सत्यमेव जयते

Audit Report of the Comptroller and Auditor General of India (Performance & Compliance Audit) for the year ended 31 March 2022

SUPREME AUDIT INSTITUTION OF INDIA

लोकहितार्थ सत्यनिष्ठा

Dedicated to Truth in Public Interest

Government of West Bengal

Report No. 1 of the year 2024

Audit Report of the
Comptroller and Auditor General of India
(Performance & Compliance Audit)
for the year ended 31 March 2022

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Government of West Bengal

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PREFACE

This Report for the year ended March 2022 has been prepared for submission to the Governor of West Bengal under Article 151 of the Constitution of India.

The Report contains significant results of three Performance Audits and one Detailed Compliance Audit relating to five Departments of the Government of West Bengal.

The Audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.

Overview

OVERVIEW

Introduction

Out of 25 Departments under the jurisdiction of this Office of the Principal Accountant General (Audit-II), West Bengal, this Report of the Comptroller and Auditor General of India covers matters arising out of Performance Audits and Detailed Compliance Audit of five State Government Departments (including four State Public Sector Enterprises and one Regulatory Body).

This chapter provides the gist of significant Audit observations highlighted in the above mentioned audits.

Significant Audit Observations

1. Performance Audit on Efforts of the State Government in Wildlife Protection including mitigation of Human-wildlife conflict and reducing illegal trade in wildlife articles, Forest Department

This audit on the "Efforts of the State Government in Wildlife Protection including mitigation of Human-wildlife conflict and reducing illegal trade in wildlife articles" seeks to draw an assurance that the forests and their wildlife were being cared for and maintained by the Forest Department of the State.

Management Plans and Tiger Conservation Plans were not prepared for a number of Protected Areas. Although notifications by the Government of India had added 1,097.15 sq km of Eco-Sensitive Zones around the 13 PAs, the State Government did not prepare Zonal Master Plans to regulate and prohibit activities in these Eco-Sensitive Zones.

(Paragraph 1.7.1)

Census of endangered/critically endangered species had not been carried out on regular basis, which had hindered appropriate conservation measures. Progress in the '*Tiger Augmentation Programme*' in Buxa Tiger Reserve (BTR) was very slow. A focused approach in terms of habitat improvement, reducing biotic pressure to the core area of the BTR is required. Conservation of other critically endangered species was sub-optimal.

(Paragraph 1.7.3 & 1.7.4)

Infrastructure of Wildlife Health Management was inadequate. Prevention and control of diseases around the Protected Areas did not appear to have been adequately monitored. Domestic animals around the Protected Areas were not vaccinated and veterinary support was inadequate in many Protected Areas.

(Paragraph 1.7.5)

Habitat management activities like natural and artificial regeneration of grass, plantation of fodder species, development of water holes, weed removal and regular maintenance, were not adequate, resulting in degradation of habitats for wildlife.

(Paragraph 1.7.6)

Mitigation measures undertaken by the Forest Department for Human-Elephant conflict did not have a major impact and were also not adequate. Instances of short, delayed and non-payment of compensation, to the victims led to growing antipathy among the people towards wildlife conservation and retaliatory killing or injuries to animals.

(Paragraphs 1.8.1 & 1.8.2)

Shortage of patrolling staff, as well as equipment, affected the conservation and anti-poaching efforts. Huge number of cases were pending before the courts and the conviction rate for wildlife crime was too low, due to lack of knowledge of the forest staff.

(Paragraphs 1.9.1 & 1.9.5)

2. Detailed Compliance Audit on Revenue Collection and Control of Mining Activities of Minor Minerals, Industry Commerce and Enterprises Department and Land & Land Reforms & Refugee Relief and Rehabilitation Department

The audit was conducted through test-check of records of the IC&E Department, Directorate of Land Records & Survey (DLRS), Directorate of Mines & Minerals (DMM), seven selected districts, Land & Land Reforms Officers (DL&LROs) and office of the Chief Mining Officer (CMO), Asansol, four Sub-Divisional Land & Land Reforms Officers (SDL&LROs) and 25 Block Land & Land Reforms Officers (BL&LROs), between April and October 2022, covering the period from FY 2017-18 to FY 2021-22.

In 73 lease agreements, of which annual raising target was 31.95 crore cft, lease deeds had not been executed, for periods ranging between 841 and 1,801 days, resulting in loss of revenue in the form of royalty and cess of ₹ 53.04 crore due to non-cancelling or re-auctioning of sand block.

(Paragraph 2.8.1)

Failure to realise balance bid money of ₹ 10.05 crore from 24 out of 35 lessees whose lease term expired which indicated deficient monitoring.

(Paragraph 2.9.1)

The Department failed to realise the balance bid money of ₹ 13.09 crore and interest of ₹ 3.07 crore thereon for late payment from the 18 successful bidders.

(Paragraph 2.9.2)

Failure to update the revised rate in portal resulted in short- realisation of royalty of ₹ 2.12 crore from sand mining lessees.

(Paragraph 2.10.2)

Failure to prescribe a system of intra/inter departmental cross-verification of data resulted in non-detection of extraction of minerals and consequent non-realisation of revenue of ₹ 3.62 crore from 902 contractors.

(Paragraph 2.10.3)

Failure to realise price of materials on excess extraction of minerals beyond the targeted quantity as per mining plan resulted in non-realisation of ₹ 2.05 crore.

(Paragraph 2.10.4)

Absence of provision in the Rules about timely payment by the lessees/ contractors resulted in non/ short realisation of royalty and cess of ₹ 3.35 crore from 230 brick kiln owners.

(Paragraph 2.11.1)

Failure to initiate action to stop unauthorised extraction of earth resulted in non-recovery of price of brick earth of ₹ 19.48 crore from 1,272 unauthorised brick owners.

(Paragraph 2.11.2)

Failure to initiate proceedings even after a lapse of 16 to 25 months of assessment, resulted in non-realisation of revenue of ₹ 4.12 crore.

(Paragraph 2.13)

Department did not object for delay of more than six months in submission of ECs. Further, lease deeds were executed before submission of ECs in violation of Rule indicated inadequate monitoring.

(Paragraph 2.16.1)

Audit observed overlapping of mines areas, mis-match between *khasra* map and co- ordinates map, co-ordinates not verified before approval of mining plan and plantation not carried out in the barrier zone as per mining plan with the help of Google Earth Pro Software.

(Paragraphs 2.19.2, 2.19.3 & 2.19.4)

Geo-spatial survey of selected Granite mines showed mining operations beyond the approved mining area and illegal excavation of 5,182.53 m^3 of mineral.

(Paragraph 2.20.1)

3. Performance Audit on Management of Regulatory Assets by Power Sector State Public Sector Enterprises (SPSEs), Power Department

A regulatory asset (RA) is an entity's right to recover fixed or determinable amounts of money towards incurred costs, as a result of the actual or expected actions of its regulator, under the applicable regulatory framework. As of 31 March 2022, there was huge accumulation of RAs by the four SPSEs.

(Paragraph 3.1)

Due to non-preparation of annual accounts in time, the SPSEs belatedly submitted applications for determination of tariff.

(Paragraph 3.9.2)

Non-achievement of the targeted norms on various parameters of different generating stations of SPSEs led to excess consumption of fuel and procurement of power which was disallowed by WBERC and due to low Plant Availability Factor fixed costs of the SPSEs were not allowed to be recovered by WBERC.

(Paragraph 3.10.3)

WBERC, in its tariff regulations, segregated the items of cost into controllable and uncontrollable items. It was observed that SPSEs failed to recover huge amount on controllable items, *viz*. meter reading & billing distribution, collection and franchisee cost, coal & ash handling and O&M charges *etc*.

(Paragraph 3.10.5)

The excess interest burden adversely affected the financial health of SPSEs. Due to decrease in the credit rating, the SPSEs would end up incurring higher interest expenses, in future.

(Paragraph 3.11.3)

GoWB accepted that the current scale of regulatory assets was beyond its means to liquidate the same, as it had done before. Accordingly, WBERC was directed to expedite the process of annual performance review (APR) orders, to ensure complete recovery of actual costs incurred by the SPSEs and admitted by WBERC.

(Paragraph 3.11.4)

4. Performance Audit on Solid Waste Management in Urban Local Bodies, Urban Development & Municipal Affairs Department

The Performance Audit was carried out on 'Solid Waste Management in Urban Local Bodies' for the period 2017-18 to 2021-22 to assess status of management of Municipal Solid Waste (MSW) in the State by covering 26 Urban Local Bodies (ULBs).

State Level Advisory Body (SLAB), constituted in November 2016, was not functioning since 2017. The Department had not notified its policy for Construction & Demolition waste management. There were delays in preparation of Solid Waste Management Plans/ Detailed Project Reports (DPRs) for ULBs and the same were not placed before the elected body of ULBs for approval.

(Paragraphs 4.5.1, 4.5.3 & 4.5.7)

Door-to-door collection of waste could not be commenced in 85 *per cent* of the test checked ULBs. Domestic hazardous waste gets mixed with other solid waste and is reaching the landfills. In the test checked ULBs, the open vat system was still operational, for temporary storage of municipal solid waste.

(Paragraphs 4.7.3, 4.7.5 & 4.7.7)

ULBs/Development Authorities dumped the collected MSW at dumpsites without processing. Only 23 *per cent* of the waste generated in the State was subjected to any kind of waste processing.

(Paragraphs 4.8.1 & 4.9.1)

Only six dumpsites were cleared as of September 2022, out of 123 dumpsites with an aggregated legacy waste of 123.87 MT on 838.09 acres of land. Slow progress in bio-mining and bio-remediation of legacy waste delayed setting up of waste processing plants.

(Paragraph 4.9.5)

Observing the slow progress in implementation of the SWM Rules, 2016, NGT imposed environmental compensation of ₹ 32.91 crore, for the period July 2020 to May 2021, out of which ₹ 26.42 crore was paid. The remaining environmental compensation of ₹ 6.49 crore was not paid as of October 2022.

(Paragraph 4.9.7)

There were only two Sanitary Landfills in the State. Owing to acute shortage of waste processing facilities and sanitary landfills in the States, the untreated solid waste was either being dumped in the dumping grounds, or strewn at road side, in water bodies, drains, canals *etc*.

(Paragraph 4.10.1)

Chapter I

Performance Audit on Efforts of the State Government in Wildlife Protection including mitigation of Human-wildlife conflict and reducing illegal trade in wildlife articles

CHAPTER - I

FOREST DEPARTMENT

1 Performance Audit on Efforts of the State Government in Wildlife Protection including mitigation of Human-wildlife conflict and reducing illegal trade in wildlife articles

Executive Summary

Home to a number of flora and fauna, many of them threatened and quite a few critically endangered, the forests and wildlife of West Bengal are treasures of the State. Known for its Royal Bengal Tigers, the State also boasts of being the one of three Rhino bearing States in the country.

For any forest and its resident wildlife to flourish, the forest management needs to concentrate on two essential areas, namely, protection and conservation of wildlife *per se* and maintaining their habitats in a pristine and consolidated form. This Report on the **"Efforts of the State Government in Wildlife Protection including mitigation of Human-wildlife conflict and reducing illegal trade in wildlife articles"** seeks to draw an assurance that the forests and their wildlife were being cared for and maintained by the Forest Department of the State.

Audit noticed that the Protected Areas (PAs) sampled in audit had not prepared Management Plans (for National Parks, Wildlife Sanctuaries and Conservation Reserves) and Tiger Conservation Plans (for Tiger Reserves). Zonal Master Plans are required to be prepared after the final notification of Eco-Sensitive Zones around the Protected Areas. Audit also found that, though notifications by the Government of India had added 1,097.15 sq km of Eco-Sensitive Zones around 13 PAs, the State Government did not prepare Zonal Master Plans to regulate and prohibit activities in these Eco-Sensitive Zones.

Census of endangered / critically endangered species, like Fishing cat, Indian Wolf, Indian Pangolin, Red Panda, Gangetic Dolphin, Olive Ridley Turtle *etc.* had not been done on regular basis, which had hindered appropriate conservation measures. Issues relating to increasing density of the Rhinos population and consequent effects, like infighting and deaths, possible inbreeding, genetic weaknesses and diseases, are likely to prove more and more difficult to handle and control, in case of delayed implementation of relocation strategy.

Progress in the '*Tiger Augmentation Programme*' in Buxa Tiger Reserve (BTR) was very slow, even after lapse of five years from the date of commencement of the programme. Hence, it required a focused approach in terms of habitat improvement, reducing biotic pressure to the core area of the Tiger Reserve.

Further, progress of the recovery programme for conservation of other critically endangered species *viz.* Red Panda, Vulture, Gangetic Dolphin and Northern Indian Terrapin, was sub-optimal.

Infrastructure of Wildlife Health management was inadequate, which not only affected preparedness for wildlife emergencies but also had an impact on the task of alleviating stress and improving welfare aspects of the displaced wildlife and captive animals. Prevention and control of diseases around the

Protected Areas did not appear to have been adequately monitored by the Forest Department. Cattle, Dogs and Cats around the Protected Areas were not vaccinated and veterinary support was inadequate in many Protected Areas.

Habitat management, activities like natural and artificial regeneration of grass, plantation of fodder species, development of water holes, weed removal and regular maintenance, were not adequate, resulting in degradation of habitats for wildlife.

Short releases, as well as delays in releases of the funds to the Divisions by the Forest Department, led to non-execution of various planned activities during the period, which hampered the wildlife protection and management works.

Human-Elephant Conflicts continued to be of major concern for the State and the mitigation measures undertaken by the Forest Department did not have a major impact. Priority was accorded only towards short-term measures, rather than to long-term steps to improve the habitats and secure identified corridors. Moreover, there were instances of short, delayed and non-payment of compensation, to the victims of conflict, which led to growing antipathy among the people towards wildlife conservation and retaliatory killing or injuries to animals.

Though the cases of Elephant deaths in train accidents during 2017-22, as compared to during 2010-17, reduced, certain portions of the track still remained vulnerable for collision and deaths of wildlife. Illegal fencing and sagging of electric lines were causing electrocution of Elephants. Mitigation measures to control road kill, like speed restriction, night movement restriction, setting up of check posts, construction of underpass/ overpass for safe passage of wildlife were not adequate.

Private tourism establishments still operated in BTR and Departmental tourist camping facilities remained unutilised, as the Department was yet to evolve a plan to utilize the camping infrastructure, as per the directions of the National Green Tribunal. Excess tourists were allowed in the Tiger Reserves, beyond their carrying capacities. Fifteen forest villages, from the core area of BTR, were yet to be relocated.

Shortage of patrolling staff, as well as equipment, affected the conservation and anti-poaching efforts. Further, it was noticed that huge number of cases were pending before the courts and the conviction rate for wildlife crime was too low, due to lack of knowledge of the forest staff regarding legal requirements pertaining to search, seizure, evidence collection and prosecution in courts.

In spite of various steps to control the ritualistic hunting, it was observed that such unlawful assemblies of armed hunters and poaching of various wild animals still continued, particularly in certain areas of South Bengal.

As such, while certain efforts have been made to protect wildlife in the forests of West Bengal, the risks are currently latent and still more needs to be done.

Audit recommendations are geared to aid the Department in taking necessary remedial action in time, so that flora and fauna of the State continue to flourish.

