

3.1 *Extra expenditure due to use of higher specifications than necessary*

The Public Works (Roads) Department, in deviation from the IRC guidelines, laid bituminous layers of higher specification resulting in extra expenditure of ₹ 2.74 crore.

Indian Roads Congress (IRC) guidelines⁴³ include the pavement design catalogue to be used for determination of design pavement thickness for road construction. This stipulates thickness of road and specification of each layer of road pavement to be constructed on the basis of strength of soil and projected traffic volume during the design life of the road⁴⁴.

Public Works (Roads) Department (PWRD) approved (April 2012) the work of 'Widening and Strengthening of Basanti-Godhkhali Road' at an estimated cost of ₹ 11.47 crore under Backward Region Grant Fund (BRGF), a 100 per cent funded Government of India scheme. Accordingly, Superintending Engineer, State Highway Circle-I, (SE, SHC-I), PWRD awarded (June 2012) the construction work from 0.00 kmp to 10.00 kmp⁴⁵ to a contractor at the tendered cost of ₹ 8.75 crore⁴⁶ for completion by April 2013. The work was completed in June 2013 at a cost of ₹ 11.52 crore.

Scrutiny revealed that scope of the work in the tender included widening of the road up to 7.0 metres from existing width of 3.8 metres and strengthening the existing as well as the widened part with 100 mm Wet Mix Macadam (WMM) as base course, 50 mm Bituminous Macadam (BM) as binder course and 25 mm Bituminous Concrete (BC) as wearing course. Subsequently, the Department decided (October 2012) to reduce the width of the road from the proposed 7.0 metre to 5.5 metre as it felt that 5.5 metre carriageway would be sufficient to cater to the projected volume of traffic. The Department also felt that the revised scope of work would evolve less cutting of roadside trees, less earthwork and less protective work. To utilise the savings arising from reduction in width of the road and contractual rebate, it was observed that SE, SHC-I approved (August 2013) laying of bituminous layers of higher specifications on the road surface, without obtaining approval from Chief Engineer, as required. The items of work in the revised specifications adopted and their monetary effects are detailed in the table 3.1.

⁴³ IRC: 37-2001 of the guidelines issued by the Indian Roads Congress (IRC), which is the Apex Body of Highway Engineers in the country. It issues guidelines which are updated regularly.

⁴⁴ Expressed in MSA (Millions of Standard Axles)

⁴⁵ kmp : kilometre point

⁴⁶ 23.72 per cent less of the estimated cost put to tender.

Table No. 3.1: Amount paid as per revised specifications vis-a-vis original specifications

Specifications provided in the estimate as per IRC guidelines	Tendered cost (₹ in crore)	Revised specifications	Amount paid (₹ in crore)
100 mm WMM	1.27	75 mm DBM	2.67
50 mm BM	1.58	50 mm BM	1.53
25 mm BC	1.14	40 mm BC	1.70
Nil		Profile corrective course with BM	0.83
Total	3.99		6.73

It can be seen from the table that the Department spent ₹ 6.73 crore exceeding the tendered cost of ₹ 3.99 crore by ₹ 2.74 crore, by using higher specification than required. Audit observed that the original specifications were in accordance with the pavement design catalogue of IRC guidelines. The condition of the sub-grade soil (CBR 3.5 per cent) and projected traffic volume during the design life of the road (2.7 MSA) was determined and accordingly the specifications in the original estimates were designed to cater to the desired traffic during the designed life of the road. Audit also observed that substitution of 100 mm WMM with 75 mm DBM entailed profile correction of the existing undulation of the road before laying of the BM layers which involved an additional cost of ₹ 0.83 crore.

In reply, the Department stated (June 2016) that when decision regarding proposed width of the road was taken in October 2012, a new publication of IRC guidelines⁴⁷ had come into force and as the road width was subsequently reduced, required thickness of the road was also required to be increased due to concentration of wheel load. The Department also stated that as the road was situated at coastal area the thickness of BC was considered 40 mm in lieu of 25 mm to prevent early damage.

The reply was, however, factually incorrect as the Department did not follow the IRC: 37-2012, while considering the concentration of wheel load (1.00 instead of 0.75) for calculating the required thickness of the road. Regarding coastal area, the reply was also not tenable as thickness of the wearing course depends on MSA and CBR and not on the climate of coastal area.

