

ENVIRONMENT DEPARTMENT

3.10 Implementation of Coastal Regulation Zone in West Bengal

3.10.1 Introduction

The length of the coastline in West Bengal is 280 km with a coastal zone⁷⁰ which is sub-divided into two different coastal environments (i) Hooghly estuarine plain⁷¹ having huge mangrove diversity⁷² and species diversity⁷³ and (ii) Digha-Sankarpur-Junput coastal plain⁷⁴ which contain mangroves and salt marshes and are rich in fish diversity. This zone supports an approximate population of seven million. According to a study by Space Applications Center,

Bangalore in 2012, almost 39 per cent of this coastal zone is used for agriculture, 21 per cent is occupied by human habitations and three per cent is used for aquaculture.

Infrastructure like railways,

roads, ports *etc.*, and industrial activity including mining, brick kilns *etc.*, exist in these areas, all of which place tremendous stress on the coastal ecology. Over the years, as a result of human interventions, mangroves have receded and many floral and faunal species are also facing extinction.

Ministry of Environment, Forest and Climate Change (MoEF&CC) had issued (1991) Coastal Regulation Zone (CRZ) Notification which was subsequently replaced (January 2011) with CRZ 2011. The notification was issued with a view to ensuring the livelihood security of fishermen and other local communities living in the coastal areas, to conserving and protecting coastal stretches, its unique marine environment and also to promoting development in a sustainable manner. The Notification restricted setting up or expansion of any industry, operations, processes or manufacture/ handling/ storage/ disposal



Figure 3.1: Coastal areas of West Bengal

⁷⁰ Stretching from LTL to 500 m (as CRZ) inland and upto the landward extension of the successive series of older sand dune stretching up to Orissa Coast Canal in the western part; and LTL to Dampier-Hodges line, which serves as the boundary of the Sundarban Biosphere Reserve.

⁷¹ It is characterised by a network of creeks encompassing small islands with mangrove vegetation and off-shore linear tidal shoals from Sagar Island to the border of Bangladesh to the east.

⁷² More than 30 species.

⁷³ Like Royal Bengal Tiger, over 270 bird species, over 45 reptile species, at least 11 amphibian species, over 120 fish species and more than 330 plant species.

⁷⁴ This lies to the west of Hooghly estuary with rows of sandy dunes separated by clayey tidal flats from Sagar Island to Orissa border to the west.

of hazardous substances in coastal areas. For implementation, regulation and monitoring of activities in the coastal areas, West Bengal State Coastal Zone Management Authority (WBSCZMA) was constituted in September 1998 and re-constituted over the years. Further, with a view to developing capacity and institutions to effectively implement CRZ Notification, to control pollution of coastal waters and to expand livelihood options for coastal communities, GoI had approved (June 2010) the Integrated Coastal Zone Management (ICZM) project with the aid of World Bank, in three coastal states including West Bengal.

3.10.2 Audit Scope and objectives

An Audit was carried out between February and June 2016 covering the period between 2010-11 and 2015-16 to assess whether the coastal areas were being conserved by:

- Necessary institutional mechanism for implementation of CRZ Notification 2011 including zoning and classification of coastal areas;
- Effective enforcement of CRZ notification of 2011; and
- Project implementation, including ICZM projects in line with CRZ Notification of 2011.

The criteria for audit was derived from the CRZ Notifications, Environment Protection Act, 1986, Environment Impact Assessment (EIA), 2006 and relevant orders, guidelines and manuals issued by Department of Environment (DoE), MoEF&CC, WBSCZMA and West Bengal Pollution Control Board (WBPCB).

Audit Findings

3.10.3 Institutional arrangements and its functioning

WBSCZMA is primarily responsible for protecting and improving the quality of coastal environment as well as preventing, abating and controlling environmental pollution in coastal areas of West Bengal. It was constituted twice, in June 2012 and September 2015, during the period of audit.

Role of WBSCZMA as envisaged in CRZ Notification 2011 is as follows:

- Examination of proposals for changes in classification of CRZ areas and Coastal Zone Management Plan (CZMP) received from State Government and making specific recommendations to the National Coastal Zone Management Authority (NCZMA) on this issue;
- Inquiry into cases of alleged violations of the provisions of CRZ regulations;
- Filing complaints and taking actions for non-compliance of its directions;
- Identification of ecologically sensitive areas in CRZ and formulation of area-specific management plans for such identified areas;
- Identification of coastal areas highly vulnerable to erosion/ degradation and formulate area-specific management plans for such identified areas;

- Identification of economically important stretches in the Coastal Regulation Zone and preparation of Integrated Coastal Zone Management Plans for the same;
- Submission of such plans to the NCZMA for examination and approval.

Audit observations with regard to constitution of WBSCZMA and its functioning are discussed below:

3.10.3.1 Deficiencies in composition of WBSCZMA

MoEF&CC had prescribed norms (February 2005) for the composition of State Coastal Zone Management Authorities (SCZMAs) according to which SCZMAs should comprise of experts, ex-officio members of various concerned Departments and local bodies. In West Bengal, between January 2011 and March 2016, WBSCZMA was constituted twice, once in June 2012 and then in September 2015. It was observed that composition of WBSCZMA suffered from infirmities as discussed below:

(a) Non-representation of WBPCB, Commerce & Industries and Tourism Departments

Audit observed that West Bengal Pollution Control Board (WBPCB), Commerce & Industries and Tourism Departments were not included in the WBSCZMA of 2012 and 2015 in deviation of the recommendation of MoEF&CC. WBPCB was the primary regulatory body for control/ monitoring of pollution and issues consent to projects/ industries to operate and its inclusion was necessary from the conservation and pollution control perspectives. Inclusion of Tourism Department was important to gauge the increasing pressure of tourist flow in coastal tourist destinations *vis-a-vis* carrying capacity, while scrutinising proposals for construction of tourist infrastructure in the coastal areas. It was observed that WBSCZMA did not include any representative from Tourism Department even though six tourist projects involving ₹ 97.07 crore were discussed (during 2012-15) for approval in meetings of WBSCZMA. Commerce and Industries (C&I) Department was also not included in WBSCZMA, despite the fact that it had recommended nine industrial projects involving aggregate investment of ₹ 12311.77 crore in West Bengal during 2011-16. It was also observed that in violation of MoEF&CC guidelines, no representations from local bodies, fishing community and NGOs were ensured by the Authority. Lack of participation from important stakeholders thus deprived the WBSCZMA of getting a complete perspective, besides their involvement and oversight over tourism/ industrial activities in Digha, Mandarmoni and Sundarban areas which had wide ramifications for sustainability of coastal areas as further observed in **Paragraph 3.10.6.2.**

WBSCZMA stated (December 2016) that WBPCB was kept as an invitee member and non-official members were not incorporated due to fund constraint. The reply was not tenable as WBPCB had attended only two out of 17 meetings held during the period under audit and WBSCZMA had not proposed to MoEF&CC inclusion of local bodies, representatives of fishing community or NGOs. Further, it was also observed that bank account of

WBSCZMA was not opened to utilise funds received from (April 2002) MoEF&CC.