Recommendations:

1. ***The Department needs to institutionalise the planning process, with specified steps and time frames, to finalise its Management Plan, through a dedicated cell, and a laid down process.***
2. ***The Department should complete the process of final notification for the eight PAs in a time bound manner. Difference in area between notified areas and digitized maps should be reconciled and accordingly boundaries of PAs to be demarcated.***
3. ***The Government should ensure preparation and notification of Eco Sensitive Zones, Zonal Master Plans and Tourism Plan, in a time-bound manner and ensure effective monitoring of prohibited and regulated activities.***
4. ***The Department needs to conduct proper and timely census for all the endangered species, to devise proper conservation strategies for these animals.***
5. ***The Department should analyse the reasons for dwindling numbers of critically endangered species and take proactive steps for their conservation, including protection and restoration of habitat, proper breeding programmes and translocation.***
6. ***The Department should establish well equipped wildlife rehabilitation-cum-disease surveillance centres, supervised by trained wildlife veterinarians; and introduce technically equipped Mobile Veterinary to attend wildlife emergencies, rescue and rehabilitation and to provide health support. The Department should also initiate a comprehensive immunization programme for livestock, living in and around PAs, in coordination with the State Animal Husbandry Department.***
7. ***The Department should take up habitat management of the Protected Areas as a priority and control the influence of weeds and invasive species for restoration of disturbed habitats.***
8. ***The Department should mobilise funds as per approved Annual Plan of Operations for implementation of conservation measures for wildlife. The Department should also utilize the available funds promptly and submit utilisation certificate timely for release of central assistance in time.***
9. ***The Department should develop a proper Human-Elephant Conflict strategy, along with detailed action plan for its strict enforcement, in consonance with the National Human-Wildlife Conflict Mitigation Strategy and Action Plan (HWC-NAP) 2021-26.***
10. ***All entry points of the Sundarban Forest need to be placed under proper surveillance, in conjunction with continuous awareness generation programmes, for educating people about the dangers of illegal entry into the core area of the reserve.***
11. ***The Department should take steps to ensure a night ban of traffic inside the Protected Areas, along with construction of underpass and overpass for wildlife, after identifying animal paths in Protected Areas.***

12. The Department should take concrete steps to enforce closure of commercial activities in the PAs and regulate the tourist flow, as per the prescribed procedure. A system of Online booking for safaris should be introduced to have better monitoring on the flow of the tourists.

13. The Government should take steps to augment critical front line field staff and provide them adequate arms and wireless equipment necessary for control of poaching and illegal trade as envisaged in NWAP 2017-21.

14. The Department, in view of the wide spread ramifications of illegal trade in the State, should consider setting up a dedicated Wildlife Crime Control Cell, in co-ordination with the Police Department.

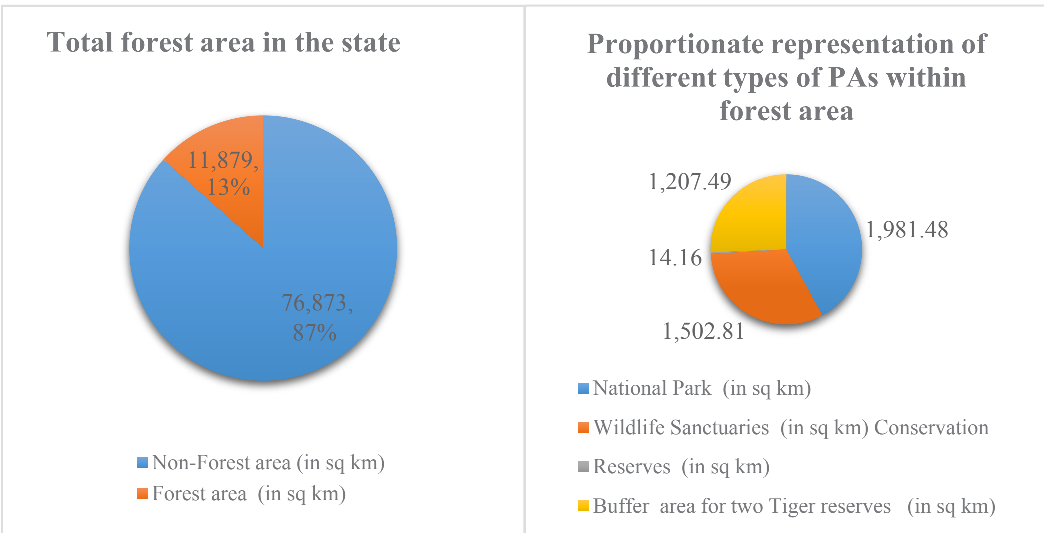
15. In view of the poor conviction rate of wildlife cases, the Department, in collaboration with Ministry of Environment and Forest & Climate Change (MoEF&CC), Ministry of Law & Justice and State Law Department, should consider setting up of fast-track special courts/ benches, for dealing with forests and wildlife crimes.

16. The Department needs to improve its monitoring mechanism through regular Inspections by higher officials and implement the electronic surveillance system to check poaching of wild animals.

1.1 Introduction

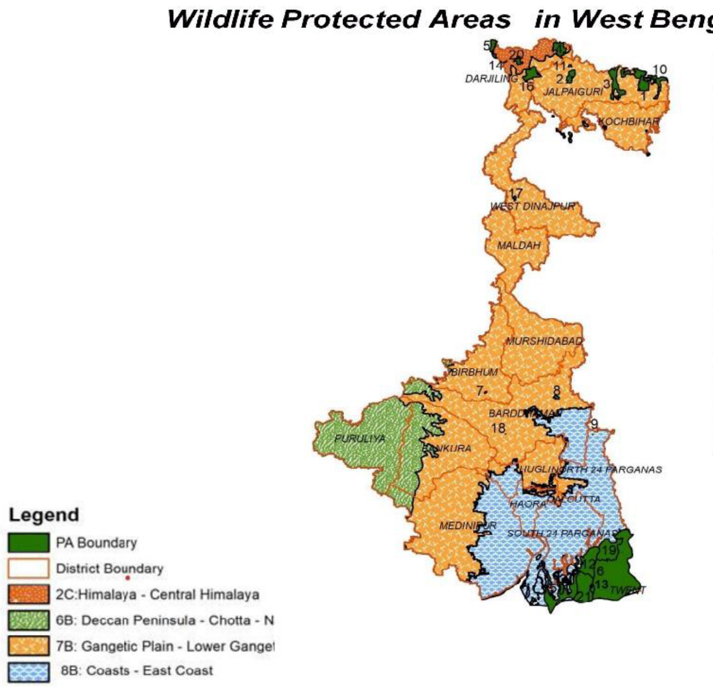
"Wildlife" includes all animals, aquatic or land vegetation which forms part of any habitat. The Wild Life (Protection) Act, 1972, recognises[1] the overarching goals of wildlife protection and empowers the State Government to notify an area of significance as a Protected Area (PA), *i.e.,* National Park, Sanctuary and Conservation Reserve. The total Forest and Protected area distribution in the state of West Bengal, was as mentioned in **Chart-1.1**.

Chart 1.1: Total forest areas and different types of PAs in the State



[1] *Under Sections 18 and 35 of the Wild Life (Protection) Act, 1972, the State Government can declare an area of significance as Protected Areas, i.e., Sanctuary and National Park respectively. Further, the notifications for Tiger Reserves are issued by the State Government under Section 38(V) of the Wild Life (Protection) Act, 1972.*

In addition, there are two Elephant Reserves *viz*. Mayurjharna Elephant Reserve, with an area of 414.00 sq km and Eastern Duars Elephant Reserve, with an area of 977.51 sq km. There is one Biosphere Reserve *viz*. Sundarban Biosphere Reserve (SBR), with an area of 9,630.00 sq km. This includes the Sundarban Tiger Reserve and three Wildlife Sanctuaries (WLSs), *viz.* Lothian Island, West Sundarban and Haliday Island.



Sl No.	PA Name	Area in km²
1	Buxa NP	117.10
2	Gorumara NP	79.45
3	Jaldapara NP	216.34
4	Neora Valley NP	159.89
5	Singalila NP	78.60
6	Sunderban NP	1330.10
7	Ballavpur WLS	2.02
8	Bethuadahari WLS	0.67
9	Bibhutibhusan WLS	0.64
10	Buxa WLS	314.52
11	Chapramari WLS	9.60
12	Chintamani Kar Bird WLS	0.07
13	Haliday Island WLS	5.95
14	Jorepokhri Salamander	0.04
15	Lothian Island WLS	38.00
16	Mahananda WLS	158.04
17	Raiganj WLS	1.30
18	Ramnabagan WLS	0.14
19	Sajnakhali WLS	362.40
20	Senchal WLS	38.88
21	West Sunderban WLS	556.45
22	Pakhi Bitan WLS	14.09

Fig 1.1: List of National Parks and Wildlife Sanctuaries of West Bengal

The State is home to a rich variety of forests and wildlife[2]. However, increased human population coupled with fragmentation and degradation of forests is putting pressure on these fragile ecosystems, as evident from increases in Human Wildlife Conflicts, regular occurrence of forest fires, proliferation of invasive weed species *etc*.

In West Bengal, Human-wild animal conflict is generally manifested in: (i) Human-Elephant conflict in North Bengal as well as in South-West Bengal, (ii) Human-Leopard conflict, in North Bengal, (iii) Human-Tiger conflict in Sundarbans and (iv) Human-Gaur (Bison) conflict, in North Bengal. In case of Elephants, instances of loss of crop, property, human life and injury to people as well as retaliatory killing of Elephant have been observed; whereas, in case of Tigers, Leopard, Rhino and Gaur, loss of livestock, life and injury to humans, as well as retaliation by humans, resorting to poisoning/killing of wild animals, are generally seen.

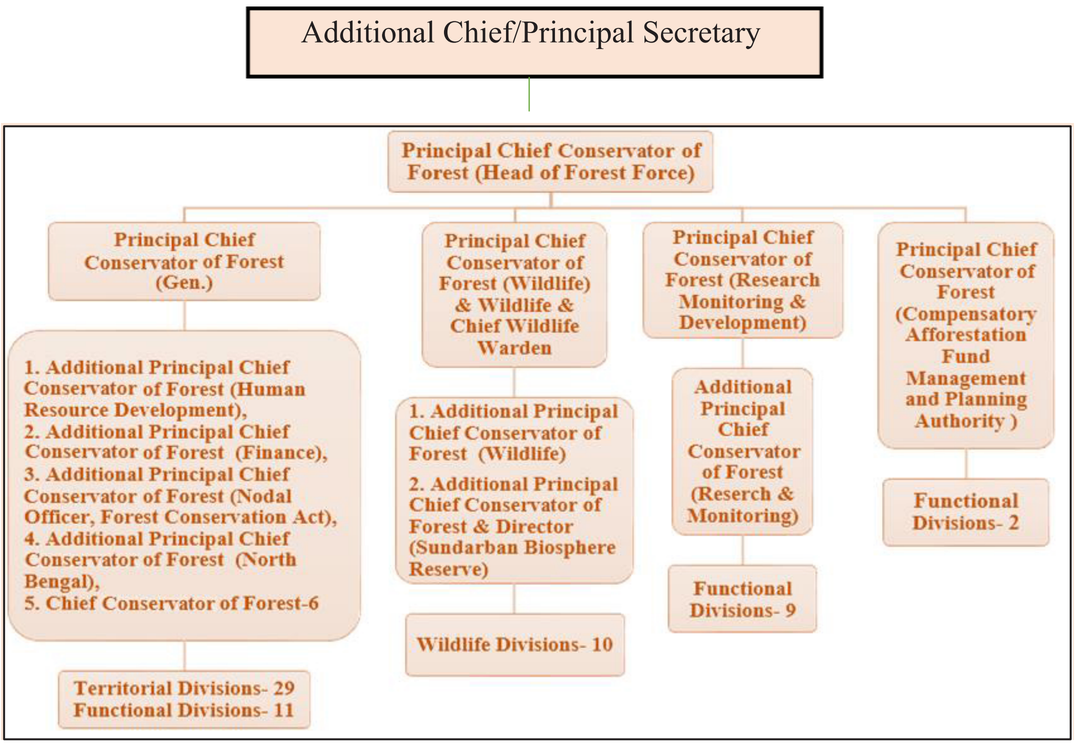
[2] *Royal Bengal Tiger in Sundarbans, one-horned Indian Rhinoceros in the Terai of North Bengal, Leopards in the foothills of the Himalayas and Red Pandas in the bamboo groves of Himalayas. The highly endangered species includes the Asian Elephant, Indian Bison, Estuarine Crocodile, Fishing cat, Pigmy Hog, Bengal Florican, Black Necked Crane, Great pied Hornbill, Goliath Heron, Salvator Lizards, Olive Ridley Marine Turtle and rare Batagur Terrapin.*

As per the Annual Report-2019-20 of the Wildlife Wing, Forest Department, the State has become a major transit point in the movement of the illicit wildlife animals and related articles. International trade in wildlife and its derivatives is an organised and established global criminal activity with hubs and trade routes spanning countries and continents. Further, a large number of wildlife species are of great economic importance and losing them to poachers and smugglers is a direct loss to the country's natural wealth. India is a signatory to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[3] and is obliged to undertake necessary steps to prevent illegal trade or transfer of wildlife and wildlife articles, which are prohibited under provisions of CITES. In West Bengal, such illegal trades include Tiger Skin, Bones, Nails, Rhino horn and bone, Elephant ivory and bone, Leopard skin and bone, Snake skin and Venom, Gecko, Birds, Turtles. Curbing illegal trade in live wildlife and their articles, poses a major challenge to the Forest Department of West Bengal.

1.2 Organisational Structure

The Forest Department of the Government of West Bengal (GoWB) is responsible for the management of forests and wildlife in the State. Additional Chief/ Principal Secretary, Department of Forest, GoWB is the administrative head of the Department. Principal Chief Conservator of Forests (Head of Forest Force) (HoFF) is the head of the Forest Directorate and is assisted by four Principal Chief Conservators of Forests (PCCFs).

Chart 1.2: Organizational Chart of West Bengal Forest Department



PCCF & Head of Forest Force (HoFF), West Bengal is the administrative head of the Forest Directorate. The Wildlife Wing of the Forest Directorate is headed by the PCCF, Wildlife & Chief Wild Life Warden (CWLW).

[3] *An international agreement between Governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten the survival of the species.*

Besides, there were 241 Joint Forest Management Committees (JFMCs), comprising of local population in the fringe villages of PAs, to collaborate with Forest Department, for protection of flora and fauna of the State.

1.3 Audit Objectives

The objectives for this Performance Audit were to assess whether:

- Protection and Conservation of Wildlife, including their habitats, were adequately planned for and implemented in the administration of the Protected Areas;
- Adequate measures were taken to address issues relating to human interference in the Protected Areas;
- Adequate measures had been taken for surveillance and control of poaching and illegal trade of wildlife.