Thus, the Department unjustifiably revised the specification of the strengthening course in deviation to the IRC guidelines in order to utilise the savings. This resulted in extra expenditure of ₹ 2.74 crore⁴⁸, which was avoidable.

⁴⁷ IRC : 37-2012

⁴⁸ ₹6.73 crore - ₹3.99 crore

ANIMAL RESOURCES DEVELOPMENT DEPARTMENT

3.2 Excess payment in violation of contractual rates

The Department, in violation of the West Bengal Financial Rules, procured cattle feed at an enhanced rate resulting in excess payment of ₹ 96.38 lakh.

West Bengal Financial Rules (WBFR)⁴⁹ stipulate that no payment to contractors in excess of the contract rates shall be authorised without prior approval of the Finance Department.

With a view to augmenting milk production in 18 districts of the State, Paschim Banga Go-Sampad Bikash Sanstha (PBG SBS), an autonomous body under Animal Resources Development Department (ARDD), had taken up (2010-11 onwards) “Bishesh Go-Sampad Bikash Abhijan” (Abhijan) under Rashtriya Krishi Vikas Yojana. The scheme *inter alia* included supply of balanced cattle feed to cattle owners. For procurement of cattle feed, Chief Executive Officer (CEO), PBG SBS had invited (May 2012) a limited tender among three organisations *viz.* West Bengal Dairy and Poultry Development Corporation Limited (WBDPDCL), Bhagirathi Co-operative Milk Producers’ Union Limited (BCMPUL) and Himalayan Milk Union Limited (HIMUL). Accordingly, CEO entered into (June 2012) three separate agreements with the three agencies for purchase of cattle feed at rates ranging between ₹ 11.05 and ₹ 13.05 per kg. As per the terms of the agreements, the agreed rates were valid for six months from the dates of the agreements. Further, it was also agreed upon that if the supplier failed to supply the cattle feed within 45 days, PBG SBS reserved the right to procure the same from other agencies and the difference of cost was to be borne by the supplier.

Audit scrutiny showed that during the validity of the agreements, the agencies expressed⁵⁰ their inability to supply the cattle feed at the agreed rates on the ground of escalation in the cost of ingredients of the cattle feed and requested PBG SBS to enhance the agreed rates. It was observed in audit that PBG SBS, instead of invoking the clause of non-supply, accorded (7 December 2012) approval of the enhanced rate of ₹ 16 per kg⁵¹ for all three agencies. Audit also observed that neither any market survey to verify the rates of cattle feed was conducted nor approval of the Finance Department was taken by PBG SBS while fixing the escalated price of cattle feed within the validity of the agreements. Scrutiny showed that PBG SBS placed supply orders of 24.59 MT of cattle feed during the validity of the agreements and paid the agencies at enhanced rates which resulted in excess payment to the tune of ₹ 96.38 lakh.

In reply, the Department stated (May 2016) that the matter was discussed (December 2012) in the State Level Monitoring Meeting and the rate of ₹ 16.00 was found to be quite reasonable. It also stated audit comments in respect of WBFR had been noted for future guidance.

⁴⁹ Rule 47(a)

⁵⁰ WBDPDCL on 02 August 2012, BCMPUL on 04 September 2012, HIMUL on 01 October 2012.

⁵¹ For Coochbehar district the rate was fixed at ₹ 16.50 per kg.

However, the fact remains that instead of enforcing the contract clause regarding non-supply, the Department/ PBGSBS had enhanced the agreed rates for supply of cattle feed arbitrarily without approval of the Finance Department and without verifying the actual market rates of cattle feed. This led to excess payment of ₹ 96.38 lakh to the three agencies supplying cattle feed.

PASCHIMANCHAL UNNAYAN AFFAIRS DEPARTMENT

3.3 Unfruitful expenditure due to poor contract management

Failure of Paschimanchal Unnayan Parshad to protect newly laid WBM layers with bituminous overlay course for a prolonged period as well as failure to enforce terms and conditions of contract led to unfruitful expenditure of ₹ 2.11 crore due to damage of the partially completed road.

Indian Roads Congress (IRC) specifications provide that for construction of road on the granular sub-base course like Water Bound Macadam (WBM), the next Bituminous Macadam (BM) layers or wearing courses like Pre-mix Carpet (PC) and Seal Coat (SC) shall be laid after the WBM becomes dry and before allowing any traffic on it.