(b) Matters discussed in meetings

The main function of WBSCZMA was to take measures for protecting and improving the quality of the coastal environment and preventing, abating and controlling environment pollution in the coastal areas of the State. It was observed that between January 2011 and December 2015, WBSCZMA had convened 17 meetings. It was further observed that in none of these 17 meetings, issues like violations of CRZ notification, preparing Coastal Zone Management Plan (CZMP), generating awareness and training about CRZ, enforcement etc., were discussed. Examination of minutes of meetings of WBSCZMA showed that in 15 out of 17 meetings, only project proposals were discussed and recommended. It was also observed that WBSCZMA approved all 20 projects submitted to it, even though 10 of these projects were not permissible under CRZ 2011, as discussed in detail in **Paragraph 3.10.5**.

Thus, WBSCZMA was reduced to only a project approval body. This was contrary to the objective of setting up of WBSCZMA as envisaged in the notifications.

3.10.3.2 District Level Committees

According to CRZ regulations, District Level Committees (DLCs) under Chairmanship of the concerned District Magistrates were to be constituted to assist WBSCZMA. As per GoWB resolution (January 2012), DLCs were responsible for protecting and improving coastal environment, identification of violations, compliance of CRZ Notification, taking action on violation as per Environment Protection Act, 1986 etc. Further, as per this resolution, DLCs can forfeit and confiscate materials and assets from the site of violations and the assistance of district police in this regard can be taken. The District Magistrate was to nominate a minimum of three representatives of traditional coastal communities/ fishermen and two eminent experts in coastal issues as members of DLC. DLC was also entrusted with taking measures for protecting and improving the coastal environment, identification of violations and conservation of the coasts and was to meet at least once in two months. In West Bengal, DLCs were set up (January 2012) in all three coastal districts⁷⁵. Audit observed the following deficiencies in this regard:

(a) In 50 months (January 2012 to March 2016) since its formation, each of the three DLCs should have convened 25 meetings. It was seen that two DLCs did not meet even once and DLC, Purba Medinipur had convened only two⁷⁶ meetings.

(b) Representatives of traditional coastal communities or fishermen or eminent experts were not nominated in any of the three DLCs.

(c) DLC, Purba Medinipur had recommended (April 2013) the construction of concrete shops complex for rehabilitation of vendors, beautification and landscaping of beaches, construction of concrete toilet blocks and concrete watch towers at Digha. DLC had recommended the

⁷⁵ North 24 Parganas, South 24 Parganas and Purba Medinipur

⁷⁶ April 2013 and August 2015

works on the ground of employment of local population, improving aesthetic value and tourist safety even though all these activities were prohibited under CRZ Notification 2011. These activities were subsequently approved by WBSCZMA and were undertaken.

(d) Chief Environmental Officer, DoE had observed in (August 2008) that hotels and resorts in Mandarmoni in Purba Medinipur District were using the beach as a pathway for plying their vehicles. The Department identified risks to environment as a result of this activity which included compacting the top layer of the beach sand which is the habitat of numerous creatures like red crabs and similar organisms, vulnerabilities to climate change as a result of destruction of beach *etc.* The DLC was required to identify violations for initiation of action under Environment (Protection) Act, 1986. Although the DLC, Purba Medinipur discussed (April 2013) this matter but did not restrict the plying of vehicles on Mandarmoni beach and Audit noticed these activities continued to pose a threat to coastal ecosystem there.



Figure 3.2: Plying of vehicles on Mandarmoni Beach

As such, the DLCs did not effectively perform the functions assigned to them in CRZ Notification. Being situated at the local level, it could have functioned as an effective mechanism for spotting and reporting CRZ violations, which it did not do and WBSCZMA was left with lack of an effective violation-reporting mechanism.

3.10.4 Zoning and classification of coastal areas

CRZ Notification 2011 had classified the entire coastal area into four categories, CRZ I, II, III and IV for the purpose of conserving and protecting the coastal areas, with CRZ I being the most ecologically sensitive as detailed in the table 3.3.

Table No. 3.3: Classification of CRZ areas

CRZ I	CRZ II	CRZ III	CRZ IV	Critically Vulnerable Coastal Areas
Mangroves, Corals- reefs and associated biodiversity, sand dunes, mudflats which are biologically active, national parks, marine parks, turtle nesting grounds, horse shoe crabs habitats etc.	Areas that have been developed up to or close to the shoreline.	Areas that are relatively undisturbed and those do not belong to either CRZ I or II.	The water area from the Low Tide Line to 12 nautical miles on the seaward side.	Areas requiring special consideration such as Sundarban region of West Bengal.

Schematic diagram of classification of CRZ Areas

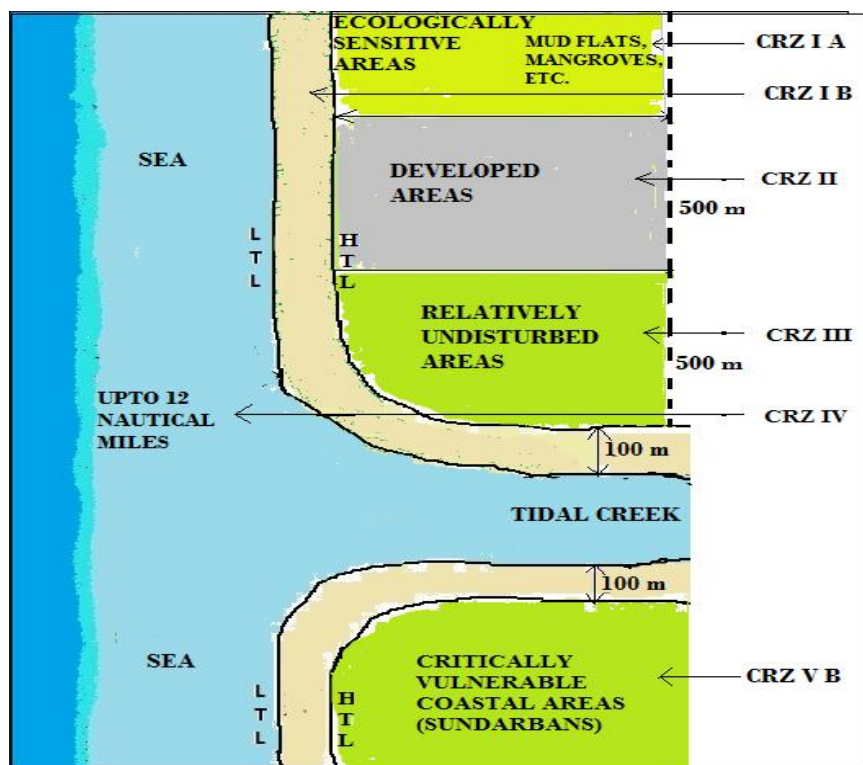


Figure 3.3: CRZ areas classification

Audit observed that mapping and zoning of the coastal areas in West Bengal, as specified in CRZ Notification 2011 had not been finalised as discussed in subsequent paragraphs:

3.10.4.1 Delay in preparation of CZMP

Coastal Zone Management Plan (CZMP) is a land use map of the coastal areas⁷⁷. All developmental activities listed in CRZ Notification 2011 were to be regulated by State Government/ WBSCZMA within the framework of such approved CZMPs. As such, preparation of CZMP was the first step in preserving the coastal areas. It was observed that GoWB was required to prepare its CZMP by January 2013 and submit the same to MoEF&CC for approval. CRZ 2011 had also stipulated that till the new CZMP was approved, the old CZMP would be valid. MoEF&CC extended this validity in various spells till January 2017, in respect of all coastal states, who could not prepare new CZMP till then.

