

Chapter 8: Conclusion and Recommendations

Coastal and estuarine ecosystems deliver a wide range of goods and services, many of which provide material benefits such as food supply, regulation of water-quality processes, storm protection, and carbon storage. For conservation of the coastal ecosystem and ensure its sustainable use, the Government of India introduced the CRZ notifications and the ICZMP project. We audited the CRZ notifications and the implementation of ICZMP project to arrive at conclusions about their efficacy and effectiveness.

1. Adequacy of Institutional mechanism at Centre as well as State to regulate the activities in CRZ areas as per the provisions of CRZ notification 2019

Our examination of the institutional mechanism to regulate the activities in CRZ areas as per the provisions of CRZ Notification 2019, existing at Centre/States showed that the NCZMA was not a permanent body with defined members. NCZMA largely met to clear the proposal for projects and did not fulfil the other research and advisory role assigned to it. The Expert Appraisal Committee lacked technical members in the meetings, thus its recommendations lacked scientific basis. SCZMAs in the states were not reconstituted in time, lacked participation from important stakeholders, were not sufficiently resourced, and cleared projects without quorum. DLCs were not reconstituted in many states, and lacked participation from significant stakeholders; thus, could not function effectively to enforce the CRZ notifications. As such, deficiencies in the constitution and functioning of NCZMA, SCZMA and DLCs would dilute their effectiveness in addressing challenges in ensuring sustainable development of the coastal areas. Also, the different agencies involved in implementation of CRZ notifications could not ensure timely preparation of Coastal Zone Management Plans as well as plans for the protection of Ecologically Sensitive Areas in the coast which was a key to the sustainable development of the coastal areas. Thus, the institutional mechanism to regulate activities in the coastal areas as per CRZ notification was weak and could not function as effectively as envisaged in the CRZ notifications.

2. Procedure for grant of CRZ clearances by the Government, to conserve coastal ecology

We examined whether CRZ clearances granted by the Government were as per due procedure, to conserve coastal ecology. As per CRZ notifications, only permitted activities are allowed in different coastal zones and projects are approved, based on the environment impact studies and the mitigations plans to address risks posed to the coastal ecology. Audit observed that even though the environment impact studies had various inadequacies like preparation of environment impact reports by non-accredited consultants, use of old baseline data, lack of complete analysis of environment impacts, disaster management not fully addressed in the EIA reports, projects based on these EIA reports were approved by MoEF&CC/SCZMAs.

Further, mitigation plans to address the risks to environment posed by these projects were not adequate as the risks were only cursorily addressed in many projects. Cumulative impact studies were not prescribed as a precondition for approval, to check if the addition of the project would alter the coastal ecology. Further, MoEF&CC accepted and did not verify critical environment parameters for the project. Audit also observed that the process of public hearing which would have valuable input on impacts to local community were short-changed. Audit also observed that clearances to projects were given without considering that they were located in Ecologically Sensitive Areas, which would affect the ecosystem balance of these fragile and vulnerable areas. Grant of project approvals in excess of its authority and without mandatory documents by SCZMAs would weaken the checks on the approval mechanism and hinder conservation of the coastal ecology. Audit also observed that the CRZ notifications were amended to allow for specific projects, hence mitigation plans to reduce the risks to the coastal ecology that these projects would lead to, would not be ensured.

Hence the safeguards put in place to ensure that the projects did not impact the environment were contravened. As such, these projects could have a detrimental impact on the coastal ecology.

3. Safeguard of coastal ecosystems by post clearance monitoring as well as enforcement mechanism of CRZ notifications

Monitoring of projects after their approval by MoEFF&CC and its agencies ensures that the conditions under which the project was approved are being complied with. Audit examination showed that MoEF&CC and its regional offices failed to ensure compliance to conditions stipulated in the clearances. Further, the project authorities did not submit mandated reports timely, which would have facilitated the monitoring process. Critical clearances like Consent to Operate and Consent to Establish were not taken by the project proponents. Thus, the post clearance mechanism was not effective in ensuring compliance to the provisions of CRZ notifications. As such, the risks posed by these projects to the coastal ecology would go unchecked.

Further, audit observed that the enforcement mechanism to detect and punish violations of CRZ notifications suffered from a lot of infirmities. With the help of satellite imagery, Audit observed that there were irregular development activities in CRZ 1 areas like construction on the nesting sites of Olive Ridley turtles in Odisha and construction of racetrack in CRZ 1 area in Pattipulam, Tamil Nadu. With help of GIS tools, we identified unreported violation such as irregular constructions in CRZ 1A zone by construction of Beach Resorts in Kachipuram district and jetty extensions built in the No development Zone in Devbhumi, Dwarka. Audit also observed encroachment and CRZ violations in the eco-fragile Vembanad Lake and Akkulam lake region, construction of a mall in NDZ in Thiruvananthapuram, road construction in No Development Zone in Udipi district, Karnataka, construction of a commercial residential project in wetland area of Vembanad Lake. Further, audit observed that many industries caused pollution of the coastal areas like coastal aquaculture units in Guntur district, Andhra Pradesh and ice plants and fish packing units in CRZ areas of Kanyakumari district, Tamil Nadu.

No effective action was taken by authorities like SCZMA/Pollution Control Board/DLCs. As such, in the absence of effective action against violations, there was no deterrence and degradation of the coastal areas continued. Thus, the post clearance monitoring and enforcement of CRZ notifications were ineffective which would result in irreversible changes to the coastal ecosystem.