In January 2013 Chief Executive Officer (CEO) of Paschimanchal Unnayan Parshad (PUP) had awarded work relating to repair of a road⁵² to an agency at the tendered cost of ₹ 1.94 crore, to be completed by April 2013. The specifications of the work of repair of the road *inter alia* included two non-bituminous base courses of 75 mm Water Bound Macadam (WBM) and a bituminous wearing course of 20 mm Premix Carpet (PC) and six mm Seal Coat (SC). Subsequently, the tendered cost was revised (March 2015) to ₹ 3.12 crore due to allowing of longer road carriage of stone aggregates. As per terms of the contract, in the event of unsatisfactory progress of work, PUP had the right to terminate the contract and get the balance work done at the risk and cost of the agency.

The progress of work was very poor since the beginning and the agency had delayed taking up the bituminous work after laying of the WBM. The contract was finally terminated in May 2015 on the grounds of delay in completion of work. The agency was paid (June 2015) ₹ 2.11 crore for the WBM work. It was observed that the WBM layers were damaged as the agency had not taken up the bituminous work in time. It was also observed that Paschimanchal Unnayan Affairs Department (PUAD) had awarded (February 2016) a fresh work of strengthening of the same road with higher specifications⁵³ at the tendered cost of ₹ 5.05 crore to another agency. As of June 2016, the work was in progress and the agency was paid ₹ 3.39 crore, which included re-doing the WBM work with Wet Mix Macadam (WMM) at a cost of ₹ 1.59 crore.

With regard to the partially completed work for which the earlier agency was paid ₹ 2.11 crore, Audit observed the following:

⁵² “Repairing of Bituminous Road from Khalseuli to Malancha (8.40 km stretch) under Jhargram Block in the District of Paschim Medinipur”

⁵³ 85 mm Bituminous Macadam and 25 mm Semi Dense Bituminous Concrete

- Progress was very poor since inception of the work and the agency had stopped the work completely in August 2014, after laying of WBM layers. The road was not covered with PC and SC in time as per the IRC guidelines. PUP observed that due to delay in laying the bituminous layers (PC and SC), the already laid WBM layers were completely damaged.
- PUP had delayed action by 25 months, after the stipulated date of completion of work, to terminate the contract despite slow progress of work by the agency. PUP had also released security deposit to the agency without taking any penal action as specified in terms of the contract.

In reply, the Department stated (June 2016) that delay in execution was not totally the agency's fault as local people had demanded strengthening the road with higher specification and PUAD took long time to take a decision in this regard; meanwhile the road so far executed became damaged. The reply was not tenable as contract was terminated due to delay in the execution of work and not because of change in specifications; however, the fact remains that PUAD took 25 months' time in taking action for termination of contract and re-tendering of the work.

Thus, due to failure of PUP to protect newly laid WBM layers with bituminous overlay course for a prolonged period, expenditure of ₹ 2.11 crore incurred on the WBM layers became unfruitful.

PUBLIC WORKS DEPARTMENT

3.4 *Unfruitful expenditure on road improvement*

Executive Engineer, Nadia Division (PWD) did not ensure requisite quality of construction as per the IRC guidelines, which resulted in unfruitful expenditure of ₹ 1.81 crore incurred on strengthening and improvement of a road.

Specifications for Roads and Bridges (Fourth revision) of Indian Roads Congress (IRC)⁵⁴ stipulates that the contractor is to set up a field laboratory at approved locations equipped with adequate equipment and personnel in order to carry out all required tests and quality control work as per specifications and as per directions of the Engineer-in-Charge. For ensuring requisite quality of construction, material and works are to be subjected to quality control tests.

Superintending Engineer, Central Circle (SE, CC), Public Works Department (PWD) had awarded (December 2012) the work of "Strengthening and Improvement of riding quality of Krishnanagar - Majdia road from 10 kmp to 17 kmp" to an agency at a cost of ₹ 1.96 crore for completion by June 2013. The specifications with regard to road strengthening were as per IRC specification (IRC 2001) which *inter alia* included overlaying of 50 mm Bituminous Macadam (BM) as strengthening course and 20 mm Open Graded Premix Carpet (OGPC) along with Seal Coat (SC) as wearing course on the

⁵⁴ Section 900

existing road surface. The road strengthening work was completed in June 2014 at a cost of ₹ 1.97 crore.