In West Bengal, the new CZMP was yet to be prepared as of June 2016 due to lack of trained manpower in the agency⁷⁸ entrusted with the job, hence old CZMP was to be followed as per MoEF&CC prescriptions. The old CZMP for the State was approved in September 1996, subject to several general and special conditions through which MoEF&CC had classified some of the

⁷⁷ Consists of demarcation of high and low tide line along the coast on a scale of 1:25,000 to clearly delineate geo-morphological features of the coast and classification of the coast into four zones, depending on their geomorphology.

⁷⁸ Institute of Environmental Studies and Wetland Management- an autonomous body under DoE, GoWB which is accredited by GoI for CRZ maps.

coastal areas in different zones⁷⁹. It was observed that GoWB had modified the old CZMP incorporating only the general conditions and re-submitted (February 1997) it to MoEF&CC. For the special conditions, GoWB had proposed (October 2002) for re-classification of five sectors of Digha Sankarpur Development Authority (DSDA) as CRZ III (to prevent new construction) instead of CRZ II. MoEF&CC dismissed the proposal in September 2003. As such, the old CZMP remained unapproved by MoEF&CC and all project approvals were given on the basis of that unapproved CZMP which was a violation of CRZ 2011.

Thus, not only did WBSCZMA fail to prepare the new CZMP, but also could not get the old CZMP approved by incorporating the special conditions, which led to violation of CRZ Notification and threatened the coastal ecology. Audit conducted joint site visits (June 2016) to assess the present status of the five disputed sectors in the old CZMP and it was found that 'no-construction zone' was violated and coastal ecology was threatened as two sectors were populated with hotels and holiday homes, one sector was allotted to Railways and another was developed as bus terminus.

WBSCZMA stated (December 2016) that CZMP could not be prepared due to non-finalisation of the CRZ maps. It further stated that National Centre for Sustainable Coastal Management (NCSCM), Chennai was subsequently handed over the charge for preparation of maps. The reply was not tenable as WBSCZMA initiated the process only after a lapse of 23 months and after NCSCM took the charge of mapping in September 2014, WBSCZMA failed to produce the detailed cadastral⁸⁰ map which was required by NCSCM.

3.10.4.2 Local level maps for use of local bodies not prepared

One of the primary objectives of CRZ 2011 was the livelihood security of fishermen and other local communities living in the coastal areas. In order to safeguard their interests, State Government was to prepare local level coastal management maps for use of local bodies for determining the CRZ and to enable the local bodies and other agencies to facilitate implementation of the CZMP. However, these were not prepared as of June 2016. As a result, approvals to projects were not based on different zones as identified by local level maps. In this context, Audit observed that Ramnagar-I Panchayat Samity had approved (between January 2011 and February 2016) 181 building plans in five⁸¹ coastal mouzas, despite absence of local level maps and without assessing whether those buildings fell in CRZ areas, and required clearance from WBSCZMA. As per information furnished by concerned BDO, a phenomenal increase in number of commercial establishments in these mouzas was recorded as discussed in **Paragraph 3.10.6.2**.

⁷⁹ (i) For Digha Development area sectors A-1, B-5, F-1, F-2, H-1 and N as CRZ III, (ii) Haldia Port Complex Area was categorised as CRZ-II. (iii) A CRZ of 500m throughout will be applicable for Hooghly river, (iv) In case of river Hooghly, CRZ was up to Southern Municipal limit of Diamond Harbour. (v) The Dunes/ Runnels, Gangasagar and Fraserganj were classified as CRZ I etc.

⁸⁰ The map indicating the boundaries, use and ownership of land.

⁸¹ Economic Hotel Sector, Gobindabasan, Paschim Gadhaharpur, N-2 sector, Mini Holiday Sector, Khadalgobra.

3.10.4.3 Identification and mapping of ecologically sensitive, economically important and highly vulnerable areas not done

CRZ 2011 classified CRZ I as being the most ecologically sensitive coastal area containing geo-morphological features⁸² which played a role in maintaining the integrity of the coast. To preserve this habitat, SCZMAs were entrusted with the identification and preparation of management plans of ecologically sensitive areas, including coastal areas highly vulnerable to



Figure 3.4: Beach at Tajpur-littered with waste

erosion/ degradation in economically important stretches. In pursuance of this, MoEF&CC had convened (September 2014) a meeting to review the status of mapping of ecologically sensitive areas. It asked State Governments to make available the existing data for Ecologically Sensitive Areas (ESAs) to National Centre for Sustainable Coastal Management (NCSCM) by October 2014.

Scrutiny showed that due to delay in handing over the required inputs to NCSCM, mapping of ESA in West Bengal could not be done as of June 2016. Further, no identification and mapping of coastal areas highly vulnerable to erosion/ degradation in economically important stretches was also done by WBSCZMA. As a result, the ecologically sensitive habitats in CRZ I remained vulnerable. A note of Chief Environment Officer, DoE stated in 2008 that dune formation was getting affected due to creation of man-made infrastructure, which had impact on coastal stability. Creation of hotels was also impacting beaches which were the habitat of numerous creatures like red crabs. This degradation is further illustrated by the fact that joint site verification to CRZ I revealed that areas like beaches in Tajpur and Digha Mohana which are the habitats of Horse Shoe shaped Red crabs, were found littered with waste.

3.10.4.4 Lack of identification of Critically Vulnerable Coastal Areas in Sundarban

Sundarban region (9630 sq km) of West Bengal has the largest (4200 sq km) mangrove forest in India and the only marshy mangrove tiger habitat in the world. The Sundarban Biosphere Reserve (SBR) supports 84 diverse flora and 1692 species of fauna. MoEF&CC had declared the entire Sundarban region as a Biosphere Reserve in 1989 to protect the unique habitat that was increasingly being encroached and fragmented. Considering its sensitive ecological status, CRZ 2011 had provided that Sundarban be declared as Critically Vulnerable Coastal Area (CVCA) to be managed with the

⁸² (a) Mangroves, in case area is more than 1000 sq m, a buffer of 50 m along the mangroves shall be provided; (b) Corals and coral reefs and associated biodiversity; (c) Sand Dunes; (d) Mudflats which are biologically active; (e) National parks, marine parks, sanctuaries, reserve forests, wildlife habitats and other protected areas under the provisions of Wildlife (Protection) Act, 1972, the Forest (Conservation) Act, 1980 or Environment (Protection) Act, 1986; including Biosphere Reserves; (f) Salt Marshes; (g) Turtle nesting grounds; (h) Horse shoe crabs habitats; (i) Sea grass beds; (j) Nesting grounds of birds; and (k) Areas or structures of archaeological importance and heritage sites.

involvement of the local coastal communities including fisher folks and Integrated Management Plans (IMPs) be prepared. Pending approval of IMPs, for satisfying the needs of the traditional inhabitants, limited activities were permitted on a case to case basis by WBSCZMA.