1.4 Audit Criteria

Audit findings are based on criteria derived from:

- Indian Wild Life (Protection) Act (WPA), 1972 and Rules thereunder,
- National Wildlife Action Plan (NWAP), 2002-16 and 2017-31,
- Management Plans (MPs) of Protected Areas/ Tiger Conservation Plans (TCP) of Tiger Reserves,
- Guidelines issued by National Tiger Conservation Authority (NTCA),
- Orders of the Hon'ble Supreme Court of India, National Green Tribunal (NGT), guidelines/ orders issued by the GoI/ GoWB/ Wildlife Institute of India (WII), International Union for Conservation of Nature (IUCN) *etc.*

1.5 Audit Scope and Methodology

The State has six National Parks (NPs)[4], 16 Wildlife Sanctuaries (WLS)[5], two Tiger Reserves (TRs)[6], two Elephant Reserves (ER)[7] and five Conservation Reserves (CR)[8]**.** All the Tiger Reserves, Elephant Reserves and National Parks were selected for audit. Besides, ten WLS and two CRs were also selected on the basis of statistical sampling through IDEA, covering 22[9] Protected Areas. Audit was carried out between July and November 2022, for the period 2017-22, including joint site inspections with departmental officials, collection of photographic evidence and discussions with departmental officials, apart from the examination of records of 14 divisions[10]. Audit objectives, criteria and methodology of audit, were discussed in an Entry Conference, with the PCCF &

4 *Singalila, Neora Valley, Buxa, Gorumara, Sundarban and Jaldapara National Park.*

5 *Jorepokhri Salamander, Senchal, Chapramari, Mahananda, Raiganj, Bethuadahari, Ballavpur, Ramnabagan, Bibhutibhusan, Chintamani Kar, Sajnekhali, Haliday Island, Lothian Island, Buxa, West Sundarban and Pakhi Bitan (Bird Sanctuary) Wildlife Sanctuary.*

6 *Buxa and Sundarban Tiger Reserve.*

7 *Eastern Duars and Mayurjharna Elephant.*

8 *Deul, Hijli, Tekonia, Mukutmonipur and Garpanchakot Conservation Reserve.*

9 *All the National parks (six), two Tiger reserves, Two Elephant Reserves. Besides, 10 (out of total 16) WLS and two Conservation reserves (out of total five) were selected on the basis of statistical sampling (IDEA).*

10 *Darjeeling Wildlife, Gorumara Wildlife, Jaldapara Wildlife, STR, BTR (East and West), South 24 Parganas, Medinipur, Bankura (North), Bankura (South), Kangsabati (South), Jhargram, Raiganj and Kangsabati (North).*

HoFF, in July 2022. The Exit Conference was conducted in February 2023, wherein the Audit observations were discussed. Replies of the Department were received in March 2023 and January 2024 and have been suitably incorporated in the Report.

1.6 Acknowledgement

Audit acknowledges the co-operation extended by the staff of West Bengal Forest Department, Wildlife Crime Control Bureau and Human & Environment Alliance League (HEAL)[11], in the conduct of this Performance Audit.

Audit Findings

The audit findings emerging from the Performance Audit, are discussed in the succeeding paragraphs.

1.7 Planning for Conservation and Protection of Wildlife and Management of Habitats

1.7.1 Management Plan/Tiger Conservation Plan

The National Wildlife Action Plan 2002-16 and 2017-31, provides that each Protected Area should have its own Management Plan[12], based on sound scientific and ecological data. The MP focus on general as well as site specific issues which take a longer span of time to show their impact. The long term plans are broken down into more granular Annual Plan of Operations (APOs), which deals with smaller issues needing immediate attention. Further, the Management Plans are being prepared based on guidelines issued by the Wildlife Institute of India *i.e.*, "A Guide to Planning Wildlife Management in Protected Areas and Managed Landscapes". In respect of Wildlife Sanctuaries and National Parks which were notified as Tiger Reserves, under Section 38 V of Wildlife (Protection) (Amendment) Act, 2006, the management of these Protected Areas is done in accordance with Tiger Conservation Plans (TCPs), approved by National Tiger Conservation Authority (NTCA). Detailed guidelines for preparation of TCPs were issued by NTCA during 2007.

Audit observations in this regard are discussed below:

1.7.1.1 Institutionalisation of Planning Process

According to the "Manual for Planning Wildlife Management in Protected Areas and Forests" (1995), issued by the Wildlife Institute of India[13], an independent planning cell was required to be established under CWLW. Further, the process of planning needed to be institutionalised, with specified steps and time frames, leading to finalisation of a Management Plan (MP). Further, the National Wildlife Action Plan (NWAP) 2017-31 (Content 1, 5.1) emphasised the establishment of a Management Plan Development Cell at the headquarters of all State Forest Departments, for preparing Management Plans and periodically reviewing the management effectiveness of the PAs.

[11] *A public charitable trust which works in the field of environment and wildlife conservation across the State of West Bengal.*

[12] *A Management Plan is a document, prepared by a planning process, which sets out the values and objectives of management for a Protected Area. By presenting strategies and operational schedules, the plan shows how these objectives can be achieved within a time bound framework.*

[13] *An institute for Wildlife Management, under the Ministry of Environment, Forest & Climate Change (MoEF&CC), for making the wildlife planning process effective.*

Audit, however, observed that an independent planning cell had not been set up for preparation of MPs, as was done for preparation of Working Plans of forest divisions. Instead a "Management Plan Committee" was constituted by PCCF, Wildlife & CWLW, WB, in December 2016, with APCCF (Wildlife) as chairman, concerned CCF/CF as member secretary and Divisional Forest Officer (DFO) & ADFO of the concerned PA as member. However, the task of preparing the MPs was entrusted to Park Managers, in addition to their regular duty of protection and conservation. This affected the planning process, as evident from the fact that as of May 2022, only 10[14] out of total 19 PAs, had approved MPs. The remaining PAs were without MPs, for periods ranging one year to seven years, as shown in **Table 1.1**.

Table 1.1: Status of Management Plans yet to be approved

Sl. No.	Name of Protected Area	Expiry date of last Management Plan	Current draft Management Plan Period	Remarks
1.	Ballavpur Wildlife Sanctuary	31.03.2020	2020-21 to 2030-31	Preparation of new MP was under process.
2.	Bibhutibhusan Wildlife Sanctuary	31.03.2021	2021-22 to 2031-32	Draft MP returned to DFO, 24 Parganas (North) on 23 December 2022, for rectification by CWLW.
3.	Raiganj Wildlife Sanctuary	31.03.2021	2021-22 to 2031-32	New Draft MP had been submitted (April 2021) to CWLW for approval.
4.	Pakhi Bitan Wildlife Sanctuary	No MP prepared since declaration of the PA	Draft MP yet to be prepared.	Declared as WLS on 11 August 2016, however, approved MP was not in place even after lapse of six years.
5.	Gorumara National Park	31.03.2018	2017-18 to 2026-27	Division submitted new draft MP in September 2018 to CWLW for approval.
6.	Neora Valley National Park	31.03.2022	2018-19 to 2028-29	Draft Management Plan submitted (September 2018) to CWLW by incorporating newly added area of 7,189.35 ha.
7.	Haliday Wildlife Sanctuary	31.03.2018	2019-20 to 2028-29	Earlier drafts were not approved, plan period was subsequently changed and latest draft submitted by Division to CWLW in November 2019.
8.	Lothian Wildlife Sanctuary	31.03.2018	2019-20 to 2028-29	
9.	Chintamani Kar	31.03.2015	2015-16 to 2024-25	Draft management plan returned in April 2021 to DFO, South 24 Parganas for rectification by CWLW.

(Source: Chief Wildlife Warden)

Audit noted that an institutional mechanism, to ensure that Plans are prepared in time, was non-existent. There was no dedicated staff for this work, nor were

[14] *Buxa Tiger Reserve (Buxa NP and Buxa WLS), Sundarban Tiger Reserve (Sunderban NP and Sajnekhali WLS), Jaldapara NP, Singhalila WLS, Senchal WLS, Chapramari WLS, Mahananda WLS, Bethuadahari WLS, Ramnabagan WLS and West Sundarban WLS.*

timelines prescribed for the work. With shortage of staff at Forest Ranger level (22 *per cent*) and Deputy Forest Ranger level (48 *per cent*) ***(refer to Paragraph 1.9.1)***, the Divisions could not spare manpower for timely preparation of Management Plans.

Five conservation reserves[15] were created[16] in the year 2017. However, their MPs were not in place, even after a lapse of five years. Reasons for non-preparation of MPs were not on records.

Thus, activities taken up in the Divisions were ad-hoc in nature and were not supported by long-term scientific planning, with properly identified targets. The Department stated (March 2023) that instructions had been issued to CRs to prepare the MPs.

The Department stated (January 2024) that a dedicated cell for preparation of Management Plans, as pointed out by Audit would be welcome but there is acute shortage of manpower that prevents setting up of such cell. Due to change in the overall area of some of the parks, some delay occurred in preparation of Management Plans.

Box 1: Case Study

The Garpanchakot Conservation Reserve (GCR), having an area of 1,340.34 ha, was notified in May 2017. More than five years had been elapsed since the date of notification, but Management Plan had not been prepared for this CR. The constraints faced by this CR are scarcity of water, scarcity of fodder in dry season, immense biotic interference, forest fire, grazing and dependency of fringe population on forest.

Records showed that due to paucity of funds, training on eco-tourism had not been imparted to the 13 Joint Forest Management Committee (JFMC) members, who were not involved in eco-tourism, though it is a tourist spot. Massive forest fires occurred in February 2018 and March 2022, affecting 320 ha and 200 ha forest areas, respectively. Further, during April 2020, there was another forest fire, but the affected area was not measured. During 2017-22, four new water bodies were created in the CR, in addition to existing one water body. To avoid shortage of water during winter and summer seasons, more water bodies are to be created.

To overcome these constraints, more water bodies, new patrolling paths & roads, soil conservation works, fire line creation and awareness among eco-tourists, are required to be taken up. Support is also required to be given to the 13 JFMC villages, for successful management of the PA.

The Kangsabati (North) Division stated (August 2022) that the loss due to forest fire had not been assessed, as it was only a ground fire and to overcome the constraints necessary steps would be taken after approval of MP. Thus, in the absence of an approved MP, appropriate steps for conservation of animals, by improving habitats, protection of fire and livelihood development activities, could not be taken.

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[15] *Deul Conservation Reserve, Hijli Conservation Reserve, Tekonia Conservation Reserve, Mukutmonipur Conservation Reserve, Garpanchkot Conservation Reserve.*

[16] *Vide notification no. 1555 dated 19.05.2017.*

1.7.1.2 Periodical Assessment of Plan

As per NWAP 2017-31, MPs were to be periodically reviewed, to assess the management effectiveness of the PAs. In respect of three PAs[17], out of financial and physical targets were fixed for five years in the initially approved MP. However, after five years, neither had mid-term reviews been conducted, nor had revised targets been fixed for the balance period of the MPs, as detailed in **Table1.2**.

Table 1.2: Management Plans without revised targets

Name of the PA	Management Plan period	Target fixed in MP for the period	Period of MP without any revised target
Mahananda WLS	2011-12 to 2021-22	2011-12 to 2016-17	2017-18 to 2021-22
Senchal WLS	2012-13 to 2021-22	2012-13 to 2017-18	2018-19 to 2021-22
Singalila NP	2013-14 to 2022-23	2013-14 to 2018-19	2019-20 to 2022-23

(Source: Information furnished by the concerned divisions)

The Department stated (March 2023) that mid-term review of MPs would be taken up as indicated.

1.7.1.3 Creation of Protection infrastructure

About 73 sq km *i.e.* 1/3rd of the total area (216.34 sq km) of the Jaldapara National Park is bifurcated by a National Highway (NH 31C). The northern portion of the area remained out of bound for the Rhinos, due to lack of protection infrastructure and managed habitat. It was observed that, though the Jaldapara NP had been notified in April 2012, the current MP (2018-28) did not plan for extension of the habitat area of the Rhinos to the northern portion. As a result, whenever Rhinos strayed into the northern area, they were driven back, as a protection measure. Thus, their habitat was severely restricted in the southern area. In view of the concentrated population in some ranges in the southern portion of the Park and increased cases of death due to disease and infighting, extension of habitat area of Rhino to the northern portion of the Park should have been considered in the MP, as detailed in the ***Paragraph 1.7.4.1***.

The Department stated (March 2023) that connection of the northern portion of Jaldapara, with the rest of the habitat, was under active consideration.

Recommendation 1:

The Department needs to institutionalise the planning process, with specified steps and time frames, to finalise its Management Plans, through a dedicated cell and a laid-down process.

1.7.2 Territorial integrity of Sanctuaries, ESZ and Corridors

Protected Areas (PAs) are well defined geographical spaces, recognized, dedicated and managed through legal and other effective means to achieve the long-term conservation of nature. Eco-Sensitive Zones (ESZs) are areas notified by the MoEF&CC around the National Parks and Wildlife Sanctuaries. The

[17] *Mahananda WLS, Senchal WLS and Singalila NP.*

purpose of declaring ESZ is to create a 'Shock Absorber'/ 'transition zone' for the PAs by regulating and managing the activities around such protected areas. They would also act as a transition zone from areas of high protection to areas involving lesser protection. As per NWAP, Eco-Sensitive Zone status under the Environment (Protection) Act, 1986, should be used as a tool to strengthen the buffers and corridors around the PA.

Wildlife habitats are becoming increasingly fragmented due to anthropogenic activities. Corridors help to reduce or moderate some of the adverse effects of habitat fragmentation by facilitating dispersal of wildlife between habitats allowing for both long-term genetic interchange and to re-colonize habitat patches from where wildlife have become locally extinct.

The issues regarding final notification of Sanctuaries and ESZs, maintenance of territorial integrity of Sanctuaries and the formulation of Zonal Master Plans for regulation of development in ESZ have been discussed in the subsequent paragraphs.

1.7.2.1 Notification of Protected Areas under WPA 1972

Clearly defined boundaries and legal status of the PAs help in effective protection of the wildlife. This in turn would ensure long-term conservation and reduce conflicts with local communities and thereby help PA management in effective discharge of their protection and conservation functions.

As per Section 26A of the Wildlife (Protection) Act, 1972 (WPA) (as amended in 1991), the State Government is empowered to declare an area as 'Sanctuary' after completion of procedure as contained in Sections 18 to 25 of the Wild Life (Protection) Act, 1972. Further, Section 66(4) of the Act provides that where any proceedings under Sections 19 to 25 are pending on the date of commencement of amendment Act (1991), any Reserve Forest or part of territorial waters declared under Section 18 shall be deemed to be Sanctuary. Thus, issue of Notification under Section 26A of the WPA is essential to grant legal status to areas other than Reserve Forest and territorial waters as a Sanctuary.

Audit observed that final notifications under Section 26A in respect of eight WLS[18], out of total 31 Protected Areas of the State were not issued. Reasons for non-notification were not available on records. State Government did not furnish reply in this regard.

Thus, due to non-issue of final notification under Section 26A of the WPA, these eight Sanctuaries lacked legal status which was detrimental to the conservation and management activities of wildlife and its habitat.

1.7.2.2 Notified area vis-a-vis area as per the GIS map

In the absence of clear boundary demarcation, the field staff of forest division finds it difficult to protect the forest/ Sanctuary land from encroachment. This may result in conflicts with local population and pose a threat to the wildlife habitats due to encroachment. Encroachment in the peripheral forests can be avoided by proper survey, demarcation, erection of boundary cairns and stone/ rubble wall fencing on the boundary.

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[18] *Jorepokhri, Raiganj, Ballavpur, Ramnabagan, Chintamani Kar, Sajnekhali, Haliday Island and Buxa.*

Forest Department created a Geographical Information System (GIS) Cell in July 1999, for interpretation of satellite imageries by integrating Satellite Remote Sensing; GIS and Global Positioning System (GPS) to solve specific problems of decision making in resource management. Satellite Remote Sensing techniques are *inter-alia* being used for demarcation of boundaries.

From the records it was observed that there was a difference between notified area and the digitalised map area in respect of the following six PAs as detailed in the **Table 1.3**.

