority (GCZMA) respectively. It also grants composite clearance involving both Environment Clearance (EC) and Coastal Regulatory Zone (CRZ) clearance.

1.3.3 Gujarat Coastal Zone Management Authority

GCZMA was constituted by MoEF&CC to take measures for the protection and improving the quality of the coastal environment and for preventing, abating, and controlling environmental pollution in the CRZ. It considers CRZ clearance applications of Category 'A' and 'B' projects (As per EIA Notification, 2006) and forwards them for approval to MoEF&CC and SEIAA respectively.

It also enquires into cases of alleged violation of the provisions of the EPA and CRZ Notification 2011 in the CRZ area.

1.3.4 District Level Committees

District Level Committees (DLCs) are required to be constituted in all coastal districts of the State under the Chairmanship of respective District Collectors. DLCs assist GCZMA and enquire into cases of alleged violations.

1.3.5 Ministry of Earth Sciences

Ministry of Earth Sciences (MoES) came into existence through a Presidential Notification dated 12 July 2006. National Centre for Coastal Research, Chennai is an attached office of MoES which *inter alia* monitors the seawater quality along the country's coastline.

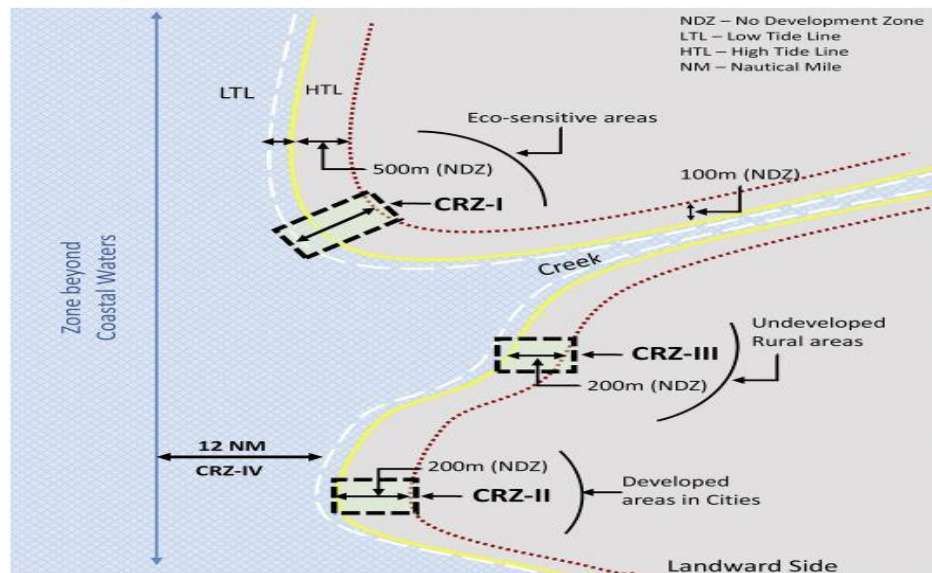
1.4 Coastal Regulation Zones and Clearance Process

After examining various aspects of a project, MoEF&CC grants CRZ clearance subject to the implementation of the stipulated environmental safeguards. The clearance process assigns specific roles to many of the institutions mentioned above. Clarity on the zone of CRZ in which the project is implemented is critical in arriving at a correct recommendation under the Notification. Zones given in the CRZ Notification 2011 are described below:

1.4.1 Coastal Regulation Zones

Under the CRZ Notification 2011, the coastal regulated areas are categorised under the following four categories:

Figure 1.2: Coastal Regulation Zones



CRZ I includes those areas which are ecologically sensitive and which form the geomorphological features and play a crucial role in maintaining the integrity of the coast.

CRZ II includes those areas within the existing municipal limits or other urban areas which are substantially built-up and have been provided with drainage, roads, and infrastructural facilities.

CRZ III includes the areas that are relatively undisturbed, and which do not belong to either CRZ I or II. This includes coastal zones in the rural areas, areas within the existing municipal limits, or other urban areas which are not substantially built up.

CRZ IV includes the area from LTL to twelve nautical miles on the seaward side and inland waters influenced by the tide.

Areas requiring special consideration: Such areas are identified to protect the critical coastal environment and difficulties faced by local communities. CRZ areas of (i) Greater Mumbai Municipal limits (ii) Goa and (iii) Kerala and other Critically Vulnerable Coastal Areas (CVCAs) such as Sundarbans region of West Bengal and Gulf of Kachchh are identified as areas requiring special consideration under this Notification.

1.4.2 CRZ clearance process

The Project Proponent (PP) shall submit the project proposal to the State/UT CZMA concerned along with all the relevant documents prescribed in the CRZ Notification.