It was seen that GoWB had requested GoI (February 2011, May 2015 and June 2016) to exclude Sundarban Biosphere Reserve from Critically Vulnerable Coastal Area (CVCA) as clearance would be required under CRZ 2011 for any activity connected with the lives of people. This would adversely affect developmental aspirations of the local people. However, MoEF&CC did not respond (June 2016) to this request. Further, it was seen that WBSCZMA had not prepared IMPs for conservation and management of Sundarban till date of audit. In the absence of IMPs, this unique habitat was slowly disappearing as shown by receding mangroves. Regional Remote Sensing Centre, Kolkata⁸³ had conducted (January 2015) a study of satellite based analysis on loss of mangrove forest during last decade in Indian Sundarban. Satellite imagery done as part of this study showed that between 2003 and 2014, 9900 hectares of land had been eroded, out of which 1607 hectares of green cover was lost. Thus, focused approach towards conservation of Sundarban was missing, which was one of the objectives of CRZ 2011.

WBSCZMA stated (December 2016) that erosion and accretion happened in dynamic tidal waves, cyclones *etc.* However, the fact remained that WBSCZMA did not initiate any action for conservation of mangroves in Sundarban.

3.10.5 Project appraisals and approvals

According to CRZ 2011, the entire coastal area of a State was categorised under CRZ I, II, III and IV. Certain activities like setting up of new industries, manufacture or handling of oil, storage or disposal of hazardous substances, setting up and expansion of fish processing units, discharge of untreated wastes and effluents from industries, cities or towns and other human settlements, land reclamation, bunding or disturbing the natural course of sea water *etc.*, was totally prohibited in all zones of CRZ. Further, depending on this classification, certain limited activities were regulated in these four zones, as depicted in the table 3.4.

Table No. 3.4: Regulated activities allowed in CRZ

CRZ I	CRZ II	CRZ III	CRZ IV
No new construction except some infrastructure projects.	Buildings only on landward side, storage for petroleum/ natural gas, desalination plants, green energy projects <i>etc.</i>	No construction in No Development Zone (NDZ) except for repair/reconstruction of existing authorised structure not exceeding existing Floor Space Index, certain activities outside NDZ permitted like tourist lodges in designated areas, desalination plants, public rain shelters, toilets <i>etc.</i>	Only traditional activities allowed, no waste dumping.

⁸³ A unit of Indian Space Research Organisation

According to CRZ 2011, project proponents (parties interested to undertake any activities in CRZ) were to apply and submit documents⁸⁴ to WBSCZMA for prior clearance of permitted activities for projects in designated CRZ areas. WBSCZMA was to examine the documents for compliance with CRZ Notification and make recommendations within a period of 60 days from the date of receipt of application. WBSCZMA was to forward recommendations to MoEF&CC or State Environmental Impact Assessment Authority (SEIAA) for projects attracting provisions of Environment Impact Assessment 2006. MoEF&CC/ SEIAA was to then consider such projects for clearance, based on the recommendations of WBSCZMA.

It was seen that between January 2011 and December 2015, WBSCZMA had given CRZ clearances⁸⁵ to all the 20 project proposals submitted to it by the project proponents. Audit observed that out of these 20 projects cleared by WBSCZMA, activities to be taken up under 10 projects were prohibited under CRZ 2011. Audit also observed that in seven out of 20 projects approved by WBSCZMA, requisite detailed CRZ maps were not available with WBSCZMA to determine whether activities⁸⁶ proposed were permissible in the designated CRZ areas. Despite this gap, all these projects were approved. Further, all these 20 projects were required to obtain 'No objection certificate' from West Bengal Pollution Control Board (WBPCB), however, only one project proponent had applied to WBPCB till June 2016. Discrepancies in project appraisal by WBSCZMA are discussed below:

3.10.5.1 Eco-tourism project at Sagar Island under ICZM

Department of Sundarban Affairs had applied (January 2014) to WBSCZMA for CRZ clearance for an Eco-tourism project to construct visitor interpretation center, *dala* arcade (cluster of *Prasad* stalls), *Nat Mandir* (Prayer space opposite the temple) cum rain shelter and community facility center in the Gangasagar Island under ICZM project. This was to provide facilities to pilgrims who congregated in this area during the Gangasagar mela. It was observed that WBSCZMA had accorded (February 2014) the clearance⁸⁷ despite the fact that MoEF&CC had classified in the approval to CZMP

⁸⁴ 1.Rapid EIA Report (marine and terrestrial component) except Housing schemes and construction projects in CRZ;
2.Comprehensive EIA with cumulative studies for projects in the stretches classified as low and medium eroding by MoEF&CC based on scientific studies and in consultation with the State Governments and Union territory Administration;
3.Disaster Management Report, Risk Assessment Report and Management Plan;
4.CRZ map indicating HTL and LTL demarcated by one of the authorised agency in 1:4000 scale;
5.Project layout superimposed on the map;
6.The CRZ map normally covering seven km radius around the project site;
7. The CRZ map indicating the CRZ I, II, III and IV areas including other notified ecologically sensitive areas;
8. No Objection Certificate from the concerned State Pollution Control Board or Union Territory Pollution Control Committees for the projects involving discharge of effluents, solid wastes, sewage etc.

⁸⁵ Nine projects of State Government, seven of private parties and four of Central Government Undertakings

⁸⁶ Building of hotels, waste management plant, oil pipelines etc.

⁸⁷ Provided that it would be cyclone proof to ensure public safety

(September 1996), Gangasagar Island as CRZ I where any new construction was to be regulated.

WBSCZMA stated that these structures were actually multipurpose rain and cyclone shelters. The reply of WBSCZMA needs to be seen in the light of the fact that the approval was given for an eco-tourism project which involved larger scope of construction activities including re-construction of *Nat Mandir*, building of stalls for vendors *etc.*, and not just construction of rain/ cyclone shelters.

3.10.5.2 Vendor rehabilitation, beach amenities, landscaping and allied works under ICZM

Digha Sankarpur Development Authority (DSDA) had applied (March 2014) to WBSCZMA seeking clearance for a project of vendor rehabilitation, beach amenities, landscaping and allied works in Digha which fell under CRZ II and III areas. Audit observed from the CRZ map submitted by DSDA, that the site was within 200 m from High Tide Line⁸⁸ which was 'No Development Zone' and where no new construction was to be allowed. Despite this, WBSCZMA had approved the proposal (September 2014) which was in violation of CRZ Notification 2011.

WBSCZMA stated that these structures were not permanent ones and sand dunes were not disturbed. However, the fact remained that these structures were permanent ones which were not permitted in CRZ I area and any construction in CRZ I area would have a deleterious impact on sand dunes.

3.10.5.3 Coastal Police Stations

WBSCZMA had approved (October 2012) the construction of four Coastal Police Stations (CPSs)⁸⁹ of Home (Police) Department, GoWB on the grounds that these were not located in CRZ area. Audit observed from records that one CPS was within 200 m from the sea and, thus, part of CRZ. However, WBSCZMA had granted permission, without verifying the location through CRZ maps. Such clearance was irregular and in violation of CRZ 2011. Further, two other CPSs were located in CVCA areas wherein constructions were not exempted and were to be regulated in line with CZMP.

WBSCZMA stated that construction of coastal police stations was a permissible activity under CRZ. However, this was incorrect as construction of these structures could only be allowed if they were not within CRZ I and CVCA areas and as such approval for construction depended on their location.