Table 1.3 : PA wise area as per notified area and GIS map (in sq km)

Sl. No.	Name of PA	Notified Area	Area as per GIS digital map	Difference
1.	Neora Valley NP	159.8917	156.4640	3.4277
2.	Bethuadahari	0.6686	0.6600	0.0086
3.	Sajnekhali WLS	362.4000	362.3790	0.0210
4.	Haliday Island	5.9500	5.7570	0.1930
5.	Buxa WLS	314.5200	277.070	37.4500
6.	Pakhi Bitan (Bird Sanctuary)	14.0900	13.0300	1.0600
	Total			**42.1603**

Thus, the actual area available for wildlife was less compared to the notified area. This may lead to conflict between locals and the Department due to difference of perception regarding extent of PAs, which might adversely affect the planning and implementation efforts for protection, conservation and management of the respective PAs. Audit observed that there were encroachment (hutment and cultivation) on 68.86 ha of land in two PAs[19].

Recommendation 2:

The Department should complete the process of final notification for the eight Protected Areas in a time bound manner. Difference in area between notified areas and digitized maps should be reconciled and accordingly boundaries of PAs to be demarcated.

1.7.2.3 Implementation of Eco-Sensitive Zone

In pursuance of the decision taken (17 March 2005) by the National Board for Wildlife, MoEF&CC directed (27 May 2005), all States/ Union Territory Governments were to forward site-specific proposals for declaration of Eco-Sensitive Zones (ESZs) around the National Parks (NPs) and Wild Life Sanctuaries (WLSs). It was decided that delineation of ESZs would have to be site-specific and relate to regulation, rather than prohibition, of specific activities. Several reminders in this connection were also sent by MoEF&CC, to the State Governments. Hon'ble Supreme Court had also directed (4 December 2006) States/ UTs Government to forward proposals to the MoEF&CC in this regard. The MoEF&CC, subsequently, issued a set of Guidelines, for declaration of Eco-Sensitive Zones (ESZ) around NPs and WLSs, on 9 February 2011. The guidelines prohibited undertaking several activities like commercial mining,

19 *Neora valley (50.86 ha) and Jaldhapara (18 ha).*

saw mills, setting of industries causing pollution, establishment of major hydroelectric projects and brought establishment of hotels / resorts, commercial use of natural water resources, *etc*., under regulated activities. These Guidelines deal with the process and procedures to be adopted for declaring ESZ. As per the Guidelines, the purpose of declaring ESZs around NPs and WLSs, is to create some kind of shock absorber for the PAs. They would also act as a transition zone from areas of high protection to areas involving lesser protection.

Inspite of reminders from the MoEF&CC regarding submission of the draft notifications, the Department did not issue notifications in respect of seven WLSs, as of September 2022, as detailed in **Table 1.4**.

Table 1.4: Details of submission of final notifications of ESZs of various NPs and WLSs

Sl. No	Name of the PA	Date of final notifications
1.	Singalila NP	17.11.2017
2.	Senchal WLS	15.01.2019
3.	Mahananda WLS	22.09.2020
4.	Chapramari WLS	07.06.2019
5.	Neora Valley NP	12.09.2017
6.	Jaldapara NP	22.08.2017
7.	Chintamani Kar Bird WLS	15.01.2019
8.	Buxa NP within Buxa Tiger Reserve	11.06.2019
9.	Buxa WLS within Buxa Tiger Reserve	07.09.2020
10.	Raiganj WLS	26.11.2018
11.	Ballavpur WLS	27.09.2019
12.	Ramnabagan WLS	30.08.2019
13.	Bibhutibhusan WLS	10.10.2019
14.	Pakhi Bitan (Bird Sanctuary)	The transfer of land from the Irrigation Department was yet to be completed and declaration of ESZ around the PA was still pending
15.	Gorumara NP	Draft notifications of these six PAs were yet to be submitted to MoEF&CC.
16.	Sajnekhali WLS and Sundarban NP[20]	
17.	Haliday Island WLS	
18.	Lothian Island WLS	
19.	West Sundarban WLS	
20.	Bethuadahari WLS	Are under process in the MoEF&CC
21.	Jorepokhari WLS	

(Source: Information furnished by the Wildlife Directorate)

The Honourable Supreme Court of India directed (03 June 2022) the PCCFs of each State and Union Territory to make a list of subsisting structures and relevant details, within ESZs, forthwith, and furnish a report before the Honourable Supreme Court, within a period of three months. The Department, however, sought (September 2022) time extension for another 90 days for compliance of the Apex Court Directive. Audit observed that, due to prolonged

[20] *A single draft notification has been prepared for these two as both share common boundary in some areas.*

delay in notifying the ESZs and subsequent implementation of the notifications, the expansion of regulated activities continued unabated. The inventory of the subsisting structures within the ESZ of PAs, was still (November 2022) being prepared, as per the directions of the Apex Court.

(i) Preparation of Zonal Master Plan

As per the Guidelines for declaration of ESZ around NPs and WLSs, of MoEFCC (9 February 2011), the State Government, for the purpose of the ESZ, was to prepare a Zonal Master Plan (ZMP), within a period of one year from the date of publication of the Notification, for approval of the Competent Authority of State. The ZMP was not to impose restrictions on the approved existing land use, infrastructure and activities, unless so specified in the notification and was to factor in improvement of all infrastructure and activities, to be more efficient and eco-friendlier.

However, the State Government was yet to (as of August 2022) prepare a Zonal Master Plan including Eco-Tourism Master Plan[21] even after lapse of two to five years from the date of notification.

The Department stated (January 2024) that ZMP of Buxa Tiger Reserve ESZ and Jaldapara ESZ is being carried out in collaboration with Global Tiger Forum and the rest will be carried out shortly.

(ii) Formation of the Monitoring Committee

For effective monitoring of the provisions of the notification, under sub-section (3) of Section 3 of the Environment (Protection) Act, 1986, the MoEF&CC prescribed formation of Monitoring Committee, headed by the concerned District Collector as the Chairman, Park Manager as the Member Secretary and other nominated members by the State Government from different fields[22]. The tenure of the Monitoring committee was for three years, or till the re-constitution of the new Committee by the State Government.

The Monitoring Committee was to submit the annual action taken report of its activities as on the 31st March of every year by the 30th June of that year to the Chief Wildlife Warden in the State.

Audit observed that out of 13 PAs where ESZ notification had been made, the Monitoring Committees were constituted only in two PAs (Buxa NP and Sanctuary), though notifications for ESZ had been issued two to five years back. The Monitoring Committee in Buxa Tiger Reserve (BTR) was constituted on 28 June 2022, almost two years after the date of Notification. As of August 2022, three meetings were held, however, members from amongst the environmental experts, PWD, West Bengal Pollution Control Board (WBPCB), were not yet nominated by the concerned Departments. However, records regarding submission of annual action taken report of its activities to Chief Wild Life Warden were not available.

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[21] *Regulation of construction of new hotels and resorts, commercial establishment etc.*

[22] *Representative of Non-Govt. Organisation working in the field of Wildlife Conservation, an expert of Biodiversity, Ecology and Environment, a representative from State Public Works Department and State Pollution Control Board.*

Thus, inordinate delay in formation of the committees resulted in non-compliance of the provisions of this notification, it also affected synergies among different stakeholders and line departments.

The Department stated (January 2024) that Monitoring Committees of these ESZs are being notified by the State Government.

Box 2: Case Study

- In Jaldapara NP, 159 homestays/resorts (regulated activities) had been constructed within the eco-sensitive zone of the NP, since the date of notification. Further, two saw mills, which are under prohibited list of the ESZ notification, were allowed to be constructed after the date of the notification. As commercial activities, like hotels and resorts, need to be regulated in and around the Protected Areas, the absence of approval/ regulation will have significant impact on the wildlife and its habitats. In reply, the Department stated (March 2023) that homestays are not prohibited activity in the ESZs. The reply may be seen in view of the fact that, as per the ESZ notification of Jaldapara NP, all new Eco-Tourism activities were to be regulated as per the Tourism Master Plan, which is part of Zonal Master Plan. However, neither the Tourism Master Plan, nor the Zonal Master Plan, for the NP, has been prepared, till date (March 2023).
- The draft proposal for the Eco-Sensitive Zone for Sajnekhali Wildlife Sanctuary and Sundarban National Park, was yet to be (September 2022) forwarded to MoEFF. Meanwhile, proliferation of tourist lodges continued unabated, due to absence of ESZ notification. As of November 2022, 84 tourist lodges were operating at the boundary of the STR[23]. These lodges did not have proper means of garbage and sewage disposal. Garbage was being dumped in open pits on the side of the river banks and during high tides much of this non degradable waste was getting transported by the tidal waters, into the mangrove ecosystem. In reply, the Department stated (March 2023) that the Division had made (August 2022) the inventory of tourist lodges and made sure that no new resorts had been built since then. However, the fact remain that the Department made inordinate delay in notifying the ESZ around STR (as detailed in **Table 1.4**, Sl. No. 16-19)

Recommendation 3:

The Department should ensure preparation and notification of Eco-Sensitive Zones, Zonal Master Plans and Tourism Plan, in a time-bound manner and ensure effective monitoring of prohibited and regulated activities.

1.7.2.4 Management of Corridors

As per the NWAP 2017-31 (8.1 of Chapter 1), the State Forest Department should formulate and implement Management Plans for corridors[24]. The

[23] *Sajnekhali Wildlife Sanctuary and Sundarban National Park are the part of STR*

[24] *A Wildlife Corridor is a narrow strip of land with native vegetation that connects two or more larger areas of similar habitats or forest fragments and is critical for the maintenance of ecological process including migration, colonisation and inter-breeding of plants and animal communities thus enhancing the chances of survival.*

North Bengal landscape comprised of 14 identified corridors (as detailed in ***Paragraph 1.8.1.2***), spreading over three districts in the Terai region i.e. Darjeeling, Jalpaiguri & Alipurduar. Securing the movement of wildlife in these corridors is crucial, as these are prone to huge economic loss, due to damage done by Elephants during their migration. During 2017-22, 148 human deaths were reported, resulting in payment of compensation of ₹ 12.90 crore.

In reply, the Department stated (March 2023) that seven corridors have been prioritised in North Bengal and then further informed (January 2024) that State Level Monitoring Committee has approved to take up one corridor namely Titi-Rethi as pilot project and a proposal in this matter has been sent, during 2023-24, to the MoEF&CC for fund. However, the Department was yet to prepare a management plan for these corridors, which would minimise human-animal conflict.

1.7.2.5 Monitoring system for Management & Protection of wildlife

Forest Department, GoWB, as per Wild Life (Protection) Amendment Act, 2002 (Section 6), constituted (6 November 2003) the State Board for Wild Life (SBWL). The Act (Section 7 & 8) *inter alia* stipulated that meetings of SBWL were required to be held at least twice a year, to advise the State Government on the subject of management & protection of wildlife and Protected Areas.

It was observed that the first meeting of the SBWL was held on 24 December 2003, and the last meeting (11th meeting) was held on 13 June 2017. Thus, as of March 2022, only 11 meetings had been held, as against the stipulation of 37 meetings. In the absence of regular Board meetings, monitoring of various important issues on management of wildlife and protection like: (i) developing alternate habitats for the Rhino, (ii) creation of a Dolphin Community Reserve and (iii) Canopy opening of teak monoculture, followed by creation of grassland in the PAs of North Bengal, as detailed in the subsequent ***Paragraphs 1.7.4.1, 1.7.4.4*** and ***1.7.6.2,*** were adversely affected. In reply, the Department (February 2023) stated that the latest meeting was held in September 2022.

1.7.3 Conservation of threatened species

Conservation of threatened species and their habitat *inter alia* had been accorded high priority in NWAP 2017-31. Under a Centrally Sponsored Scheme (CSS), *viz*. 'Integral Development of Wildlife Habitat' (IDWH), State Governments were being encouraged to identify habitats for highly threatened species of flora and fauna outside the PAs and undertake conservation and long-term monitoring of such habitats. In response to the requisition by MoEF&CC (August 2018) regarding endangered species, the State informed (December 2018) that, out of 22 such species, it had five species, *viz*. ***Leopard, Royal Bengal Tiger, Gaur, Rhino and Elephant***. In response to MoEF&CC on the subject "*Recovery Programme for critically Endangered Species*" (September 2018), the State reported that, out of the total of 17 such species, it had three such species, *viz*. ***Dolphin (Susuk & Irrawaddy Dolphin), Rhino and Vulture (White-backed vulture & Slender-billed vultures)***. Further, consequent to the decision taken in the 49th Meeting of the Standing Committee National Board for Wildlife (13 June 2018), four species[25] were included to the list of 17 from West Bengal.

[25] *Northern Indian Terrapin, Red panda, clouded Leopard and Arabian Sea Humpback Whale.*

1.7.3.1 Estimation of threatened species

The population estimation of wild animals is an important management tool for scientific management of a Protected Areas (PA). NWAP 2017-31 envisaged review and updation of the list of endangered[26] and critically endangered[27] species of flora and fauna and complete Red Listing[28] of endemic species of India. The process was to be completed by 2020. Regular census of wildlife species enables PA manager to undertake effective conservation measures.

Audit observed that:

- Census had been conducted regularly[29] in respect of only three animals' *viz*. Tigers, Elephants and Rhinoceros, while census of Leopard and Gaur had been carried out almost ten years[30] back. The Department stated (March 2023) that population estimation of co-predators of Tigers such as Leopard were carried out along with Tiger census. However, fact remains that estimation figure of the co-predators was neither available in the Annual Report nor produced to Audit. The Department further stated (January 2024) that estimation of Himalayan Black Bear has been carried out this year for the first time.
- Red Panda is a critically endangered species of the Himalayan region, as per the International Union for Conservation of Nature (IUCN) Red Data Book[31] and has been included in Schedule-I[32] of the Wild Life (Protection) Act, 1972. Census had been conducted, in March 2018 and 2019, in both the Red Panda bearing National Parks, *viz*. Singalila National Park (SNP) and Neora Valley National Park (NVNP), respectively. The census in SNP was finalized and showed a marginal increase in numbers, from 38 in 2012, to 49 in 2018. However, as of October 2022, the census report in regard to NVNP, was yet to be finalised. As per the 2012 census, the number of Red Pandas in the NVNP was 32, while the Department did not have data in regard to the present population in NVNP. This affected the ongoing conservation programme in the Park as detailed in ***Paragraph 1.7.4.2***.
- Fishing Cat is the State Animal of West Bengal. It is listed as "Vulnerable"[33] in the red list of IUCN and is categorized as a Schedule-I species under the Wild Life (Protection) Act, 1972. A majority of fishing cat population is found outside protected areas, where protective measures are weak. It is found in wetland fields and extensively human dominated areas and is prone to: (i) Road Accidents, (ii) Habitat loss, (iii) Retaliatory or incidental killing and (iv) ritualistic hunting. However, the present status

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26 *Facing a very high risk of extinction in the wild as per IUCN.*

27 *Facing extremely high risk extinction in the wild as per IUCN.*

28 *In the International Union for Conservation of Nature Red list, 'Red' indicates the species that are at highest risk of extinction.*

29 *Tiger census done in 2012, 2013, 2014, 2016-17, 2018-19, 2019-20, Elephant census done in 2014, 2017 and Rhino Census done in 2012, 2013, 2014, 2015, 2019, 2022.*

30 *Leopard in 2012, Gaur in 2013-14.*

31 *Red data book is the document established by IUCN for documenting the rare and endangered species of plants, animals, fungi and also a few local species that exist within a state or country.*

32 *The species listed in Schedule-I of the WPA, 1972 requires conservation action on priority.*

33 *Facing a high risk of extinction in the wild as per IUCN.*

of the endangered species was yet to be assessed, due to non-availability of census figures. The Department stated (March 2023) that population estimation of Fishing Cats has been carried out (2022) in Sundarbans, however, it was not done in other areas of the State.