Audit observed that the Division did not ensure that the required tests were conducted during the work of strengthening the road to ensure that the prescribed specifications were complied with by the contractor. From the Inspection Report (April 2013) of the concerned Executive Engineer, it was seen that there were no arrangements at the field laboratory for testing of binder (bitumen) content and grading of stone aggregates used in the work. It was further observed that during execution of the road work, Executive Engineer, Nadia Division, PWD had engaged (June 2013) Road and Building Research Institute (RBRI), PWRD to conduct tests on bituminous items from samples from the completed portion (10.00 to 14.00 kmp) of the road stretch. Test reports submitted by RBRI in July 2013 revealed that average bitumen content of BM was 2.61 per cent, which was less than the required percentage of 3.4 per cent as per IRC guidelines. Further, the report also stated that grading of aggregates used in all the bituminous works did not qualify and compaction of the mix was also poor.

Audit further observed that, subsequently, on the request of the contractor in August 2013, the concerned Assistant Engineer again got the binder content test conducted by the Department of Construction Engineering, Jadavpur University (JU). This test report showed that binder content of the bituminous work was satisfactory. Audit observed that the Division accepted the test results of JU, even though this was carried out on the request of the contractor after the quality of its work was found unsatisfactory by RBRI. The test results of JU were accepted even though JU did not consider testing of other parameters including grading and compaction of the bituminous mix, the basis on which RBRI had disqualified the samples. In this context, Audit observed that the road had become damaged with the formation of potholes and depressions within one year of completion of the work and the contractor was asked to rectify the damages as the road was under defect liability period of three years from the date of completion. The contractor, however, refused to undertake any rectifications except for some patch repairs and the condition of the road further deteriorated as of February 2016.

Thus, due to non-observance of required quality control measures as per IRC guidelines, quality of the road construction could not be ensured and the road became damaged even before completion of defect liability period, this resulted in unfruitful expenditure of ₹ 1.81 crore⁵⁵.

In reply, the Department stated (July 2016) that the test report of the RBRI varied greatly from those conducted during the execution of the work at site, which were found satisfactory, and hence the report of the RBRI raised doubt. It further stated that only two culverts suffered depression between 10.3 kmp to 10.8 kmp with the consequent formation of few potholes.

The reply was, however, unfounded as the concerned Executive Engineer, being dissatisfied with the quality control measures adopted during execution of the work, got the tests conducted by RBRI, a premier Institute under the aegis of the same Department. Further, reports of the concerned Assistant

⁵⁵ Expenditure on 50 mm Bituminous Macadam, Open graded Premix Carpet and Seal Coat (₹1.18 + ₹0.47 + ₹0.16) crore

Engineer and Executive Engineer revealed that the entire road stretch was damaged and required rectification.

IRRIGATION AND WATERWAYS DEPARTMENT

3.5 *Extra expenditure*

Irrigation and Waterways Department failed to avail benefit of exemption of Central Excise Duty which resulted in extra expenditure of ₹ 99 lakh in eight construction works.

As per Notifications No. 03/2005 and 12/2012 issued by Central Excise Department, Ministry of Finance dated 24 February 2005 and 17 March 2012 respectively, “All goods fabricated at site of work for use in construction work at such site” are exempted from payment of Central Excise Duty (CED).

It was observed that Executive Engineers (EEs), Kakdwip Irrigation and Joynagar Irrigation Divisions had executed eight construction works⁵⁶ between February 2010 and May 2015 at a total cost of ₹ 79.40 crore. Scope of executed works *inter alia* included procurement of different types of steel materials of 1771.65 MT to be fabricated at the site of the works for use in construction work. Scrutiny of records showed that cost of steel procured for the works included CED at the rate of 12 *per cent* on the basic price ranging from ₹ 38,420 to ₹ 57,000 per MT. This was despite exemption from excise duty, granted by the Government of India on goods fabricated at site for use in construction work.

Thus, due to failure of the Department to avail of benefit of exemption offered under the above mentioned notifications, extra expenditure of ₹ 99 lakh was incurred (*Appendix-3.1*) which also increased the project cost by that amount.

The Department accepted the audit observations and stated (June 2016) that steps had been taken to recover the amount from the steel companies. It further stated that the Schedule of Rates (SOR) was being rectified considering exemptions of CED. However, the fact remains that the steel companies had not refunded any amount and SOR was not revised as of November 2016.