3.10.5.4 ICZM projects in Digha

According to CRZ 2011, reclamation of land for commercial purpose such as shopping, housing complex, hotels and commercial activities were prohibited. DSDA had applied (March 2013) to WBSCZMA for CRZ clearance for three

⁸⁸ *The High Tide Line means the line on the land upto which the highest water line reaches during the spring tide.*

⁸⁹ *In Gobardhanpur, Gangasagar and Diamond Harbour in South 24 Parganas district and Junput in Purba Medinipur district*

ICZM projects⁹⁰ in old Digha. Even though DLC noted (April 2013) that sites were within 200 m from HTL and hence construction of any concrete structure was not permissible, yet it recommended (April 2013) these projects to WBSCZMA on the grounds that hawkers from fishermen community would be accommodated and would address the unhygienic condition of the coast, improve drainage facilities and aesthetic value of the coastal area and would ensure tourist safety. WBSCZMA accorded (May 2013) clearance to the projects in violation to CRZ 2011 and also without obtaining the prescribed documents.

WBSCZMA stated (December 2016) that the structures were not permanent ones and was allowed for the benefit of the coast. The reply was factually incorrect as Audit observed that the structures were permanent in nature.

3.10.5.5 Platform for commissioning interceptor missile in Junput by DRDO

Defence Research and Development Organisation (DRDO) had applied (April 2014) for permission to construct platform for commissioning of interceptor missile at Junput, East Midnapur, but submitted only Form-1 and CRZ maps. WBSCZMA had requested (December 2014) DRDO for submission of EIA report, Risk Assessment, Disaster Management plan and permission for ground water tapping. These documents were not submitted by DRDO. Audit observed that according to CRZ 2011, the area proposed for construction of platform, which was having ecosystems like mudflats, sand dunes with vegetation and casuarina plantations, was classified as CRZ I. However, without examining impact of the project on the diverse coastal ecosystems and terrestrial and aquatic ecology, WBSCZMA had recommended (January 2016) this project to MoEF&CC for CRZ clearance despite the fact that no new construction was allowed in CRZ I area as per CRZ 2011.

3.10.5.6 Shrimp farming

As per CRZ 2011, salt marshes are categorised as CRZ I where any construction activity including shrimp farming is prohibited. It was observed that an agency had applied (July 2013) to WBSCZMA for clearance of a shrimp hatchery project in the Tajpur coastal area in Purba Medinipur district. As per the Ecological Status Report of the proposed project prepared by Zoological Survey of India, submitted by the applicant, this area was categorised as coastal salt marsh with a number of saltwater wetland habitats including stunted mangroves and swamp forests. However, WBSCZMA had approved the project (January 2014) despite the hatchery being in CRZ I area, without considering the impact of the hatchery upon the ecology of the flora or fauna of the area.

⁹⁰ (i) Vendor rehabilitation center integrated with landscaping and Children's Park at old Digha; (ii) construction of Toilet block, landscaping and beautification of Jagannathghat at Old Digha; and (iii) Vendor Rehabilitation Center integrated with landscaping at New Digha.

3.10.5.7 *Setting up of cryogenic facility*

An Oil and Gas importing company had applied (April 2015) for clearance of setting up an import, storage and distribution facility for natural gas in Haldia dock complex. It was seen that it submitted CRZ maps and a Risk Assessment report but did not furnish EIA report and Disaster Management Plan. However, WBSCZMA had recommended (June 2015) the project to MoEF&CC for clearance with the conditions to be complied with by the applicant that the pipeline should not violate the buffer zone of the mangroves, adequate measures would be taken to prevent accidental leakages and that the project proponent would prepare an emergency disaster plan. The CRZ map⁹¹ submitted by project proponent showed that mangroves covering more than 1000 sq m were present along the banks of Hooghly and the pipelines were passing through the buffer zone of the mangroves. Besides, ecosystems like tidal flats were also present on the route of the pipeline. In the absence of requisite documents like EIA report and disaster management plan, which was required under CRZ 2011, WBSCZMA would not be able to check compliance to the conditions, despite that the project was recommended for approval by WBSCZMA.

3.10.6 **Enforcement and compliance of CRZ regulations**

As per CRZ 2011, development or construction activities in different categories of CRZ were to be regulated by the concerned CZMA in accordance with features, regulations or norms as on February 1991⁹² and development/ re-development in CRZ areas without clearance of WBSCZMA was to be treated as violations. WBSCZMA was to inquire into cases of alleged violations, issue specific directions, file complaints, review cases, and refer such cases with comments to NCZMA. WBSCZMA could also take up cases *suo-motu* or on the basis of complaints made by individual/ representative body/ organisation/ DLCs, and take action to verify the facts concerning the issues. Violations by different agencies observed in CRZ area and failure of WBSCZMA in this regard are discussed in the succeeding paragraphs.

3.10.6.1 *Lack of action on violations by Haldia Development Authority*

MoEF&CC had intimated (May 2015) DoE, GoWB about various construction activities like pavements, parks and beautification, jetties and buildings which had taken place in CRZ area along the banks of Haldi river, both on the landward side and riverside of the existing roads/ embankment undertaken by Haldia Development Authority (HDA). In response, WBSCZMA had directed (July 2015) HDA to stop construction in the CRZ area and submit an action taken report. HDA had stated (October 2015) that constructions were to beautify the ghat/ embankment of the river intended for visitors. It was seen that WBSCZMA did not issue any further directions or initiate any action against the agency for violation of CRZ Notification.

⁹¹ A map prepared by National Centre for Earth Science Studies, Thiruvananthapuram, a Government of India authorized agency for CRZ mapping.

⁹² As defined in CRZ Notification 1991 and applicable subsequently.

3.10.6.2 Proliferation of hotels in CRZ areas

(a) Violations in Digha and Mandarmoni area

As per the records of Tourism Department, tourist inflow into Digha and Mandarmoni was 40.73 lakh (11,159 daily) during 2011 which rose by 82.38 per cent to 74.29 lakh (20,354 daily) in 2015. According to a report⁹³ (April 2012) of GoWB, daily load of Digha beach in 2010 was 8250 persons against a daily carrying capacity of 3000 persons. The huge influx of tourists had contributed to the surge of building construction without the requisite approval of WBSCZMA as discussed below:

- Between February 2009 and 2016, Ramnagar-I Panchayat Samity had approved 523 building plans in five⁹⁴ coastal mouzas of Digha Sankarpur Development Authority which included 425 cases related to construction of two to four storey hotels/ resorts. Audit observed that all these buildings were constructed, even though none of these were approved by WBSCZMA.
- Mandarmoni is a seaside village east of Digha which falls under CRZ I zone. Audit observed that WBPCB had issued (February 2007) demolition order to six hotels situated in the inter-tidal zone in CRZ area which were operating without permission from WBPCB/ WBSCZMA. Hon'ble High Court had also directed (August 2008) that no further construction would be permitted by any authority within the CRZ area. Meanwhile, in response to demolition order, the hoteliers had moved (2007) the High Court which ordered (April 2013) the District Level Coastal Zone Management Committee to re-examine whether these hotels were within parameters of the revised guidelines of CRZ 2011 and report back in three months. The Committee had stated (April 2013) that in absence of maps and other relevant information, it was difficult to inspect and examine these violations and comply with the order of High Court. This response was factually incorrect as Audit observed that a Government mapping agency had submitted (April 2012) to DoE, GoWB a report on physical demarcation of CRZ line along Mandarmoni, which showed that the entire area, where these hotels were constructed, was out of bounds for construction as it fell within CRZ I. In the meantime, the number of illegal hotels increased to 75 as of June 2016, causing severe stress to the coastal ecology. In reply WBSCZMA stated (December 2016) that it did not have power or infrastructure to demolish hotels but action was initiated by WBSCZMA through FIRs and directions to District Level Committees. However, the fact remained that as per section 5 of Environment (Protection) Act, 1986, WBSCZMA could issue directions to WBPCB/ DM/ DLCs for taking concrete action for closure, prohibition, regulation of any industry, operation or process.