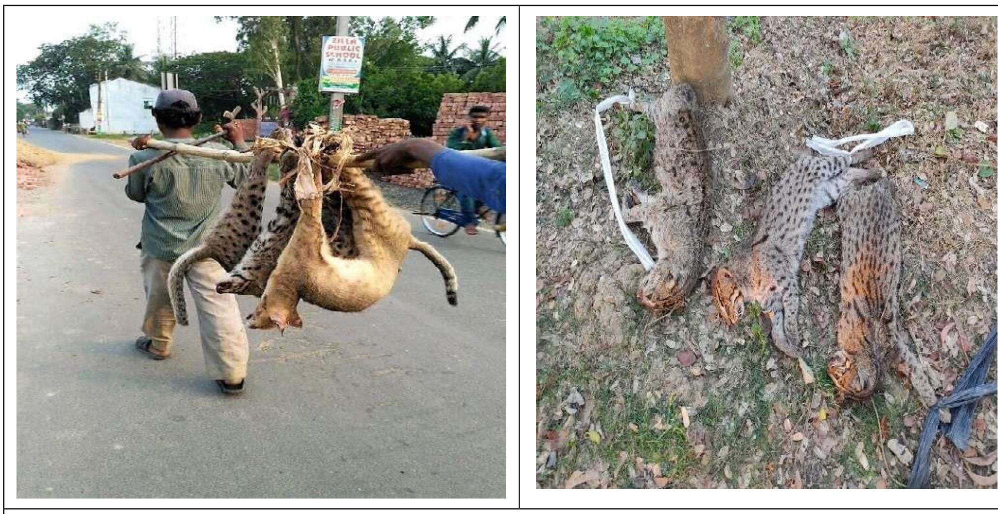

Fig 1.2: Fishing Cats and Jungle Cat killed by hunters

(Source: HEAL[34])

- The Sundarbans mangrove eco-system harbors many rare and endangered animal species, apart from the Royal Bengal Tiger. These include the Estuarine Crocodile *(Crocodylus porosus*). It was noticed that, as per census conducted in 2021, there were 86 salt water crocodiles (by direct sighting) in Sundarbans (including STR and South 24 Parganas Division), whereas the number was 140, as per the last census (2012 by direct sighting) in the same area.

Field Director (FD), Sundarbans Tiger Reserve (STR), stated (November 2022) that, during the census in February 2021, as the weather had been cloudy and foggy, direct sighting of the crocodiles was minimal. Thus, the census was only partially successful and did not deliver the actual figure. The reply may be seen in view of the fact that the partial success of the census was neither found recorded in the file, nor consequent action to conduct census afresh, to assess the actual count, was seen to have been taken.

Recommendation 4:

The Department needs to conduct proper and timely census for all the endangered species, to devise proper conservation strategies for these animals.

1.7.4 Recovery Programme for conservation of Critically Endangered Species

1.7.4.1 Conservation of Rhino

The State is one of the three[35] Rhino bearing states of the country, accounting for about 10 *per cent* of the wild population of the Indian One Horned Rhinoceros.

[34] *Human & Environment Alliance League, a public charitable trust works in the field of environment and wildlife conservation across the entire State of West Bengal.*

[35] *Assam, Uttar Pradesh and West Bengal.*

Conservation initiatives in two PAs, *viz*. Jaldapara National Park and Gorumara National Park, had been a success, as evident from the population rise of the species from 14 and 5, in mid 1980s, to the present (2022 Census) level of 292 and 55, respectively. However, the increase in population at both the places had given rise to new issues, which needs to be taken care of as part of the National Conservation Strategy for the Indian One Horned Rhinoceros. MoEF&CC, in the context of "*National Conservation Strategy for the India Rhino*", *inter alia* prescribed the following:

- Strengthening protection of the existing population, by curbing anti-poaching activities and illegal trade, with effective legal follow-up against the offences.
- Re-introducing Rhinos in potential habitats, for creating viable populations and increasing the present range, through translocation.

The State Board of Wildlife approved (June 2017) the proposal for developing alternate habitats[36] for the Rhino. CCF, Wildlife (Headquarters), West Bengal, in its report regarding '*Recovery programme for critically endangered species*', to the MoEF&CC, informed (December 2018) that new sites (Patlakhawa and Nathua) had since been identified, to absorb the excess Rhinos.

In this regard, Audit observed the following:

- The Final Study Report[37] (September 2021) on the impact of habitat management and herbivore's carrying capacity, in the PAs of North Bengal, showed that the total grassland area of Jaldapara and Gorumara NP, could support only 111 and 38 Rhinos, respectively. Therefore, these PAs had reached the limits of carrying capacity and animals had started straying into agriculture fields. The Department stated (January 2024) that the study of carrying capacity of these two NPs was based on wrong assumptions and hence the result is faulty. The audit suggests that the department may conduct survey to assess the carrying capacity of Jaldapara and Gorumara NP.
- The Coochbehar Forest Division has been administering the Patlakhawa Protected Forest (PF), with the assistance of four Forest Protection Committees. Records showed that 70 ha grassland had been created (during 2017-19) in this PF, as part of the habitat development for Rhino re-introduction. However, Rhinos were not introduced here. The concerned DFO (Coochbehar Division), brought (March 2022) various issues/ problems[38] to the notice of CWLW, regarding management of the PF and re-introduction of Rhino.

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36 *Such as Nimati in Buxa, Patlakhawa in Coochbehar and Titi in Jaldapara.*

37 *Impact of habitat management practices especially canopy manipulation and grassland restoration on the habitat use pattern of herbivores and the herbivore-carrying capacity in Jaldapara NP, Gorumara NP and Mahananda WLS commissioned by West Bengal Forest and Biodiversity Conservation Project under JICA fund.*

38 *(i) Absence of legal status for protection of wild animals, (ii) watch towers were not at proper location and in poor condition without equipment for protection of rhino, (iii) absence of energized power fencing to prevent straying, (iv) Staff strength was very poor and not skilled and trained enough for protection, (v) absence of adequate grassland and (vi) set up for R.T sets/ Walky Talky for communication.*

- Subsequently, a proposal for extending the Rhino habitat to the northern part (bifurcated by NH; about 73 sq km *i.e.* 1/3rd of the total area of the park) of the Jaldapara NP, was forwarded to the CWLW, by the CCF, Wildlife (North), in September 2022. This area remained out of bounds for the Rhinos, due to lack of protection infrastructure and managed habitat. The proposal *inter alia* included construction of forest road-cum-embankment on the eastern boundary of the NP, watch towers, pilkhanas[39], creation and maintenance of wallow pools and habitat improvement works, at an estimated cost of ₹ 57.27 crore. Permission was accorded (October 2022) by the CWLW, for taking up the works, however, fund was not provided till date (November 2022). No action had been initiated in respect of the proposed site at Nathua for Gorumara population.
- Thus, as of October 2022, the Department had failed to expand the present distribution range to the identified sites. Meanwhile, due to delay in the process of expansion of the present distribution range, incidences of infighting and disease were on the rise. During 2017-22, 78 Rhinos had died. This figures included 24 deaths due to in-fighting and diseases in these NPs.

The Department stated (March 2023) that work for development of northern part of Jaldapara commenced in February 2023.

1.7.4.2 Conservation of Red Panda

The Padmaja Naidu Himalayan Zoological Park (PNZHP), Darjeeling, initiated a project in 2019 titled "*Red Panda Augmentation Programme in Singalila National Park (SNP) and Neora Valley National Park (NVNP)",* to improve the habitat, assist the recovery and strengthen the protection status of Red Pandas in the forests of SNP and NVNP. The proposal was submitted (April 2019), by the Forest Department, GoWB, to the MoEF&CC. It included an action plan for successful augmentation of red pandas in SNP and NVNP, with assessment of threats and measures to mitigate them; selection of red pandas; capacity building of staff; choice of release sites; habitat improvement and protection plan; post-release monitoring of the released animals and the tentative budget. The project, having a total outlay of ₹ 16.66 crore, for a period of five years, was approved by MoEF&CC in June 2019 and by Central Zoo Authority (CZA), Ministry of Environment and Forests (GoI) in September 2019. The proposal envisaged release of eight Red Pandas, four each in SNP and NVNP from PNZHP. As of March 2022, ₹ 3.79 crore[40] had been incurred on the conservation programme. However, as of September 2022, only four animals could be released (January 2022) in SNP, against the target of eight (four each in SNP and NVNP), as a site for soft release, in the NVNP, could not be selected.

Records related to release of four pandas in SNP showed that one male panda had died (7 March 2022), in the soft release enclosure, due to Pyothorax (infective origin), before its release in the wild. Subsequently, another female panda had died (9 April 2022) due to pneumonia. It was observed that both the

[39] *Place where captive elephant kept.*

[40] *₹ 0.76 crore was incurred by PNHZP for restocking of red pandas in SNP, for improvement of habitats of SNP and NVNP expenditure of ₹ 1.54 crore and ₹ 1.49 crore was incurred by Darjeeling Wildlife Division and Gorumara Wildlife Division respectively.*

animals were more than nine years of age. This may be seen in view of the fact that the life span of Red Panda, in wild, is between 10-12 years. Therefore, the selection of animals, for release in wild, at the fag end of their life cycle was not justifiable.

The Core Committee[41], in its 8th Meeting held in January 2022, decided to revise the augmentation programme, by proposing release of 20 Red Pandas in the wild (12 at SNP and 8 at NVNP). The Concept Note[42] (September 2022) proposed to release 20 Red Pandas in SNP, to sufficiently restock the population and then to restock the population in NVNP, so that the reintroduction programme would have long term and real impact. So far (September 2022), only three Red Pandas, below five years of age, were proposed to be released from Conservation Breeding Centre and PNHZP for further release in SNP.

Thus, due to deficient planning, the number of animals to be released in two national parks was frequently changed and the age factor of the animals to be released was not considered before the death of the two nine-year-old animals released in March 2022. Besides, on site for soft release, could not be identified in NVNP, even after expenditure of ₹ 1.49 crore, for improvement of habitats by the concerned Gorumara Wildlife Division.

In reply, the Department stated (March 2023) that the age factor of the animals for release depends on the availability of animals and upon the behavioural competence. It was, however, seen from the Annual Report of the PNZHP that there were 15 animals of age below five years in the Zoo, as of March 2022.

1.7.4.3 Conservation of Vulture

Out of nine species of vultures the White-backed Vulture (*Gyps bengalensis*), Long-billed Vulture (*Gyps indicus*) and Slender-billed (*Gyps tenuerostris*) Vultures, were, by far, the most populous species in India. Over the last decade, however, there has been decline by over 99 *per cent* in the population of these Vultures over most parts of the country. The overall cause of the decline has been identified as a drug called 'Diclofenac', given to lifestock as an anti-inflammatory drugs which is taken by vulture through feed of dead carcasses of such animals.

A Memorandum of Understanding (MoU) was signed (June 2005) between the Forest Department, GoWB, and the Bombay Natural History Society (BNHS), a Non-Government Organization (NGO), for conservation and breeding of the Gyps species, at the Vulture Conservation Breeding Centre (VCBC), Rajabhatkhawa, in BTR.

The main objective of the centre was to house 25 pairs each of White-backed Vulture, Slender-billed Vulture and Long-billed Vulture and to release 100 pairs of each of three species within a period of 15 years of the start of the release programme since 2005. As per the 6th and 7th meetings of the Governing

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41 *A Core Committee consisting of CCF, Wildlife North, Director, PNHZP, DFO, Darjeeling Wildlife Division, DFO, Darjeeling Division, DFO, Gorumara Wildlife Division, Veterinary Officer, PNHZP, Research Biologist, PNHZP, was formed by PCCF, WL and CWLW in July 2018 to look at all the aspects of translocation and restocking of captive bred red pandas in the wild habitats of SNP and NVNP.*

42 *Of Red Panda Augmentation Programme in SNP and NVNP by PNHZP, Darjeeling.*

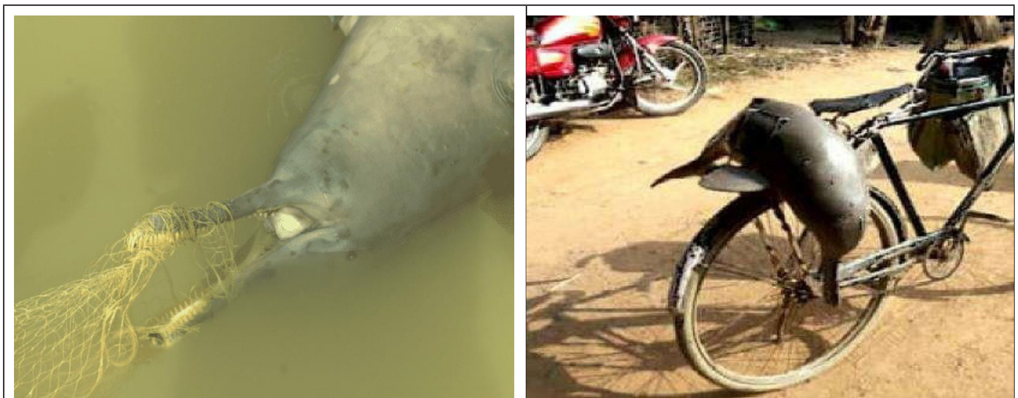
Council[43] (19 June 2017 and 22 February 2019, respectively), the main aim of the conservation breeding programme was to release captive bred vulture in the wild, to augment the wild population. However, it was seen that, as of March 2023, only 33 White-backed Vultures had been released in the wild, Slender-billed and Long-billed Vultures could not be released.

The Department stated (March 2023) that the target number for release could not be achieved due to crash in the vulture population and long (5-7 years) time to mature for breeding. However, the fact remains that the targets had been fixed, considering all these aspects.

1.7.4.4 Conservation of Gangetic Dolphin

The Gangetic Dolphin has been designated as the National aquatic animal, since May 2010, and included in Schedule-I of the Indian Wild Life (Protection) Act, 1972. It is also categorised as 'Endangered' in the IUCN Red list. The population of Gangetic Dolphin in 1982 was estimated between 4,000 and 5,000. It declined to less than 2,000 by 2014, with an annual mortality rate of 130-160, as per survey of World Wildlife Fund (WWF) the number was further reduced to 650 (minimum), as reported by the Department in January 2024. The major threats identified for the conservation of Gangetic Dolphin *inter alia* included the following:

- Indiscriminate use of illegal size of fishing nets, with mesh size less than 40-90 mm.
- Pollution in river Ganga.
- Construction of barrages, resulting in habitat getting fragmented.
- Poaching for its oil and meat.



Illegal Fishing Practices, resulting in Dolphin mortality (Source: HEAL)

Dolphin poached in Malda (Source: CWLW)

Fig 1.3: Illegal fishing practices and poaching of Gangetic Dolphin

The State Board of Wildlife (SBWL) had approved (October 2015) creation of a Dolphin Community Reserve. However, no Community Reserve has been declared till now (October 2022).