PASCHIMANCHAL UNNAYAN AFFAIRS DEPARTMENT

3.6 *Avoidable extra expenditure by allowing higher rates*

Paschimanchal Unnayan Affairs Department allowed higher rate of stone metals due to consideration of longer road carriage, resulting in extra expenditure of ₹ 1.26 crore.

Schedule of Rates (SOR) of Public Works (Roads) Department (PWRD), Government of West Bengal (GoWB), stipulates different rates for stone

⁵⁶ *Semi-permanent steel jetty, Construction of vent regulator cum bridge, Construction of one Pontoon and Construction of Pump House.*

metals⁵⁷ of different sizes and varieties available at different quarry sites⁵⁸ all over the State.

Paschimanchal Unnayan Parshad (PUP) under the administrative control of Paschimanchal Unnayan Affairs Department (PUAD) is responsible for overall development of backward areas situated within Purulia, Birbhum, Paschim Medinipur, Bankura and Burdwan districts. PUP follows the SOR of PWRD in preparation of the estimates of road works. Audit observed that in four road works PUAD had allowed higher rate for stone metals as discussed below:

a) The Chief Executive Officer (CEO) of PUP had awarded (March 2014) a road work⁵⁹ for completion by August 2014 to a contractor through open competitive bidding at a tendered cost of ₹ 3.59 crore. The work was completed in May 2015 *i.e.*, after a delay of 10 months, at the cost of ₹ 3.50 crore. Scrutiny showed that PUAD had initially sanctioned (May 2013) only ₹ 1.57 crore for the road work on the basis of SOR of PWRD (2008-09), which had considered the use of stone metals of local varieties available at different local quarries (Hura, Puncha, Malti). These quarries were within a distance of 90 km from the work site. Subsequently, PUAD revised (January 2014) the estimates with the provision for use of Panchami variety of stone metal for WBM, for which road carriage of 330 km was allowed. Though no reasons were found on record for this change, the cost of work increased to ₹ 3.59 crore due to this decision and increase in the scope of work⁶⁰.

Department intimated (December 2015) that local varieties of stone metals (Hura, Puncha, Malti) were used for the WBM item. However, Audit observed that the payment was made considering the rate of Panchami variety of stone metals, which were actually not used in the work. This resulted in extra payment of ₹ 0.51 crore to the contractor, which was not in order.

b) PUP had awarded (January 2013) three⁶¹ road works for completion by May 2013 to three different contractors through open competitive bids at a total tendered cost of ₹ 5.01 crore. The works were completed during December 2013 to September 2014 at a cost of ₹ 5.97 crore. Scrutiny showed that in the estimates of the works, rates of stone metal-consuming items were arrived at considering the cost of Pakur variety stone metal from Jhargram Railway stack yard, which was 20 km away from the work sites. Subsequently, the contractors had requested (August 2013) PUP for allowance of road carriage (250 Km) from Panchami quarry (at Rampurhat) for supply of

⁵⁷ Stone chips, stone aggregates, boulders and river bed materials.

⁵⁸ SOR of PWRD of GoWB stipulates 10 number of quarry sites viz. Pakur, Chandil, Baharagorah (Orissa), Nilgiri (Orissa), Chandanpur, Rampurhat/ Panchami/ Nalhati, Dhadka, Saltora, Hura/Puncha/Malti and River bed materials (for North Bengal districts -Darjeeling, Jalpaiguri and Coochbehar).

⁵⁹ 'Improvement of road from Sirkabad Hospital More to Ayodhya Hill Top (14 km) within Bagmundi Panchayat Samity in Purulia District.'

⁶⁰ Flexible pavement along with the rigid pavement, protective works, surface drain etc.

⁶¹ 'Widening of road from Binpur to Harda (Part-A) under Binpur-I Block in the district of Paschim Medinipur', 'Widening of road from Hardato to Nadighsat & Boxi (Part-B) under Binpur-I Block in the district of Paschim Medinipur' and 'Widening of road from Murgimore to Boxi (Part-C) under Binpur-I Block in the district of Paschim Medinipur'.

stone metals on the ground that Pakur variety of stone metals was not available at Jhargram Railway stack-yard. PUAD accepted the plea of the contractors and sanctioned (September 2013) the revised estimates for these three works at a total cost of ₹ 6.05 crore.