Audit also sampled two coastal districts from each of the nine coastal states to assess the health of vulnerable and fragile coastal ecosystems due to impacts of anthropogenic activities. We found that coastal biodiversity like corals in the Gulf of Mannar Biosphere Reserve and in Goa faced threats due to absence of data to monitor their spread and condition. The Coastal Sand Dunes in Goa suffered as construction permission was given in the areas where they existed. Mangroves were also not fully conserved as instances of cutting of mangroves for development projects were observed in Goa. In Gujarat, SCZMA failed to restore mangrove destruction in Kutch and impermissible activities affecting mangroves was allowed in the Khazan lands in Goa.

Further, the coastal ecology suffered due to municipal sewage discharge into the sea at coastal districts of Karnataka, and Discharge of untreated sewage into the sea by the Municipal Corporations/ Municipalities in Maharashtra. Audit also observed waste from fish processing industry at Veraval, Gujarat being dumped in the coastal waters, and aquaculture waste discharge at Coringa Wildlife Sanctuary, Andhra Pradesh.

As such, despite the existence of CRZ notifications, coastal areas continued to be impacted by anthropogenic activity, affecting vulnerable biodiversity and resulting in their degradation.

4. Achievement of Project development objectives under Integrated Coastal Zone Management Programme (ICZMP)

The aim of ICZMP programme was capacity development in sustainable coastal management for India's coastal zones, and piloting integrated coastal zone management approaches in Gujarat, Odisha and West Bengal. We observed that at the central level, preparation of Integrated Management Plans for Critically Vulnerable Coastal Areas (CVCAs) could not take place and there was no ground truthing of the hazard line. This impacted the conservation of the CVCAs and the objective of safeguarding them was defeated. Audit scrutiny of ICZMP program in Gujarat showed delay in the preparation of the ICZM Plans and the capacity of various stakeholder institutions were not developed. In Odisha also, the preparation of ICZM plans were delayed, capacity building measures at Odisha State Pollution Control Board (OSPCB) and Chilika Development Authority were insufficient. Further, measures to protect of Olive Ridley turtles in Odisha were inadequate, capacity of labs for analyses of coastal water data was inadequate and alternate livelihood initiatives did not succeed. Measures taken under ICZMP for conservation of the mangroves and shore line protection at Pentha in Odisha were not successful. Audit examination of ICZMP in West Bengal also showed delay in preparation of ICZM plans, and activities taken up under ICZMP like sewage treatment plant at Digha, solid waste Management at Digha, renovation of fish auction centre at Digha were

ineffective in stopping pollution of the coastal areas. As such, the ICZM project was not very successful in the development of capacity for sustainable coastal management for India's coastal zones.

5. Evaluation of the measures taken up by the Government towards achieving the targets under SDG-14.

Audit also examined the efforts of the Government towards achieving targets under the SDG 14 which aims to conserve and sustainably use the oceans, seas and marine resources for sustainable development. We found that all the stakeholders in the field of coastal management were not mapped, Ministry of Earth Sciences was yet to prepare an indicator related to plastic debris density which was a vital part of action to preserve the coastal and marine ecosystem. Further, National indicators for SDG 14.2 were not completely defined in terms of activities and outputs. Implementation of CRZ as well as ICZMP involves a sequence of activities that begin with the preparation of CZMPs, demarcation of CVCAs, demarcation and ground marking of various spatial reference lines. However, these deliverables were not brought into the indicator framework. There was a lack of sufficient data collection centres to monitor coastal water quality which would affect the analyses that were to be conducted to understand the data patterns regarding coastal water quality over time. Further, states had not localised their Indicator frameworks to suit their local conditions. As such, the measures taken up by the Government towards achieving the targets under SDG-14 need further impetus.

Recommendations

1. SCZMAs and NCZMAs may be made as permanent bodies with full time members to carry out all the mandated activities for protecting the coastal environment.
2. The DLCs may be formed and reconstituted without delay in all the relevant districts. The composition of DLCs may be inclusive in nature representing all the relevant stakeholder sectors.
3. MoEF&CC needs to ensure that the NCZMA/ SCZMAs share information regarding their discussions/minutes of meetings with the public in a uniform manner. Interactive Grievance Redressal Mechanism may be adopted by the SCZMAs.
4. The Ministry may ensure that the PP carry out in-depth ecological evaluation of the project environment before granting the clearances to the projects as well as enforce the practice of cumulative assessments already defined in the EIA Notification, 2006.
5. MoEF&CC may ensure that the PPs submit a viable EMP addressing all the risks to the environment and the EMP along with the Impact Prediction analyses are largely coherent. Also, the mitigation proposals may be clearly brought out in the EMP and costed.
6. MoEF&CC may revisit the roles and composition of different agencies to strengthen the post clearance monitoring.

7. Expert cells, which are well versed in GIS tools may be created in DLCs to effectively and efficiently monitor the changing landscape on the coastline and track irregular developments. Presence of such a surveillance mechanism would not only track irregular activities but would also serve as a deterrence tool.
8. The State Governments may make necessary efforts for mapping and preparation of Management Plans for the coral reefs, turtle nesting sites etc.
9. Efforts may be made by MoEF&CC to notify the IMPs for Ecologically Sensitive Areas at the earliest.
10. MoEF&CC should ensure deploying sufficient manpower with technical expertise at SICOM and various institutes strengthened under the project. Efforts should be made to rationalise the manpower deployment to ensure optimum utilisation.
11. MoES and MoEF&CC may review the stakeholder mapping to ensure the inclusion of all relevant institutions with respect to SDG 14 targets.
12. Localisation of the indicators should be prioritised in the stakeholder states by ensuring formulation of District Indicator Frameworks in the states.



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