43 *As per Article 4B of the Mou a Governing Body was set up for the conservation breeding of critically threatened vulture with the Principal Secretary, Forest Department, GoWB, as the Chairman, along with 13 other members.*

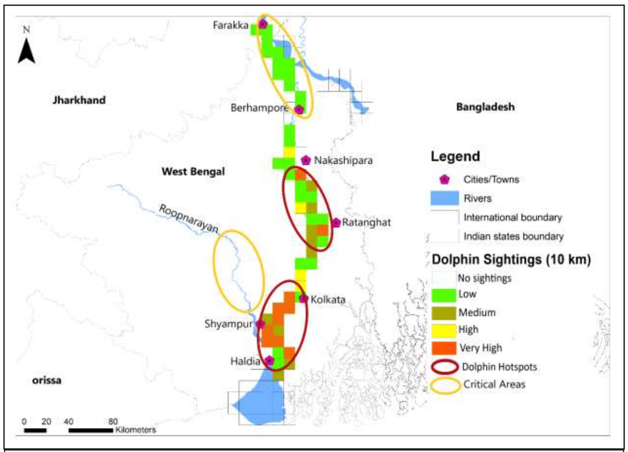


Fig 1.4: Hot spot of Dolphin in Hooghly River

As per the Wildlife Institute of India (WII) Report 2021, there are increasing incidences of poaching of Dolphins for oil, and deaths due to net entanglement reported in the area (from Farakka to Haldia). With increase in navigation, and motorized boats, there is further stress on the Dolphins which rely on acoustic clues for survival. The report further states that confluences at Roopnarayan and stretch between Farakka and Berhampore have become critical areas while the stretch between Nakashipara and Ratanghat, Kolkata and Hooghly, should especially be conserved, as these are the two major hotspots of Dolphins in Hooghly.

A proposal was sent (November 2020), by the DFO, Coochbehar, regarding conservation of Dolphins in Torsha river, as there were repetitive sightings of Dolphins, but there were issues like sand mining in the river bed, unsustainable fishing by blocking river flow and river pollution due to idol immersion, which affected the habitat. The proposal had not been accepted (as of May 2022), by the PCCF, Wildlife & CWLW.

Apart from few awareness signboards put up at certain locations, visible enforcement efforts or systematic patrolling to track/prevent Dolphin deaths, were not taken. Further, evidence was not available that the forest and fisheries Departments had collaborated to prevent the use of banned fishnets.

In reply, the Department stated (March 2023) that MoEF&CC has approved the plan for Gangetic Dolphin conservation under CSS-IDWH scheme at a cost of ₹ 134.62 lakh. It also stated that the Department had written to the Director, Fisheries Department to take action against use of illegal Chinese nets. The reply may be seen in view of the fact that the State Board of Wildlife (SBWL), had already approved the proposal in 2015, but notification in this regard was still pending.

1.7.4.5 Augmentation of Tigers in the Buxa Tiger Reserve

The health of the Tiger population in a forest is an indicator of the health of its ecosystem. The Buxa Tiger Reserve (BTR) was home to a healthy Tiger population, but gradual degradation of ecosystem over decades, mainly due to anthropogenic factors, witnessed a steady decline of the same. The Tiger Census Report, 2018, of the National Tiger Conservation Authority (NTCA), declared that there were no Tigers in BTR. Among the major factors considered for the decline of the Tiger population were hunting, grazing, illegal felling of trees, firewood collection and presence of enclaved villages. Invasive weed species, coupled with plantation of teak trees in grasslands and other areas, were the other major factors for decline of the quality of habitats for Tigers.

In this context, a Detailed Project Report (DPR) on the '*Tiger Augmentation Programme*' was prepared and submitted to NTCA, in March 2017. This was an essential intervention to avoid local extinction and to ensure long term viability of the population. Six tigers (2:1 ratio, *i.e.,* one male for every two females) were proposed to be translocated from the Kaziranga National Park, Assam. Accordingly, the NTCA approved (April 2017) the project, with the condition that the augmentation & long-term monitoring were to be as per the Standard Operating Procedure (SOP) of the NTCA, focusing on strengthening of the protection mechanism, and the relocation of villages would be done in a time-bound manner.

However, Audit observed that since then, only certain minor steps had been taken for Tiger reintroduction in BTR which included:

- 644 Spotted Deer had been translocated (2017-18 and 2022) in the wild, for enrichment of the prey base.
- Two Forest Villages[44] in the core area, namely Gangutia and Bhutiabasty, were proposed (October 2022) for relocation (Phase-I) to NTCA. However, approval for the proposal was awaited, as of March 2023.
- Preparatory work, *viz*. habitat mapping, prey base assessment and sign surveys and camera tapping for Tiger and co-predators, was carried out.

In reply, the Department stated (March 2023) that village relocation, habitat improvement and creation of soft release facility for tiger are cost intensive and fund required was not forthcoming. The Department further stated (January 2024) that GoWB has already released ₹ 36.70 crore for relocation of two villages mentioned above and translocation of tigers would be taken up as per the advice of NTCA and Wildlife Institute of India (WII).

Audit is of the view that still pro-active action was needed for minimising the anthropogenic pressures, such as relocation of villages (as there are 13 other villages to be relocated in critical tiger area), tourism activities in and around the TR *etc*., as detailed in ***Paragraphs 1.8.5.1*** and ***1.8.7.1***. As a result, re-introduction of Tiger could not be done even after a lapse of five years from the approval of the NTCA and the State Board of Wildlife.

Box 3: Good Practice

- ► The Panna Tiger Reserve is situated in Central India. By the year 2009, the entire population of the Tigers had been eliminated from this Reserve. The Tiger reintroduction programme was started in November 2009 and, as per the 2018 Tiger Census, the Tiger Reserve has 25 adult Tigers, making it a success story.
- ► Augmentation and Recovery of the Tiger Population in Satkoshia Tiger Reserve, Odisha, had been implemented during 2017 to 2022, with successful translocation of two sub-adult Tigers from Madhya Pradesh.

Recommendation 5:

The Department should analyse the reasons for dwindling numbers of critically endangered species and take proactive steps for their conservation, including protection and restoration of habitats, proper breeding programmes and translocation.

[44] *195 beneficiaries from Gangutia Forest Village and 51 from Bhutiabasty.*

1.7.5 Wildlife Health Management

As per the National Wildlife Action Plan (NWAP)-2017-2031, with increasing shared use of forests by communities and wildlife, human population explosion, habitat fragmentation, and land-use-changes that force wild animals to come into frequent contact with humans. Wildlife health management has now expanded to rehabilitating the rescued or displaced animals in the wild, carrying out health assessment of wild animals for the purpose of translocation and reintroduction; maintaining surveillance for both endemic and emerging infectious diseases; and taking preventive measures against any potential spread of zoonotic diseases, due to interactions between wild animals, humans and livestock. NWAP 2017-31, *inter alia* stipulates the following actions in this regard:

- Integrating the practice of disease surveillance, with the regular watch & ward and monitoring regime, in TRs, PAs and general forests.
- Documentation and Reporting of any unusual mortalities or behavioral aberrations in animals.
- Building capacity of veterinarians of the State Forest Departments and those of the State Animal Husbandry departments located in the forest bearing districts, in wildlife health management and dealing with Human Wildlife Conflict (HWC).
- Establishing and strengthening well-equipped centres for wildlife rescue/ rehabilitation and disease surveillance, in and around PAs.

1.7.5.1 Management of captive animals in the Rescue centre/Zoo

There are 13 recognised Rescue centres[45]/Zoos in the State. Out of these 13 centres, four[46] were covered in Audit as these were within the jurisdiction of the sampled units. There were no veterinary hospitals under the control of the Wildlife Division and only three[47] centres had an animal hospital/ polyclinic attached. Audit further observed the following:

A) Rescue Centre at South Khairabari under Jaldapara Wildlife Division

The South Khairbari Rescue Centre and Leopard Safari/Mini Zoo, South Khairabari, encompassing an area of 65 ha, has been functioning since August 2005. The objective was to act as a centre for receiving ill, injured, seized and orphaned animals from North Bengal, for temporary shelter, treatment and release of the same in wild, subject to availability of suitable habitat. Since September 2015, it had been recognised as rescue centre only. Meanwhile, a series of communications were made between the West Bengal Zoo Authority (WBZA) and CZA, regarding approval of the Master Layout Plan (MLP), for recognition as a mini zoo, including demarcated areas for Leopard safari, herbivore and carnivore enclosures. Finally, CZA approved the MLP in May 2020. However, as of October 2022, construction work had not been started. As of November 2022, there were 21 Leopards of different age groups[48] in the Centre.

[45] *'Rescue Centre' means an establishment for the care of animals and not open for exhibition to the public.*

[46] *South Khairbari Rescue Centre, Surulia Mini Zoo, Junglemahal Zoological Park and Sundarbans Wild Animals Park.*

[47] *Alipur Zoological Garden, Siliguri and Padmaja Naidu Himalayan Zoological Park.*

[48] *(i) Less than five year –five, (ii) five to-ten year –four, (iii) Ten to 15 year-eight and (iv) more than 15 years –four.*

Audit observed following deficiencies in this regard:

- As per CZA standards, every rescue center is to provide for a proper waste disposal system, for treating both the solid and liquid wastes generated in the zoos. It was observed that a proper waste disposal system was not available in the centre.
- As per the standards a treatment room with basic diagnostic facilities, comprehensive range of drugs and a reference library on animal health care and upkeep, is needed in the centre. However, it was observed that, at present, drugs were being supplied from the central stock situated at Madarihat, which is sixty kilometers away from the zoo.
- The Standards also stipulated isolation and quarantine wards, to take care of newly arriving animals and sick animals, so as to minimise the chances of infections spreading to other animals of the zoo. However, such isolation and quarantine wards were not available. During the period 2017-22, 14 Leopards had died due to different diseases.
- As per the Standards, suitable vegetation or 'furniture' that facilitate natural movement and behavior (climbing, swimming, running, burrowing, digging, *etc*.), should be kept for the captives. Joint site inspection (12 November 2022), with Audit and Departmental staff, revealed that Leopards were reluctant to go to the open enclosures adjacent to the closed compartment. As per the discussions held during the Joint Inspection, some more facilities needed to be provided, so that the leopards could spend more time in the open enclosure, in a stress-free environment.

The Department stated (March 2023) that, the West Bengal Zoo Authority (WBZA) had planned renovation of the rescue centre and the deficiencies pointed out in audit would be addressed.

B) Sundarban Wild Animal Park at Jharkhali

Scrutiny of the inventory register of the Park revealed that there were no Deer in the Zoo till December 2018. In January 2019, twenty-two Deer were brought to the Zoo, from the Garchumuk Mini Zoo. During January 2019 to March 2022, twenty-eight Deer were born. However, 27 Deer died during that time. Thus, as of March 2022, their total number was 23. The main reason for the deaths included inundation of the Deer enclosure due to tidal saline water, along with Snake bites, infighting injuries, outside animal attacks *etc*. During joint site visit of the Zoo on 16 August 2022, it was observed that the tidal water remained in the Deer enclosure, even at the time of low tide. The Forest Range Officer (FR) of Matla Range brought (August 2020) this matter to the notice of the DFO, South 24 Parganas Division. The FR suggested increasing the embankment height and installing a sluice gate system, on an urgent basis, for saving captive animals.

The Department stated (March 2023) that proposal for increase of height of the embankment had been under consideration from Compensatory Afforestation Fund Management and Planning Authority (CAMPA) Fund.

However, the fact remains that, as of March 2023, neither had the embankment height been increased, nor had the sluice gate been installed, to save the captive Deer from the saline water, leaving the condition of the Deer enclosure susceptible to inundation by tidal water.

C) Surulia Mini Zoo, Purulia

As per Central Zoo Authority's (CZA) Guidelines-2008[49], the pre requisites for a successful release[50] programme are assessment of the **c**apacity of wildlife habitat at the release site; assessment of the capacity of the animals that are being released, to adapt themselves in the wild and fend for themselves successfully; and assessment of the critical needs of the species to be released. The animals earmarked for the release should initially be shifted to a soft release[51] facility to acclimatise for survival in the wild, through training, and through experts, if so required. Further, post-release activities, including demographic, ecological and behavioral studies, on released animals, should be continued.

Scrutiny of records of the Kangsabati (North and South) Divisions revealed that a proposal was sent (January 2019) to the CCF/South-West Circle, for release of 30 Spotted Deer, from Surulia Mini Zoo to a site[52], on trial basis, as the site was suitable in terms of food, forest cover, water source *etc*. As per the approval (February 2019) of the CF Wildlife (H.Q.), the translocation programme was to be undertaken during March 2019. However, it was seen that 30 Spotted Deer were released at a new site - Natundih Mouza, in March 2019 instead of Kantagora Mouza, which had been identified earlier. The site was changed as the proposed site was too far away, to be monitored against the poaching threat during the upcoming *shikar utsav*[53].

However, the suitability of the changed site was not assessed. Records regarding approval of the same by the competent authority were not available at the Kangsabati (South) Division. Out of 30 released Deer, nine Deer died (between March 2019 and 2021) due to dog bites.

The Department stated (March 2023) that the released Deer were kept under surveillance, with the help of Joint Forest Management Committee (JFMC) members, upto three weeks. However, during night it was not possible to track them. Further, it was stated that trial release had not been taken up in the earlier site, as there had already a pre-existing and growing population in that site. However, the fact remains that the CZA Guidelines had not been followed in respect of pre-release requisites and post-monitoring, for successful release of captive zoo animals in the wild.

Thus, the site of the final release was changed (6 March 2019) three days before the date of final release, due to which, the practice of soft release, on trial basis, was not conducted. The post-release monitoring was also inadequate, as a result of which nine Deer died, after being released into the new wild habitat.

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[49] *For establishment & scientific management of Zoo in India.*

[50] *Release of animals directly in wild.*

[51] *Soft release is the release into a facility specially created near the release site, which has all the attributes of the wildlife habitat in which the animals are to be released, to give them time to acclimatise for survival in the wild.*

[52] *Kantagora Mouza (JL No. 122) under Nanna Beat of Jamuna Range.*

[53] *Hunting festival of tribals.*

D) Treatment of rescued and seized animals

Apart from the recognised zoo/rescue centres mentioned in the preceding paragraph there are five centres[54] for treating rescued seized animals, in the wildlife divisions. Audit observed that these centres had acute infrastructural bottlenecks. In reply, the Department stated (March 2023) that setting up two animals rescue centres (one each in North Bengal and South Bengal) are in active consideration. This impacted the treatment of the rescued animals. It also had an impact on identification of the cause of death through post mortems.

E) Rescue centre at Kulik Wildlife Range under DFO Raiganj

Wild animals rescued by the different Range Offices of the Raiganj Division, as well as other departments, like police and BSF are brought to the Kulik Wildlife Range for treatment and subsequent release to the forest. The Management Plan (2011-12 to 2020-21) envisaged setting up a full-fledged rescue centre with proper veterinary care. Audit observed the following:

- Veterinary trained personnel were not posted, nor was a primary treatment facility available at the centre. The veterinary Doctor of Animal Resources Development Department (ARDD) was being called for treatment, in cases of emergency.
- The Range Office/ Rescue Centre did not have stock of medicines, surgical apparatus, post mortem room and quarantine places.
- During November 2018 to April 2022, 11 rescued Nilgais were brought and kept in an enclosure and seven calves were born in the period, but the space in the Nilgai enclosure was not enough. The matter was brought to the notice of the DFO, Raiganj Division, by the Range Officer, Kulik Wildlife Range, in March 2022. But neither had steps been taken to augment space for the additional Nilgais, nor had the excess Nilgais been translocated to another place.
- Overpopulation of Nilgais led to fierce infighting, leading to injuries, which resulted in infections and led to the death of 13 Nilgais, during March 2022 to August 2022. Only two Nilgais were released in the wild in September 2022.

The Department in reply stated (March 2023) that the audit observation had been noted and the matter was being looked in by WBZA.