The State CZMA concerned shall examine the above documents as per the approved SCZMP and CRZ Notification and make recommendations within 60 days from the date of submission of the documents to the relevant approving authority. The approving authorities prescribed by statute are shown in **Table 1.1** below:

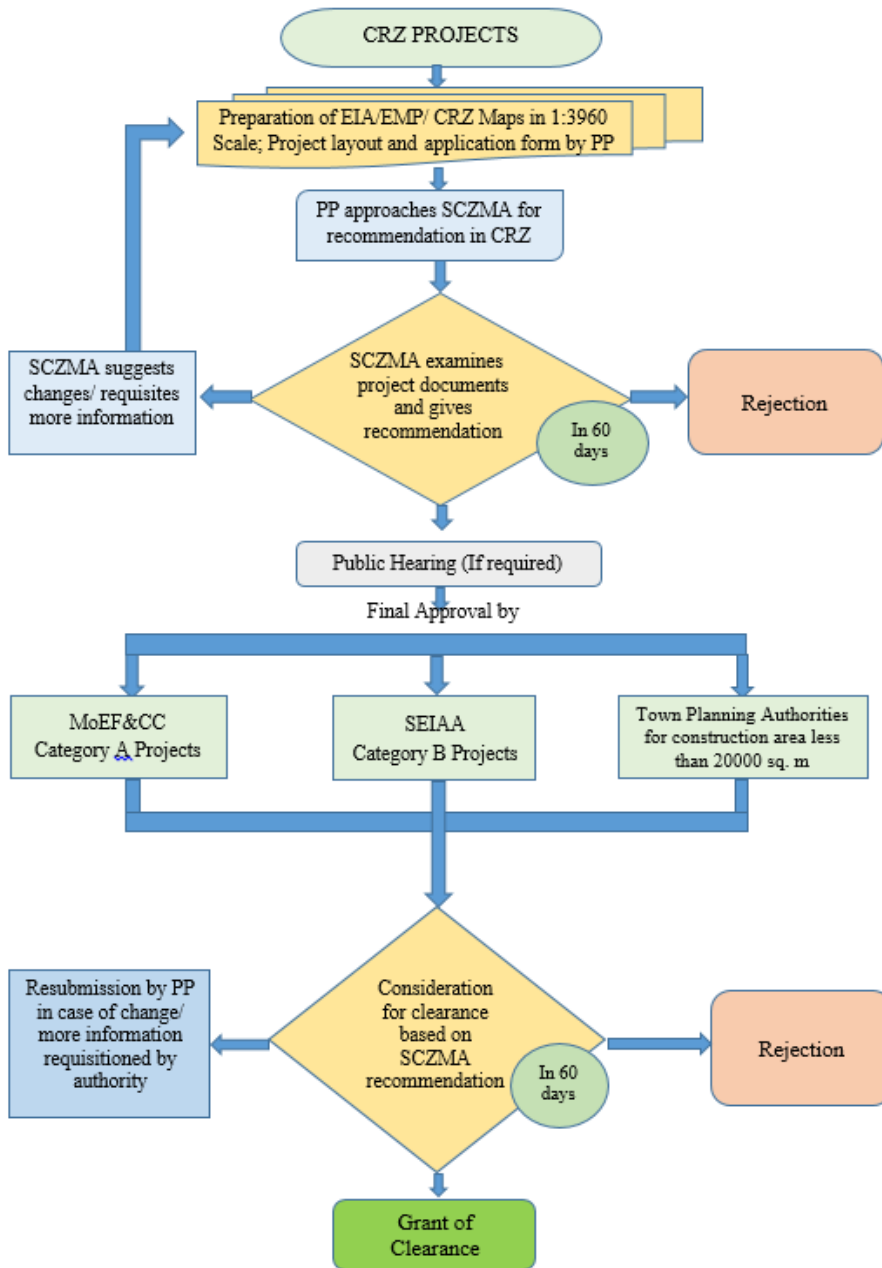
Table 1.1: Category of projects and approving authority

Category of projects	Authority to which the proposal is required to be sent for CRZ clearance
Category-A projects as per EIA Notification, 2006 Projects mentioned in Clause 4 (ii) of CRZ Notification, 2011	MoEF&CC
Category-B Projects as per EIA Notification, 2006	SEIAA
Projects in the CRZ II areas having less than 20,000 Sqm. construction area	Town planning authorities

Source: CRZ Notification, 2011

MoEF&CC or the concerned State Government authority shall consider such projects based on the recommendations of the concerned State CZMA within 60 days. The CRZ clearance process flowchart is shown below:

Figure 1.3: CRZ clearance process



1.5 Integrated Coastal Zone Management Project

Integrated Coastal Zone Management (ICZM) approach considers all the sectoral activities that affect the coast and its resources. Further, it addresses environmental, economic, and social issues in an integrated manner. The GoI acknowledged the necessity of adopting an integrated and coordinated approach to the management of the coastal zone. An agreement was entered into by GoI with the World Bank, in 2010 for the ICZM project. The objective of the project was to assist the MoEF&CC to build capacity for the implementation of a

comprehensive ICZM approach in the country. For the pilot of the ICZM approach, three States *viz.* Gujarat, Odisha, and West Bengal were selected by the GoI.