⁹³ A Government of West Bengal Report-Identification of Tourism Circuits across India submitted to MoEF&CC in April 2012.

⁹⁴ Economic Hotel Sector, Gobindabasan, Paschim Gadharpur, N-2 sector, Mini Holiday Sector, Khadalgobra.

(b) Lack of action on violations of CRZ Norms in Sundarban

Scrutiny of records showed that in a joint inspection (October 2010) with MoEF&CC and WBPCB, WBSCZMA had identified 18 hotels/ resorts and one Government guest house constructed in the CRZ areas of three⁹⁵ islands of Sundarban. Subsequently, WBSCZMA had entrusted (January 2011) Institute of Environmental Studies and Wetland Management (IESWM) to map coastal infrastructure in Sundarban in order to identify the illegal construction of hotels in CRZ areas. IESWM had submitted (September 2011) a report to WBSCZMA wherein it had identified 98 cases of illegal construction in South 24 Parganas and 17 cases of illegal construction in North 24 Parganas districts. However, WBSCZMA did not take any action against these violations, like issuing directions for closure, prohibition, operation and stoppage or regulation of the supply of electricity or water or any other service.

Meanwhile, as of December 2015, as per the status report sent by the DM (South 24 Parganas) to NGT, the number of hotels in Sundarban had increased to 163⁹⁶, but none of them had approval of WBSCZMA and thus violated the CRZ 2011 Notification. Audit observed that WBSCZMA had not initiated any action to curb these violations in the light of CRZ 2011 Notification which resulted in following adverse effects on the environment as documented by the National Green Tribunal, Eastern Zone bench, as of January 2015:

- Discharging of hotel effluent into the nearby river course resulting in pollution.
- Hotels operated DG sets without permission of WBPCB, causing air and noise pollution.
- Unplanned drawing of ground water by the hotels resulted in depletion of ground water and the consequent intrusion of saline water.

3.10.6.3 Illegal fishing activities in Sundarban

As per the Hon'ble Supreme Court judgment in December 1996, shrimp culture industry/ shrimp ponds are covered by the prohibition contained in para 2(1) of the CRZ Notification 1991 and no shrimp culture pond can be constructed or set up within the coastal regulation zones as defined in the CRZ Notification. It also directed that all aquaculture industries/ shrimp culture industries/ shrimp culture ponds operating/ set up in the coastal regulation zone as defined under the CRZ Notification was to be demolished and removed from the said area before March 1997.

Audit observed that in response to the order of National Green Tribunal regarding violation of CRZ norms in Sundarban, Fisheries Department had furnished (February 2015) a report that 2098 brackish water farms were registered with Coastal Aquaculture Authority, out of which only 1068 farms were under active registration. As such, without registration, the remaining farms were operating unregulated. WBSCZMA had not taken any action to

⁹⁵ Pakhirala, Dayapur and Sajnakhali

⁹⁶ Basanti-9, Canning I-5, Gosaba-49, Patherpratima-5, Namkhana-41, Sagar-44 and Kakdwip-10.

curb these unauthorised farms, despite availability of information about these unauthorised shrimp farms.

3.10.6.4 Illegal brick kilns

Records showed that in response to the order of National Green Tribunal regarding violation of CRZ norms in Sundarban, District Magistrate, South 24 Parganas had reported (February 2015) to DoE, GoWB that in Sundarban area there were 88 unauthorised illegal brick kilns which were operational without consent of WBSCZMA resulting in violation of CRZ. WBSCZMA, however, did not initiate any action to curb this illegal activity affecting the coastal ecosystem.

WBSCZMA stated (December 2016) that the matter was subjudice at National Green Tribunal. However, the fact remains that National Green Tribunal had directed in September 2014 that WBPCB should take action to stop all brick kilns operating in Sundarban.

3.10.6.5 Lack of enforcement over tourism

Scrutiny of the records of the Tourism Department showed that the number of tourists in Sundarban had increased from 12.20 lakh in 2011 to 28.60 lakh in 2015. Audit observed that during December 2015- February 2016, on an average, 68 boats entered Sundarban daily in excess of the carrying capacity⁹⁷ of Sundarban. The boats, which plied both within the Tiger reserve and other river channels of Sundarban, were powered by old engines which created noise. Besides, water used to cool the engines was discharged in the river and contained oil and grease⁹⁸. Some of these boats also used adulterated diesel. According to information furnished by Sundarban Tiger Reserve (STR), during the peak season of December, January and February, average daily number of tourists visiting, ranged from 946 persons to 1369 persons against the tourist carrying capacity of 650 persons per day. This resulted in environmental stress in the form of pollution of water, noise and air introduced into the ecology of the Sundarban. WBSCZMA, however, had not discussed this issue in any of their meetings despite the fact that one of the mandates of WBSCZMA was to plan for the conservation of coastal areas. WBSCZMA stated (December 2016) that entry of water crafts carrying tourists was regulated by the Sundarban Tiger Reserve Authority. However, the fact remained that WBSCZMA did not take any action like issuing directives to STR to restrict tourists to the estimated carrying capacity of STR.

3.10.6.6 Violations in construction of shoreline protection works

Test check of records of Irrigation & Waterways and Fisheries Departments showed that they had undertaken major protection works⁹⁹ during 2012-13 to

⁹⁷ Carrying Capacity is the maximum number of visitors that can physically fit into a defined space over a particular time. Carrying capacity (2015-17) was determined in the Tiger Conservation Plan by Department of Forest, GoWB, to be 10 launches or maximum 32 small boats.

⁹⁸ Report of Tiger Conservation Plan of Sundarban Tiger Reserve

⁹⁹ Total 11185 m at a cost of ₹87.54 crore by I&WD, ₹2.69 crore on construction of Groyne in Digha Mohona by Fisheries Department.

2015-16 using granite boulders, cement concrete, brickwork, reinforced cement concrete, sheet pile, geo-pipes and wooden structures *etc.*, in adjacent but separate coastal stretches in Purba Medinipur like Digha, Shankarpur and Champa River in the Mohana area. Audit scrutiny showed that these works were taken up without the knowledge of WBSCZMA, in violation of CRZ Notification 2011. Further, no study was conducted to assess the impact of these works on environment or aquatic and coastal ecosystem as stipulated in CRZ Notification 2011. Joint site visit by Audit and Departmental officers in June 2016 showed that the beach was concretised and, as a result, the coastal ecosystem like sand dunes, mangroves and sandy shores were modified, which was strictly prohibited under CRZ 2011.