F) Management of the Departmental captive Elephant at Jaldapara NP

Departmental captive Elephants play a vital role in forest protection and ecotourism in the PAs of North Bengal. In addition, they were regularly sent to South Bengal, for Elephant driving operations[55]. The Jaldapara National Park possesses 83 captive Elephants, which are stationed at the Central Pilkhana, Hollong[56] located along with 33 other Pilkhanas where Elephants are kept,

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[54] *(i) Rajabhatkhawa for BTR, (ii) Madarihat for Jaldapara NP, (iii) Lataguri for Gorumara, Neora NP and Chapramari WLS (iv) STR and (v) Raiganj for Kulik WLS.*

[55] *The process by which wild elephants are driven into the forests, from places of human settlement.*

[56] *Elephant shelter, where captive departmental Elephants are kept, for protection and tourism duties.*

for protection duties and tourist purposes. Newly born Elephants and rescued Elephants are normally kept in the Central Pilkhana.

Joint inspection of the five pilkhanas[57] disclosed the following:

- Except one[58], none of the other pilkhanas had adequate sheds[59] or no sheds[60] at all for Elephants. The Department, in reply, stated (March 2023) that pilkhana attached to the watch tower were temporary in nature and large pilkhanas were having pacca sheds. The reply may be seen in view of the fact that field visit of two[61] large pilkhanas, having total elephants of 18 showed that the sheds could accommodate only ten elephants.
- At present 83 packaged daily labourers (PDLs) and 76 daily labourers (DLs) were engaged as Mahout and Patawalas, working for more than ten years. Both PDLs and DLs are not afforded official medical benefits. During the Audit period, 18 DL/PDL were either killed or injured by the captive Elephants, which indicated their vulnerable situation. The Department accepted (March 2023) the fact and said that the matter of employment conditions of Mahout and Pattawalas were under consideration by the Government.
- As per the Management Plan of Jaldapara NP, Elephant gears like Gaddi, belt are to be checked and changed regularly. At present, Elephant gears like Gaddi, Belt, Dhuchi[62] are changed once in a year. However, due to wear and tear, these get damaged. Therefore, field level staff were of the opinion that change once every six months may be considered, for the overall well-being of the Elephants. In reply, the Department stated (March 2023) that this is not required, as the equipment easily lasts for one year. However, the reply was not in consonance with the opinion of the field level staff.

To overcome the problem a new Elephant training centre at Salkumar Forest Block was proposed (April 2019) in the Management Plan (2018-28), to impart training to Mahout and Patawalas, to upgrade their skills, on a regular basis, to train departmental Elephants, to improve their efficiency. An Elephant rescue and training centre and a veterinary centre was also proposed at the site. But the centre was not established till date (November 2022).

The Department did not offer comment as to why the Elephants training centre at Salkumar was not taken up, however, it stated (March 2023) that training of Mahouts and Patawalas were being regularly conducted. However, fact remains that, during the Audit period, only three trainings were conducted.

1.7.5.2 Vaccination of livestock around National Park

NWAP-2017-31 envisaged maintaining surveillance for both endemic and emerging infectious diseases and taking preventive measures against the potential spread of zoonotic diseases due to interactions between wild animals, humans

[57] *Chilapata Watch Tower (CWT), Hollong, Jaldapara East Range (HQ), NEC and Jaldapara Watch tower.*

[58] *Chilapata Watch Tower.*

[59] *Hollong and Jaldapara East Range (HQ).*

[60] *NEC and Jaldapara Watch tower.*

[61] *Hollong and Jaldapara East Range (HQ).*

[62] *It is made of GI pipe and is an elephant gears.*

and livestock. Grazing by cattle, inside the PA of Jaldapara, Gorumara and BTR exposed wild animals to the risk of cattle borne diseases. In these PAs the total livestock population in fringe villages, forest villages and tea gardens, is about 2.70 lakh[63] as per the records of the divisions. The cattle also share the common water holes, with wild animals. As such, there are chances of dissemination of cattle borne diseases (Anthrax, FMD, HSBQ, *etc*.) among the wild animals. The status of vaccination in these PAs, during the audit period, is detailed in **Table 1.5**.

Table 1.5: Vaccination of cattle population in Gorumara, Jaldapara NP and BTR

PA	Population	2017-18	2018-19	2019-20	2020-21	2021-22
Gorumara	41,000	23,900	15,250	5,930	1,100	0
Jaldapara	78,496	68,500	73,500	85,000	50,800	50,900
BTR	1,50,000	1,023	956	1,200	1,820	0

(Source: Information furnished by the concerned divisions)

Thus, it was seen that the vaccination in Gorumara ranged between 1,100 to 23,900 (2.7 to 58 *per cent*), whereas in BTR it was 956 to 1,820 (0.64 to 1.21 *per cent*), during 2017-18 to 2020-21, respectively. There was no vaccination in the year 2021-22, in Gorumara and BTR, which had left the wild animals susceptible to cattle borne diseases. Records of these PAs showed that during the Audit period (2017-22), 39 animals[64] had died of suspected FMD, Anthrax and unspecified diseases. It was also observed that in Jaldapara NP, during 2019-20, the number of vaccination was higher than the cattle population. Reasons in this regard were, however, not forthcoming from the records made available.

The Department stated (March 2023) that regular vaccination programme was undertaken in collaboration with the Animal Resources Developement Department. However, deaths of large number of animals due to diseases indicated need for a more intensive vaccination programme.

1.7.5.3 Standard Operating Procedure (SOP) for reporting death of animals

NWAP-2017-31, stipulated for documentation and reporting of unusual mortalities or behavioural aberrations in animals. The SOP for dealing with the carcasses of Major Wildlife, published by the Directorate of Forest (Wild Life Wing), GoWB, *inter alia* provided that the Department Veterinary Officer or the local Veterinary Officer should be immediately informed and should be taken to site of carcasses found. As per the suitability and advise of the Veterinary Officer, the carcass should be subjected to Post Mortem (PM), either at the site or at a suitable location. Necessary samples were to be collected, for further forensic tests. DFOs were to submit detailed reports in this regard, as per the prescribed proforma, along with the PM report and DFO's comments, to the CWLW.

Scrutiny of the registers/files of death of wildlife, of five wildlife divisions[65], revealed that there had been 1,223 wildlife deaths, during the period from

[63] *41,000-Gorumara, 78,496- Jaldapara and 1,50,000-BTR.*

[64] *Gour-17, Rhino-14, Leopard-4 and Sambar-4.*

[65] *Buxa Tiger Reserve (West and East), Jaldapara Wildlife division, Gorumara Wildlife Division and Darjeeling Wildlife Division.*

2017-22. Of this, 236[66] PM Reports of wildlife were not found on records, including 165 major animals[67] listed in Schedule-I of the Wildlife (Protection) Act, 1972.

This indicated lapses on the part of the Department, in documentation and reporting of mortalities, as per the SOP, which impacted the health management system of the PAs.

The Department stated (March 2023) that all deaths were recorded and autopsy are invariably conducted and such reports are available in divisions. However, such reports were not furnished during Audit.

Box 4: Good Practice

The Mobile Veterinary Service (MVS) unit in Similipal Tiger Reserve (in Odisha) has been functioning since April 2014. The MVS unit is involved in rescue and rehabilitation of displaced wild animals, clinical interventions of diseased animals, attending Veterinary aid and emergency responses in human-wildlife interaction (HWI) cases and post-mortem examinations of different wild animals. The dedicated MVS team also looks after the health and management aspects of the captive Elephants of the Similipal Tiger Reserve.

Recommendation 6:

The Department should establish well equipped wildlife rehabilitation-cum-disease surveillance centres, supervised by trained wildlife veterinarians; and introduce technically equipped Mobile Veterinary to attend wildlife emergencies, rescue and rehabilitation and to provide health support. The Department should also initiate a comprehensive immunisation programme for livestock, living in and around PAs, in coordination with the State Animal Husbandry Department.

1.7.6 Habitat Management

The goal of habitat management is to identify disturbed habitats and restore the native flora and fauna to ensure the continued use of the land by both wildlife and humans. An integral part of MPs, habitat restoration includes activities like natural and artificial regeneration of grass, plantation of fodder species, development of water holes, weed removal and regular maintenance of fire lines to control ground fire. All habitat improvement activities were to be carried out in line with the approved MP.

1.7.6.1 Grassland Management

Jaldapara and Gorumara NPs are famous for one-horned rhinos. As per the MPs, a limiting factor for conservation of Rhinos in these two NPs was inadequate grassland habitat for this species. In these two NPs, the grasslands available were 30.55 sq km and 7.5 sq km *i.e.,* 14.11 and 9.38 *per cent* of the total area, respectively. As per the MPs, the two National Parks were required to expand the area under grassland, as well as to maintain the existing grassland. Targets *vis-à-vis* achievements, in Fodder tree and fodder grass *etc*. are detailed in **Table 1.6**.

[66] *Bison-119, Elephant-24, Rhino-13, Leopard-19 and other-61.*

[67] *Bison, Elephant, Rhino and Leopard.*

Table 1.6: Targets *vis-à-vis* achievements in habitat management

Activity	During the period 2017-22					
	Targets (in ha)		Achievement (in ha)		Achievement in percentage	
	Jaldapara	Gorumara	Jaldapara	Gorumara	Jaldapara	Gorumara
Fodder tree and grass plantation	2,500	925	1,735.03	570	69	62
Removal of Invasive species/weed	2,500	750	1,252	325.9	50	43
Over-wood removal	1,000	300	500	183.14	50	61

(Source: Management Plan and information furnished by the concerned divisions)

Thus, it can be seen that the achievements ranged between 43 to 69 *per cent,* against the targets set in the management plans. Joint field inspection (12 and 13 November 2022) of four ranges[68] of Jaldapara showed that grasslands had degraded due to infestation of weeds (like *Lantana camara*) and suppression by the over woods[69]. Therefore, urgent intervention is required, in view of the increase in population of herbivores.

Fig 1.5: Degraded grassland in Malangi 1 & 2 of Jaldapara East Range

(Source: Field visit)

The Department stated (March 2023) that the target could not be achieved due to COVID and lack of funds. However, the fact remains that the targets were not achieved even prior to and also after the COVID period.

1.7.6.2 Canopy opening of teak monoculture followed by creation of grassland

The State Board of Wildlife (SBWL), in its 11th Meeting, directed (13 June 2017) that monoculture of teak in National Parks and Wildlife Sanctuaries in Jalpaiguri, Alipurduar, Kalimpong and Darjeeling, needed to be converted to grassland and managed for increasing prey base and proper herbivore management, as also for creation of open areas, as prescribed under the approved Management Plan/ Tiger Conservation Plan. It was also proposed that the timber will be disposed

68 *Chilapata, Kodalbasti, Jaldapara (East) and Jaldapara (West).*

69 *The areas of grassland, where grass fodder species are in the process of being suppressed by woody species and the stock has become very poor are to be selected for over woods removal.*

as per the existing provisions of the Forest Directorate, GoWB and the fund would be ploughed back for the development of the respective MPs/WLSs and for the benefit of JFMCs.

The Tiger Conservation Plan (TCP) of BTR (in Alipurduar and Jalpaiguri districts) proposed 381.68 ha of canopy opening[70] of teak monoculture, followed by creation of grassland, during the period 2014-15 to 2022-23 and the draft MP of Gorumara NP (Jalpaiguri district) proposed 100 ha during the period 2017-22. MP of Jaldapara (Jalpaiguri district) did not propose any canopy opening.

It was observed that during 2017-22, canopy opening of teak monoculture had not been taken up in all the PAs. The BTR sent (June 2022) a proposal for conversion of monoculture of teak to grasslands, by canopy opening, to the PCCF, Wildlife & CWLW, as per the direction of the SBWL. Canopy opening and grassland creation of 120 ha at South Rajabhatkhawa-2 compartment was proposed to be taken up during the period 2022-23 to 2028-29. However, as of September 2022, the proposal had not been approved. As a result, wildlife habitat could not be improved by creating of grassland in these PAs.

The Department stated that (March 2023) the Hon'ble Supreme Court in its verdict did not allow removal of teak woodland in BTR. However, the fact remains that as per recommendations of the Central Empowered Committee on this matter constituted by the Hon'ble Supreme Court, wherever it is absolutely necessary to remove trees for management purposes, the felled timber should not be taken outside the boundary of the PA or used for any commercial purposes at all. Thus, the Department might undertake canopy opening without removing the felled trees as per direction of Hon'ble Supreme Court.

1.7.6.3 Improvement of degraded land

As per TCP, BTR had 5,550 ha of blank and degraded areas (2016). These degraded areas were to be taken up for plantation, fodder plantations and grasslands. The habitats in these areas were to be restored by plantations of local and native species, palatable grasses and fruit and fodder species.

From the data furnished by the BTR (East and West), it was observed that, during 2017-22, only 892.50 ha[71] of land had been rejuvenated through the plantation of trees and grasslands and soil conservation, for providing adequate cover to wildlife and availability of fodder. Thus, 4,657.50 ha of land remained degraded, as of March 2022. In reply the Department stated (March 2023) that the degraded area would be taken up for afforestation in coming year.

1.7.6.4 Monitoring and Managing Invasive Alien Species

In the PAs, as elsewhere, Invasive Alien Species (IAS)[72] take the form of impacts on ecosystem function, ecosystem structure and at the level of species

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[70] *The term canopy opening refers to identification of dense Teak and felling of the same.*

[71] *BTR (West)-251.50 ha (Misc. plantation), 200 ha (Fodder) and BTR (East)-251 ha (Misc. plantations, 190 ha (Fodder).*

[72] *Invasive Alien Species (IAS), in the context of Convention on Biological Diversity (CBD), for which India is one of the signatories are species whose introduction and/or spread outside their natural past or present distribution threatens biological diversity. IAS occur in all taxonomic groups, including animals, plants, fungi and microorganisms, and can affect all types of ecosystems.*

communities or habitats as well as the level of species. The Convention on Biological Diversity (CBD)[73] recognises the importance of this global issue and calls on contracting parties to: "*prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitat and species*" {Article 8(h)}. As per India's National Biodiversity Action Plan (NBAP) 2019, IAS is the second most common threat, in case of species that have gone completely extinct. The NBAP prescribed identification and treatment of IAS to be made an essential part of management of PAs and wetlands. The National Wildlife Action Plan (NWAP-2017-31) also envisaged making suitable provisions in the management plans, for assessing, monitoring and managing the IAS, by the year 2019.

Fig 1.6: Lantana camara in Jaldapara NP

(Source: Field visit)

Though IAS had become a major threat, Audit observed that departmental research had not been conducted to assess its impact and ensure rapid response to this threat, in the selected PAs. Audit further observed the following:

- As per the current management plan (2018-19 to 2028-29) of Jaldapara NP, weed is a major problem and, except in teak plantations, all other plantations are infested with prolific weed[74] growth, particularly during the rainy season, which may pose a threat to the grassland habitat.
- The TCP of BTR (2016-17 to 2026-27) mentioned the existence of invasive weeds like eupatorium, michenia and lantana.

However, no suitable provisions, for assessing, monitoring and managing the IAS, were envisaged therein.

The Department accepted (March 2023) the audit observation and stated that it took up weed eradication programmes at local levels and also monitors IAS through Satellite Imageries.

Recommendation 7:

The Department should take up habitat management of the protected areas as a priority and control the influence of weeds and invasive species for restoration of disturbed habitats.