Gujarat Ecology Commission (GEC) was selected as the State Project Management Unit (SPMU) for Gujarat. During 2010-20, ₹ 410.91 crore was incurred on the ICZM project in the State. It was funded by the World Bank, Government of India, and Government of Gujarat (GoG) with a share of 77, 13, and 10 *per cent* respectively. In the State, the following six agencies were selected as Project Executing Agency (PEA) for the ICZM Project:

- 1) GEC - for socio-economic development of villages and mangroves restoration.
- 2) Gujarat Pollution Control Board (GPCB)- for constructing a laboratory for monitoring coastal water pollution in the Gulf of Kachchh.
- 3) Gujarat Ecological Education and Research (GEER) Foundation - for Capacity Building and Coral Plantation.
- 4) Jamnagar Municipal Corporation - for constructing sewage treatment plant to reduce marine pollution.
- 5) Forest Circle, Kachchh, and Marine National Park and Marine Sanctuary (MNP&MS), Jamnagar- for conservation and protection of coastal resources, mangroves, and coastal ecosystem.
- 6) Bhaskaracharya Institute of Space Application and Geo-Informatics (BISAG)- for development of Gujarat Coastal Geo-Spatial Information system.

1.6 Audit Objectives

The Performance Audit of conservation and management of coastal ecosystems was conducted to assess whether:

- (i) an institutional mechanism exists in State to regulate the activities in CRZ areas as per the provisions of CRZ Notification 2011;
- (ii) CRZ clearances granted by the Government are as per due procedure and with due regard to the coastal environment and the post clearance monitoring mechanism is carried out effectively;
- (iii) the project development objectives under Integrated Coastal Zone Management Project (ICZMP) were successful; and
- (iv) the measures taken up by the Government towards achieving the targets under SDG-14 were effective.

1.7 Audit Criteria

The following were adopted as Audit criteria for the Performance Audit:

- Environment (Protection) Act, 1986 and EIA Notification, 2006,
- CRZ Notification of 1991, 2011 and district wise CZMPs,
- General Financial Rules and World Bank Procurement Guidelines,
- National Indicators developed by MoSPI for SDG 14,
- Agenda and minutes of the meetings of GCZMA, SEIAA, and SEAC,
- EC and CRZ Clearance recommendations by GCZMA along with conditions,
- EC and CRZ Clearances granted by SEIAA/ MoEF&CC and conditions imposed therein,
- Project-specific records, including Terms of References, Environmental Impact Assessment (EIA) and Environmental Management Plans (EMPs), and
- Programme/ Project Reports in respect of ICZMP.

1.8 Audit Scope

The Performance Audit covered the period from April 2015 to March 2020. During January 2021 to October 2021, Audit examined the CRZ and related environmental clearances granted, the CRZ violation cases reported, action taken against each one of them, implementation of ICZMP in the State along with achievement in capacity building as envisaged and progress achieved by the State concerning SDG-14.

1.9 Audit Methodology

An entry conference was held (January 2021) with the Additional Secretary, Forests & Environment Department (F&ED), Government of Gujarat; Principal Chief Conservator of Forest and Head of the Forest Force (PCCF&HoFF) and Member Secretary, GEC wherein the audit scope, methodology, and objectives were discussed. Field Audit included examination of records at GCZMA, SEIAA, GEC, Other PEAs of ICZMP, and physical inspection of sites. The Exit conference was held on 02 September 2022 at the level of Additional Chief Secretary, F&ED and Member Secretary, GEC. The replies of the Government and discussions of the Exit conference have been appropriately incorporated in the Report.

1.10 Audit Sampling

During the period 2015-20, ninety-two CRZ/ Composite clearances were recommended by GCZMA. These included recommendations for 40 Category “A” projects to MoEF&CC, 33 Category “B” projects to SEIAA, and 19 projects to the local town planning authorities. Sample selected for audit is tabulated as below:

Table 1.2: Details of CRZ recommendations made by GCZMA during 2015-20

Description	Category A project		Category B project		Town planning authorities	Total Clearance
	Only CRZ Clearance	Composite Clearance	Only CRZ Clearance	Composite Clearance		
Total	25	15	17	16	19	92
Sample	5	3	3	2	00	13

Source: Information provided by GCZMA

The projects had been selected based on investment and sectors as well as recommendations of experts.

Further, during 2015-20, 12 complaints of violation of provisions of the Environment (Protection) Act, 1986/ CRZ regulations were reported to GCZMA. In addition to above, 20 complaints of violations were received directly by four³ DLCs. These violation cases were inspected by GCZMA and/or respective DLCs. All violation cases were selected for detailed scrutiny.

1.11 Acknowledgement

Audit acknowledges the cooperation and assistance extended by the F&ED, Gujarat Coastal Zone Management Authority, Gujarat Ecology Commission, and other project implementation agencies of ICZMP and staff at Secretariat and Regional Offices of Gujarat Pollution Control Board.

³Bharuch, Devbhumi Dwarka, Kachhh and Surat.