3.10.6.7 Discharge of untreated effluents/ management of solid wastes in the coastal areas

As per CRZ Notification 2011, no untreated sewage, effluent, ballast water, ship washes, fly ash or solid waste from any activity including from aquaculture operations was to be let off or dumped near the sea. Pollution from oil and gas exploration and drilling, mining, boat house and shipping were also to be regulated. Accordingly, WBSCZMA had directed (October 2011) the Kolkata Port Trust (KoPT), Haldia Municipality and Digha Shankarpur Development Authority (DSDA) to formulate a comprehensive plan within one year and to stop discharging untreated effluents/ solid wastes in the coastal and marine areas. It had also directed WBPCB to monitor the compliance. Results of Audit in respect of solid waste management and discharge of effluents in the coastal towns of Digha and Haldia are discussed below:

(a) Solid Waste Management in Digha

Digha is the most popular sea resort and tourist destination in West Bengal attracting a footfall of 74.29 lakh¹⁰⁰ in 2015, as per the data of Tourism Department, GoWB. According to records of DSDA, on an average, solid wastes of 15 tons per day (TPD) were generated, of which around 3.36 TPD were collected and dumped at a place very near the sea coast. The possible environmental impacts due to open dumping, as assessed by the DSDA, included ground/ surface water contamination, bad odour, pests, rodents causing epidemics *etc.* To address these, a project of Solid Waste Management at an estimated cost of ₹ 9.23 crore was included (May 2010) in ICZMP. The project was, however, not taken up by DSDA as it failed to finalise the policy of funding of operations and maintenance cost. In its absence, waste dumping on the coast continued unabated which was totally prohibited under CRZ 2011.

(b) Waste water treatment in Digha

Presently, there is no sewerage system in the Digha area. Raw sewage from residential or commercial buildings was being disposed directly into the sea through surface drains at three discharge points. For treatment of sanitary sewage generated from the hotels and the town and to stabilise the

¹⁰⁰ As per records of Tourism Department

decomposable organic matters present in the sewage so as to produce an effluent which could be disposed of in the environment without causing health hazards, an integrated sewerage system project under ICZM project was taken up at an estimated cost of ₹ 28.88 crore in May 2010. The project was, however, not completed even after expiry of six years and expenditure of ₹ 24.01 crore. Scrutiny showed that connecting the sewer lines to different households, hotels and institutions to be done by DSDA, was not taken up as of June 2016. As a result, the created infrastructure of sewer line could not be



Figure 3.5: Waste flowing into the sea (Digha)

put to use. Scrutiny further showed that out of three discharge points, WBPCB had monitored the water at one point from two locations. Audit compared monitoring results of January – December 2011 with the results of the period from January 2014 - May 2016. It was observed that BOD¹⁰¹ of sea water was higher than the permissible limit (3 mg/ litre or less), the highest recorded being 7.4 (December 2011) and 6.2 (January 2016). The average count of TC¹⁰² and FC¹⁰³ during the period January 2014 to May 2016 was 41538 and 15931 against the maximum permissible limits (<500 and <2500 MPN / 100 ml respectively). The pH¹⁰⁴ of the nearby sea water was lower in 2014-16 (7.46 to 7.53) compared to the 2011 (7.72 to 7.92) which indicated that the water quality had become more acidic during recent times due to discharge of pollutants. As such, dumping of waste, which was totally prohibited under CRZ 2011, continued to have its deleterious effects on the fragile coastal ecology.

(c) **Burning Ghat on Beach**

During joint site inspection of the Digha beach, Audit observed that a stretch of the beach and embankment¹⁰⁵ was being used as a cremation *Ghat*, leading to air and water pollution. Scrutiny of records showed that WBSCZMA had not taken up the matter with DSDA to initiate any action to address the problem. Thus, pollution through burning on the sea coast in violation of CRZ Notification continued unabated.

(d) **Effluent discharge in Haldia**

In Haldia Municipality, domestic municipal sewage generated amounted to two million gallons per day (MGD)¹⁰⁶. However, there was no sewerage collection and treatment system in Haldia Municipality and drains carried

¹⁰¹ Biological Oxygen Demand amount of oxygen which determines the strength of sewage and effluents in polluted water.

¹⁰² Total Coliform includes bacteria that are found in soil or water that are influenced by human and animal waste.

¹⁰³ Fecal Coliform bacteria are the most common microbiological contaminants of natural waters.

¹⁰⁴ Numeric scale used to specify the acidity or basicity of an aqueous solution.

¹⁰⁵ From Jagannath Ghat – Maity Ghat – Rail Station Ghat and the beach near Jatra Nala.

¹⁰⁶ Report (2011) of WBPCB

effluents to the river Hooghly. With a view to managing the sewage rationally and control pollution, HDA had prepared (June 2009) a Sewerage Master Plan; however, the project was not implemented till date (June 2016). As such, the flow of effluents continued unabated into the river Hooghly, violating the requirements under CRZ 2011. Haldia Industrial Cluster, an industrial area on the southern side of the confluence of the rivers Hooghly and Rupnarayan, housed 124 industries¹⁰⁷. According to WBPCB, 22 MGD industrial effluents generated by various industries were being discharged into the Green Belt Canal which fell into river Hooghly. Scrutiny of water quality monitoring report of WBPCB at eleven sampling stations along the canal during January 2014 to May 2016 showed that parameters like TSS¹⁰⁸, COD¹⁰⁹, BOD *etc.*, far exceeded the permissible limits in each of the sampling stations. The parameters for emission of oil and grease, Iron, Sulphide, Fluoride, Cyanide and Lead regularly exceeded permissible limits as per WBPCB reports. WBSCZMA and WBPCB have taken no action in this regard even though such discharge was prohibited as per CRZ 2011 Notification.

(e) ***Bilge¹¹⁰ and Ballast¹¹¹ water management, ship breaking and oil spills***

Records of Kolkata Port Trust (KoPT) showed that between 2010 and 2015, 9936 ships had docked in Haldia Port of KoPT. Audit observed that KoPT did not have any bilge or ballast management facility in that port for collection of effluents like used and waste oil.

Audit also observed that WBSCZMA had not taken cognizance of these polluting activities which were prohibited under CRZ Notification 2011. MoEF&CC had requested (September 2011) the Chief Secretary, GoWB to undertake shoreline clean-up and beach protection measures in order to minimise environmental damage from oil spills. DoE, GoWB had also constituted (December 2011) a committee to review the oil spill contingency plan and to suggest modifications thereon. However, even after passage of six years, they were unable to finalise any such Plan.

Scrutiny further showed that a ship carrying more than 260 tons of oil had sunk near the Sagar Island in October 2013. Records showed that the debris and oil were not cleared, causing damage to the coastal region. As such, effluents from ship continued to pollute the coastal areas which was totally prohibited under CRZ 2011.

¹⁰⁷ Nine grossly polluting, 25 Red categories and 90 Green and Orange category

¹⁰⁸ Total Suspended Solids are solids in water which includes a wide variety of material, such as silt, decaying plant and animal matter, industrial wastes and sewage. High concentrations TSS may cause many problems for stream health and aquatic life.

¹⁰⁹ The standard method for indirect measurement of the amount of pollution (that cannot be oxidized biologically) in a sample of water.