Audit observed (December 2015) that SOR-specified rates of Pakur variety stone metal were available at 50 railway stack-yards in different zones of the State. Further, stone metals of Pakur variety were available at Jhargram Railway stack yard at the time of execution of these works as the records of the Midnapore Highway Division-II under PWRD showed that the Division had made payment for Pakur variety of stone from Jhargram Railway stack-yard for use in a road work⁶² (August 2013) executed during the same period. Despite the availability of Pakur variety of stone material, PUP allowed higher rate for stone materials by considering longer road carriage from Panchami quarry, which resulted in extra expenditure of ₹ 0.75 crore.

Thus, allowing higher rate of stone metals due to consideration of longer road carriage resulted in an avoidable extra expenditure of ₹ 1.26 crore (₹ 0.51 crore + ₹ 0.75 crore).

The matter was reported (May 2016) to the Department; reply is awaited till date (December 2016).

PUBLIC WORKS (ROADS) DEPARTMENT

3.7 Non-realisation of one-time license/ permit fee

Executive Engineers (EE) of three Public Works Divisions failed to levy and collect one-time license/ permit fee from the existing licensees for laying Optical Fibre Cable (OFC) along the roads resulting in loss of Government revenue of ₹ 3.42 crore.

To promote Information Technology industry in the State, Government of West Bengal allowed⁶³ private/ Government sector entities to have the Right of Way (RoW) for laying of cables/ pipelines/ utilities along the roads without levying any charge. However, due to changes in economic scenario over the years and considerable increases in cost of construction and maintenance of roads, Government of West Bengal had decided (August 2013) to levy a one-time license/ permit fee for granting RoW for laying cables/ pipelines/ utilities along the roads under the jurisdiction of Public Works and Public Works (Roads) Department. The circular issued (August 2013) by Public Works Department (Integrated Finance Branch) stipulated the applicable rate⁶⁴ for one-time license/ permit fee from new as well as existing users of roads, based on the classification of areas (rural/ municipal/ corporation/ Kolkata) in which cables/ pipelines/ utilities would be laid. For the new licensees, one-time fee was to be levied and collected at the time of granting license/ permit for RoW. For existing license/ permit holders, one-time fee was to be levied and

⁶² 'Surfacing work of Link Road between Jhargram-Jamboni Road and Parihati-Jamboni-Fekoghat Road from 0.00 kmp to 3.20 kmp'.

⁶³ By means of a Government order in April 2002.

⁶⁴ ₹ 300, ₹ 575, ₹ 1150 and ₹ 2300 per square metre for rural, municipal, corporation area and Kolkata respectively.

collected prospectively within six months from the date of issue of the order (*i.e.* within February 2014).

Scrutiny of records of three⁶⁵ Public Works Divisions of Public Works (Roads) Department showed that RoW for laying of 3,80,212 metre of OFC was granted to four⁶⁶ companies during 2007-13 along the roads under the jurisdiction of these Divisions. However, in violation of the above mentioned circular, the concerned EEs did not levy the one-time license/ permit fee and, consequently, failed to collect the fees from these existing license holders till date (April 2016).

On this being pointed out by Audit, one Division (Malda Highway Division) stated (April 2016) that the agreements with the existing license holders were executed during 2008-09 which were valid for 15 years; hence one-time license fee could not be imposed on the existing license holders. The remaining two Divisions did not offer any comments.

The reply of the division was not consistent with the circular which *inter alia* stipulated that existing license holders were required to deposit the requisite fee and sign a new license/ permit deed within six months from the date of issue of the circular and included all existing license holders.

Thus, failure of the Divisions in levying the one-time license/ permit fees and collecting the same from the existing license/ permit holders resulted in loss of Government revenue of ₹ 3.42 crore⁶⁷.

The matter was reported (May 2016) to the Department but no reply was received till date (December 2016).

PUBLIC WORKS (ROADS) DEPARTMENT

3.8 Avoidable expenditure due to use of materials of higher specification

Injudicious decision of the Executive Engineer, Barasat Highway Division-I, to strengthen a road stretch with higher specification on the basis of traffic data during abnormal traffic conditions in disregard of the IRC specifications resulted in avoidable expenditure of ₹ 4.59 crore.

As per Indian Roads Congress specifications (IRC:37-2012) the design of a road is required to be determined on the basis of two parameters *i.e.*, projected traffic and the nature of the subgrade soil. Assessment of projected traffic in non-urban roads is guided by the procedure envisaged in IRC: 9-1972 which stipulates that traffic census should not generally encompass abnormal conditions like a fair or exhibition and in such cases, the count in the area should be postponed by a few days till normalcy returns.

Superintending Engineer, State Highway Circle-I, awarded (February 2014) three road works⁶⁸ of Taki-Murarisha-Bhebia-Chaital road to three contractors

⁶⁵ Malda Highway, Howrah Highway and Dakshin Dinajpur Highway Divisions.

⁶⁶ Vodafone Essar South Limited, Reliance Communications Infrastructure Limited, Bharti Airtel Limited and Reliance Jio Limited.

⁶⁷ 380212 m (length) X 0.3 m (width) X ₹ 300.

⁶⁸ Improvement (0-12.00 kmp) and widening and strengthening (12.00-16.00 and 16.00-20.80 kmp) of the "Taki-Murarisha-Bhebia-Chaital" road.

at a total tendered cost of ₹ 28.24 crore for completion by December 2014. The works were completed (between May 2014 and December 2014) at a total cost of ₹ 28.40 crore. Scope of the works were as follows:

- **Road stretch 0 to 12.00 kmp:** Strengthening of the road by laying 75 mm Bituminous Macadam (BM) and 25 mm Semi Dense Bituminous Concrete (SDBC).
- **Road stretch from 12.00 to 16.00 kmp and 16.00 to 20.80 kmp:** Widening of the road surface from 5.50 metre to 7.00 metre as well as strengthening with two layers of 50 mm Dense Bituminous Macadam (DBM) and one layer of 40 mm Bituminous Concrete (BC).

In respect of these works, audit scrutiny revealed that:

- Specifications for the road between 0 and 12.00 kmp were determined on the basis of projected traffic (299 commercial vehicles per day) derived through a traffic census conducted during 11 March to 18 March 2013 at 11th kmp of the road.
- However, higher specifications for the stretches from 12.00 kmp to 16.00 kmp and 16.00 kmp to 20.80 kmp were determined by taking into account the projected traffic volume (826 commercial vehicles per day) at 19th kmp derived through a traffic census conducted between 11 October and 18 October 2013 at 19th kmp of the road.

Audit, however, observed that the traffic census at 19th kmp was conducted during Durga puja (11 October to 18 October 2013) celebrations, which is the main festival in West Bengal when traffic volume increases manifold. The Division, however, instead of waiting till return of normalcy of traffic situation, considered the traffic data of abnormal traffic conditions, in violation of IRC specifications. Accordingly, higher specifications of the road stretch (12.00 kmp to 16.00 kmp and 16.00 kmp to 20.80 kmp) were determined, keeping in mind the traffic projections. Audit also observed that only one bituminous road (Bashirhat-Nazat) intersects this road at 9th kmp and traffic volume of this road had already been considered in the traffic census conducted at 11th kmp. As such, the huge increase in traffic volume (176 per cent⁶⁹) within eight kilometre (between 11 kmp and 19 kmp) stretch of the same road and after a time gap of only six months (March 2013 - October 2013) could not be justified as IRC: 37-2012 envisaged average annual growth rate of five per cent.

Thus, the decision of the Division to strengthen the road stretch between 12 kmp and 20.80 kmp with higher specifications considering the traffic data during abnormal traffic conditions was injudicious and violated the provisions of IRC specifications. Audit observed that if the Division had provided the same specifications between the road stretch as that of the road stretch between 0 and 12.00 kmp, considering the traffic census at 11 kmp, it could have saved an expenditure of ₹ 4.59 crore.

The matter was reported (June 2016) to the Department but no reply was received till date (December 2016).

⁶⁹ Increased from 299 to 826.

TRANSPORT DEPARTMENT

3.9 Loss of interest due to absence of monitoring over investment

Hooghly River Bridge Commissioners (HRBC) failed to avail of the opportunity to earn additional interest of ₹ 0.79 crore due to lack of monitoring over investment of its surplus funds.

Guidelines issued (January 2013) by the Finance Department, Government of West Bengal for opening and maintenance of bank accounts with Government Funds stipulated that verification and reconciliation of the balances of bank accounts including fixed deposit, if any, should be done at the earliest and once in a month through personal visit to the bank by a responsible officer.

The main source of revenue of Hooghly River Bridge Commissioners (HRBC) is toll from vehicles plying over the Vidyasagar Setu. A part of this revenue, along with receipts from various Departments for Deposit Works which were not required for immediate use, were invested in term deposits of nationalised banks.