¹¹⁰ Bilge water is a combination of rain water, sea water, waste matter and seeped oil from below deck and is usually discharged at the port in a controlled manner.

¹¹¹ Ballast refers to a heavy weight, often sea water, taken on board of an empty ship, for stability and improves handling, when the ship is not carrying cargo. The ballast is then discharged and exchanged for cargo at the port of destination while the sediments settled at the bottom of the tanks is physically shoveled over the side of the ship directly into the ocean. Ballast contains a gamut of organisms and their propagules.

3.10.6.8 Action taken on the basis of Complaints

As per CRZ Notification 2011, WBSCZMA was empowered to take up cases of violation *suo-motu* or on the basis of complaints received from individuals/organisations. In the following cases, Audit observed inaction on the part of WBSCZMA against complaints received regarding violations of CRZ:

- Bakkhali-Frazerganj Hoteliers Welfare Association had filed (December 2015) a complaint along with photographs showing that a few constructions were undertaken within 200-250 m of the coast in South 24 Parganas District despite the fact that the area was classified as CRZ I by the MoEF&CC while approving the CZMP of 1996.
- Residents of Radhakrishnapur village of Sagar in South 24 Parganas District had lodged (December 2015) a complaint along with photographs and satellite image showing that permanent structures were constructed within 100 m of a tidal creek in violation of the CRZ Notification 2011.

WBSCZMA had forwarded (December 2015) the complaints to DLC, South 24 Parganas and directed it to look into the matter and submit a detailed action taken report. However, no further action was found to have been taken in this case.

3.10.6.9 Post clearance monitoring

According to CRZ Notification 2011, it is mandatory for the project proponent to submit half-yearly compliance to WBSCZMA on 1 June and 31 December every year and host the report on its website. Audit observed that none of the project proponents had submitted half-yearly compliance reports to WBSCZMA.

WBSCZMA had given CRZ clearance to 20 projects after the issue of CRZ 2011 Notification (as discussed in **Paragraph 3.10.5**), of which Audit conducted (June 2016) joint physical verification of 12 projects¹¹² and one project¹¹³ which was given CRZ clearance prior to CRZ 2011. Audit observed that in six out of 13 projects physically verified, there were deviations from the conditions of CRZ clearance which were not being monitored, as detailed below:

(a) Spillage of fly ash in Haldi River

The proponent was engaged in export of fly ash to Bangladesh through barges. The fly ash was transported to the jetty by browsers and then filled into barges on the Haldi River using pipes. CRZ clearance was issued in September 2009 with the condition that the project proponent would install a system to ensure no spillage of fly



Figure 3.6: Mixing of fly ash with river water

¹¹² Four ICZM projects of Vendor Rehabilitation and Beautification at Digha, Eco-tourism at Sagar Island under ICZM, Shrimp farming, H Energy East Coast Ltd., Dock facilities at Haldia Dock Complex, AEGIS Logistics, Bharat Petroleum Corporation Ltd., Indian Coast Guard and Sagar Kutir.

¹¹³ Exports of Fly Ash by a private company (September 2009).

ash into the river. Joint site inspection (24 June 2016) showed that fly ash was spilling into the river-water during loading of fly ash in barges. Further, NOC of WBPCB (March 2014) had stipulated the condition of annual export up to 1.2 lakh MT. Audit, however, observed that between 2014 and 2015, the proponent had exported 5.97 lakh MT of fly ash, thus violated the conditions of WBPCB. In addition, the process of loading of fly ash¹¹⁴ was also violating the conditions of the clearance which were stipulated to restrict water pollution.

(b) Shrimp farming

As already discussed in *Paragraph 3.10.5.6*, WBSCZMA had approved the project in CRZ I area on the condition of leaving 100 m buffer from the adjacent creek. During joint physical verification (June 2016) of the project site it was observed that the project was in construction phase and was implemented along the tidal creek without leaving buffer of 100 m or width of the creek. This was in violation of the conditions stipulated in the project approval as well as the provisions of CRZ III A *i.e.* 'No Development Zone'.



Figure 3.7: Shrimp hatchery project adjacent to creek on the left

(c) Eco-tourism project in Sagar Island under ICZM



Figure 3.8: Littering by waste on Sagar beach

Sundarban Infrastructure Development Corporation Limited had, without clearance of the WBSCZMA, undertaken construction of bus terminus including food court and toilet in Sagar Island which was under CRZ I area. Joint physical verification of the site by Audit showed that the project was undertaken on a marshy wetland surrounded by tidal creeks. Besides, a tidal creek was cut off to build a road to the site. It was further seen that leach based toilet blocks constructed at a cost ₹ 21.19 lakh in 2015 had become

dilapidated and the component of solid waste management was scrapped from the project. Audit observed that the whole area including the sea beach was littered with waste, indicating lapses in monitoring by WBSCZMA/ WBPCB.

¹¹⁴ Loading of fly ash in the barge emptying ballast water.

(d) **Three ICZM projects at Digha**

Joint site visits of the ICZM projects undertaken by DSDA in Digha showed the following irregularities in post clearance monitoring by WBSCZMA:

- At Old Digha, DSDA had constructed toilets and watch towers using concrete materials on the beach. Besides, the children's park and the nearby area along the shores had been landscaped with paver blocks and artificial grass. The landscaping had transformed the sandy beaches of Old Digha into a green top and concrete area which was in violation of CRZ Notification.



Figure 3.9: Beach beautification in Old Digha

- At New Digha, DSDA had additionally constructed an open theatre in the area for which it had not applied for clearance of WBSCZMA.
- Mangroves present at the site of Landscaping near Jagannath Ghat had turned brown indicating the dying condition of the mangroves



Figure 3.10: Beach beautification in New Digha

3.10.7 Conclusions

West Bengal State Coastal Zone Management Authority (WBSCZMA) is responsible for protecting and improving the quality of coastal environment as well as preventing, abating and controlling environmental pollution in coastal areas of West Bengal. Institutional arrangements were weak as there were deficiencies in the composition of WBSCZMA due to non-inclusion of essential members like experts, representatives of various departments and Non-Government Organisations. WBSCZMA only discussed project approvals and did not take up matters related to conservation, enforcement, monitoring and violations of Coastal Regulation Zone Notification and was thus reduced to being only a project approval body. District Level Committees also did not function as an effective body for reporting violations and enforcing the regulations. Actions taken to conserve the coastal zones were ineffective due to delays in preparation of Coastal Zone Management Plan and local level maps, lack of identification of ecologically sensitive, economically important and highly vulnerable coastal areas. WBSCZMA cleared various projects which were not permitted under the Regulation 2011 and in many cases project approvals were given in violation of the regulation as clearance/recommendation to Ministry of Environment, Forest and Climate Change was

given for the projects without requisite detailed level CRZ maps. Enforcement of CRZ regulations was weak; the weak enforcement was leading to proliferation of illegal hotels with uncontrolled tourism in Digha, Mandarmoni and Sundarban areas as well as uncontrolled discharge of untreated effluents/solid wastes spoiling the environment of coastal areas. No post clearance monitoring was being exercised and deviations from the approved project conditions were observed in most of the projects. As such, WBSCZMA had failed to achieve the objectives for which it was set up, which was to conserve and protect coastal stretches, its unique environment and its marine areas and to promote development in a sustainable manner.

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