Audit observed (September-October 2015) that HRBC suffered losses due to lack of monitoring over its surplus funds, as discussed below:

- From the surplus funds in its current account with State Bank of India, HRBC had invested ₹ 73 crore during February 2013 to July 2013 in special term deposits of one year in the same bank. However, the funds remained invested with the bank beyond the date of maturity of the term deposited, as shown in table 3.2.

Table No. 3.2: Details of special term deposits and loss of interest

Amount of investment (₹ in crore)	Date of investment	Date of maturity	Date of encashment	Period for which interest not earned	Interest receivable	Interest actually received	Amount of loss
					(₹ in crore)		
14.00	15.02.13	14.02.14	13.02.15	12 months	2.65	1.23	1.42
7.00	23.05.13	23.05.14	27.02.15	9 months	1.10	0.63	0.47
52.00	29.07.13	28.07.14	06.09.14	1 month 8 days	5.17	4.70	0.47
Total					8.92	6.56	2.36

(Source: Bank account statements)

Audit observed that as HRBC failed to instruct the bank in time for renewal of the deposits, no interest was paid by the bank for the above mentioned period. As a result, HRBC could not avail of the opportunity to earn interest of ₹ 2.36 crore. On this being pointed (September-October 2015) out by Audit, HRBC took up the matter (October 2015) with the concerned bank and only ₹ 1.57 crore could be realised (December 2015). However, the balance interest amount of ₹ 0.79 crore (₹ 2.36 crore - ₹ 1.57 crore) could not be realised from the bank, which resulted in loss of ₹ 0.79 crore due to non-renewal of term deposits in time.

Thus, lack of monitoring over investment of its surplus funds by HRBC resulted in loss of ₹ 0.79 crore as interest.

The matter was reported (June 2016) to the Department; no reply was received till date (December 2016).

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

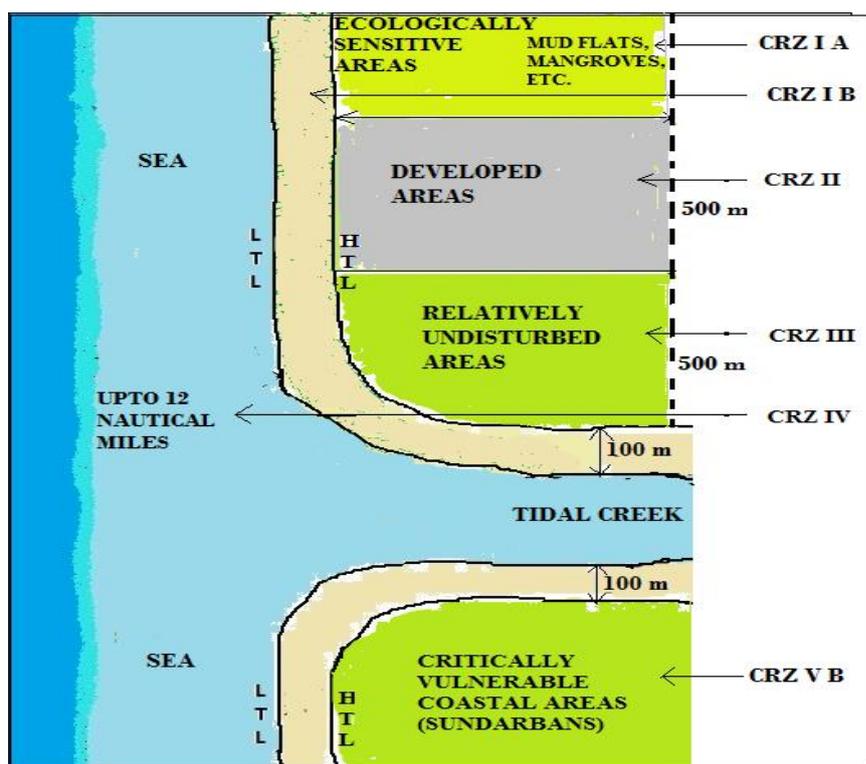


Figure 3.3: CRZ areas classification

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.

Kolkata
The 17 February 2017


(NAMEETA PRASAD)
Accountant General
(Economic and Revenue Sector Audit)
West Bengal

Countersigned

New Delhi
The 22 February 2017


(SHASHI KANT SHARMA)
Comptroller and Auditor General of India