73 *The United Nations Convention on Biological Diversity, informally known as the Biodiversity Convention, is a multilateral treaty opened for signature at the Earth Summit in Rio De Janeiro in 1992. It is a key document regarding sustainable development.*

74 *Including Lantana Camara, Eupatorium odoratum, Ageratum conizoides, Clerodendron spp, Cassia tora, Solanum nigrum and Mimosa himalayensis, were found in the NP.*

1.7.7 Management of Financial Resources

The Wildlife Wing has been implementing various Centrally Sponsored Schemes (CSS), as well as State Plan Schemes, for conservation of wildlife and their habitat in the State. Project Tiger[75] (STR & BTR), Project Elephant[76] and Integrated Development of Wildlife Habitats' (IDWH)[77] *etc*. are on-going CSS under which financial assistance is provided to States/ UT Governments for protection and conservation of wildlife and its habitats in PAs, as well as outside PAs, as also for the recovery programmes of critically endangered species. Allotment *vis-à-vis* expenditure incurred under CSS schemes are detailed in **Table 1.7**.

Table 1.7: Amount released *vis-à-vis* expenditure incurred under CSS

(₹ in crore)

Centrally sponsored Scheme							
Year	Amount Released		Expenditure		Un-utilised Amount		Total unutilised fund
	Central Share	State Share	Central Share	State Share	Central Share	State Share	
2017-18	16.78	13.96	14.94	12.65	1.84	1.32	3.16
2018-19	25.33	17.09	22.16	16.75	3.16	0.34	3.50
2019-20	21.15	14.25	17.83	13.26	3.32	0.99	4.31
2020-21	16.68	10.64	15.63	10.20	1.05	0.44	1.49
2021-22	13.37	9.05	3.06	2.16	10.31	6.89	17.20
Total	**93.31**	**64.99**	**73.62**	**55.02**	**19.68**	**9.98**	**29.66**

(Source: Departmental Records)

From the above table, it can be seen that complete funds could not be utilised during 2017-22, leaving unspent balances ranging from ₹ 1.49 to ₹ 17.20 crore.

Besides, the State Government also provides budget funds under State Development Schemes, for Wildlife Management under different heads, *viz.* Forest protection, Nature Conservation, Control of Poaching, Elephant Conservation *etc.,* as detailed in **Table 1.8**.

Table 1.8: Allotment *vis- a-vis* expenditure incurred under State Development Schemes for wild life management

(₹ in crore)

State Development Scheme for Wildlife Management				
Year	Budget Provision	Fund Released by State Govt.	Expenditure incurred	Un-utilised amount
2017-18	24.55	22.08	21.40	0.68
2018-19	27.81	24.34	23.53	0.81
2019-20	28.10	21.63	19.24	2.39
2020-21	30.97	14.25	14.17	0.08
2021-22	41.46	20.21	19.77	0.43
Total	**152.89**	**102.51**	**98.11**	**4.39**

(Source: Departmental Records)

75 *GoI scheme which provides 60 per cent funds for non-recurring expenditures and 50 per cent for recurring expenditures.*

76 *60:40 CSS for conservation of wild Elephant population.*

77 *GoI share: 60; State share: 40.*

From the above table, it was evident that there were unspent balances during 2017-22, ranging from ₹ 0.08 to ₹ 2.39 crore.

1.7.7.1 Fund Management in centrally sponsored schemes

Allotment *vis-à-vis* expenditure related to CSS - Project Tiger', IDWH and Project Elephant during the period from 2017-22 are detailed in **Table 1.9**.

Table 1.9: Utilisation of CSS funds under Project Tiger, IDWH and Project Elephant in the State

(₹ in crore)

Year	Amount sanctioned in APO by GoI			Net amount released by GoI	Unspent balance of previous year adjusted	Total amount released by GoI	Short release by GoI	Amount released by Department		Short release by Department		Amount utilised as per UC		Shortage of expenditure against released fund	Shortage of expenditure against total APO
	Total APO	Central share	State share					Central Share	State Share	Central Share	State Share	Central Share	State Share		
1	2	3	4	5	6	7 = 5+6	8= 3-7	9	10	11= 7-9	12= 4-10	13	14	15= (9+10) – (13+14)	16=2- (13+ 14)
2017-18	25.75	14.79	10.96	11.24	0.86	12.1	2.69	10.97	9.44	1.13	1.52	10.45	8.8	1.16	6.5
2018-19	29.27	16.98	12.29	13.87	1.42	15.29	1.69	13.99	11.00	1.30	1.29	13.79	10.73	0.47	4.75
2019-20	28.69	16.56	12.13	13.51	1.26	14.77	1.79	12.55	9.33	2.22	2.80	12.27	8.73	0.88	7.69
2020-21	18.81	10.80	8.01	5.51	2.14	7.65	3.15	7.02	4.80	0.63	3.21	6.26	4.79	0.77	7.76
2021-22	27.65	16.03	11.62	10.17	1.58	11.75	4.28	8.33	6.16	3.42	5.46	8.26	6.16	0.07	13.23
Total	**130.17**	**75.16**	**55.01**	**54.30**	**7.26**	**61.56**	**13.6**	**52.86**	**40.73**	**8.7**	**14.28**	**51.03**	**39.21**	**3.35**	**39.93**

(Source: Departmental Records)

In this regard, Audit observed that:

- Government of India (GoI) had approved the Annual Plan of Operations (APOs), having a total amount of ₹ 130.17 crore (Central share: ₹ 75.16 crore and State share: ₹ 55.01 crore). However, GoI had released only ₹ 61.56 crore, due to non-receipt of proposals for the second installment from Government of West Bengal (GoWB).
- Out of ₹ 61.56 crore, released by GoI, the Department released ₹ 52.86 crore, *i.e.*, short release of ₹ 8.7 crore. Further, against the mandatory matching share of ₹ 55.01 crore, the Department released ₹ 40.73 crore *i.e.*, short release amounting to ₹ 14.28 crore. Thus, the total short release by Department was ₹ 22.98 crore (₹ 8.7 crore + ₹ 14.28 crore).
- Out of the total funds of ₹ 93.59 crore (₹ 52.86 crore + ₹ 40.73 crore) actually received, the Department had spent ₹ 90.24 crore (₹ 51.03 crore + ₹ 39.21 crore). This resulted in unspent balance of ₹ 3.35 crore which results in curtailment of GoI funds in the subsequent APOs of each year.

It was observed that, due to short release of funds to the PAs, wildlife protection and management works like hiring of boats/launches, purchase of fuel for anti-poaching patrolling duties, maintenance of nylon net fencing for mitigating

Human-Tiger conflict, construction of enclosures for Tiger Augmentation programme *etc.,* hampered as detailed in ***Appendix 1, 2*** and ***3***.

In reply, the Department (March 2023) stated that the delay was due to lengthy procedure of taking approval and admitted that there was scope of simplifying the procedure for expenditure and timely release of funds. It further stated that non-utilisation of fund was also due to late release of fund by GoI and release of funds in number of instalments and linking release of each instalment to utilisation certificates of the former release.

1.7.7.2 Distribution of benefit to the Forest Management Committees

The National Forest Policy of 1988 recognised that Joint Forest Management Committees (JFMCs) are central to forest protection and management. A programme of wildlife conservation and management of PAs in the State, was taken up in 1996[78]. As per the programme, Eco-Development Committees (EDC/JFMCs) were to be formed for protection and management of the PAs. The EDC members were eligible to get 25 *per cent* share of Government receipts, on account of tourist, transport entry, photography, and such other related activities in the PAs.

The function of the JFMC was to ensure protection of forests and wildlife by preventing trespass, encroachment, grazing, fire, poaching, theft *etc*., through the members of the committee, to inform forest personnel about illegal actives in the PAs; actively participate in mitigation of human-wildlife conflict; and to prepare action plans and implement them. The members, on their satisfactory contribution in regard to protection and participation in the management of PAs, for a minimum period of one year, become eligible for 40 *per cent* share of Government receipts on account of tourist and transport entry and photography and such other activities related to Ecotourism in PAs.

The monetary receipts realized from eco-tourism activities in the PAs were deposited in account of the West Bengal State Forest Development Agency (WBSFDA)[79], from which 40 *per cent* amount was released to PA managers, for distribution to different JFMCs, as usufruct benefit. Test-check of four Divisions[80] revealed that there were 123 JFMCs[81], for protection of eight PAs. During 2017-22, ₹ 19.45 crore was realised from eco-tourism activities, in these wildlife areas, and the same was deposited in the account of WBSFDA. Thus, JFMCs were entitled to get benefit of ₹ 7.78 crore[82]. However, Audit observed that:

- For the period 2017-18 and 2018-19, WBSFDA released ₹ 2.46 crore in 2019-20 to three Divisions[83] on the basis of their requisition, which was

[78] *Resolution No. 3841-For/d/11M-795, Dated 26th June, 1996.*

[79] *West Bengal State Forest Development Agency (WBSFDA) is a registered society under 'West Bengal Societies Registration Act,1961' and is under the administrative control of Forest Directorate of West Bengal.*

[80] *Gorumara, Darjeeling, Raiganj & Jaldapara Wildlife Division.*

[81] *31 JFMCs of Darjeeling Wildlife Division, 18 JFMCs of Gorumara Wildlife Division & 71 JFMCs of Jaldapara WL Division and 3 JFMCs of Raiganj Division.*

[82] *40 per cent of 19.45 crore.*

[83] *Gorumara, Darjeeling & Jaldapara Wildlife Division.*

distributed among 114 JFMCs[84] till August 2022. Six JFMCs in Gorumara did not get benefit during the period. The Raiganj Division did not send requisition to WBSFDA, for the distribution of benefit to the three JFMCs, on the ground that JFMCs had remained non-functional, though monetary receipts of ₹ 0.55 crore were realized from eco-tourism activities during 2017-22.

- The Gorumara Division sent requisition of ₹ 1.05 crore to WBSFDA in January 2022 and received the same in February 2022. However, even after a lapse of eight months, the amount of ₹ 1.05 crore had not been distributed (October 2022).

Due to non-distribution/delay in distribution of usufruct benefit, the purpose of engaging fringe people in wildlife protection and management works was frustrated to an extent as revealed from the instances of illegal activities like grazing in the Gorumara NP and Raiganj Wildlife Sanctuary. Joint site visit (November 2022), with Audit and Departmental officers, confirmed that local people were easily entering the unfenced parts of Raiganj WLS, for cattle grazing, picnic and other activities, causing threats to the wildlife of the sanctuary.

The Department in reply (January 2024) stated that delay was mainly due to non-conduct of annual general meetings, non-preparation of accounts *etc*.

Recommendation 8:

The Department should mobilise funds as per approved Annual Plan of Operations for implementation of conservation measures for wildlife. The Department should also utilise the available funds promptly and submit utilisation certificate timely for release of central assistance in time.

1.8 Human-wildlife Conflict

Human-wildlife Conflict (HWC) refers to the negative interaction between humans and wild animals, leading to adverse impacts, such as injury or loss of human lives, crop, livestock and other properties, or even their emotional well-being, and equally negative impacts on wild animals and their habitats.

Conflicts usually arise due to straying of wild animals into habitations, which results into either killing of the wild animals, or death/injury of human beings, loss of crop/cattle/houses, which become acute due to shrinkage of habitats, and loss of fodder/prey base in the forests and increased activities around the forests. Rapid expansion of habitations, agriculture and tea gardens, cut off the corridors needed for migration of wide-ranging animals. Reduction of natural grassland and conversion of natural forests into plantations of commercial species has further restricted the fodder base of the Elephants and other wild animals. Poaching of Deer and other smaller prey-animals had resulted into reduction in prey-base for big cats like Tiger & Leopard in some areas. Conflicts result in harm to both wild animals, as well as humans, which ultimately hampers wildlife conservation measures.

Some of the major species involved in HWCs in the State are the mega herbivores, like Elephant and carnivores like Tigers and Leopards. Apart from these major

[84] *31 JFMCs of Darjeeling Wildlife Division, 12 JFMCs of Gorumara Wildlife Division & 71 JFMCs of Jaldapara Wildlife Division.*

flagship species, even Gaur and Rhino also inflict damages to standing crops, human life and property. The overall number of conflict cases, as well as the compensation paid on account of animal depredation, during 2017-22, are detailed in **Table 1.10**.

Table 1.10: Year-wise compensation paid on account of animal depredation

(₹ in crore)

Year	Persons killed (Nos.)	Persons injured (Nos.)	Persons killed & injured (Nos.)	Compensation paid for human death/ injury (₹)	Livestock killed/ injured (Nos.)	Compensation paid for livestock killed (₹)	Crop damage (ha)	Compensation paid for crop damage (₹)	Hut damage (Nos.)	Compensation paid for hut damage (₹)	Total Compensation paid (₹)
2017-18	73	185	258	1.54	423	0.07	4613	8.53	3516	1.18	11.32
2018-19	104	159	263	2.34	514	0.13	3771	5.10	3531	1.49	9.06
2019-20	134	229	363	3.29	430	0.08	3905	5.45	2928	1.06	9.88
2020-21	122	229	351	3.37	367	0.08	5123	5.31	2812	1.16	9.92
2021-22	117	88	205	2.70	272	0.06	4853	5.03	2321	1.01	8.80
Total	**550**	**890**	**1,440**	**13.24**	**2006**	**0.42**	**22,265**	**29.42**	**15,108**	**5.90**	**48.98**

(Source: Records of CWLW)

1.8.1 Human-Elephant conflict

Elephants stand out as a key conflict species, as they cause high economic losses and are also responsible for a high number of human fatalities. Out of the total compensation of ₹ 48.98 crore paid during 2017-22, ₹ 46.70 crore (96 *per cent*) was on compensation for Human-Elephant Conflict (HEC). The Elephant habitat (forest) is very fragmented, comprising of both forest & agricultural land. Paddy, Maize, Cucumber, Pumpkin, Gourd & Potato, are cultivated extensively, which attracts Elephant.

Elephants depredation on Potato crop

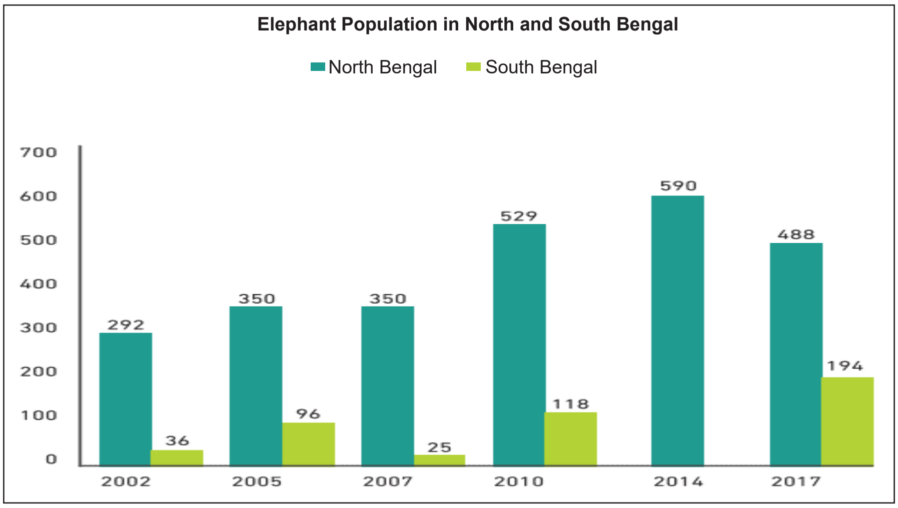
Elephants in a paddy farm

Fig 1.7: Agricultural damages due to Elephant depredation

(Source: JICA Report)

As of April 2022, the total area of Elephant habitat in West Bengal was 6,392.83 sq km, in two landscapes, *viz.* (i) South Bengal (3,740.51 sq km), consisting of ten territorial divisions[85] and (ii) North Bengal (2,652 sq km), consisting of total six wildlife[86] and four territorial divisions[87]. There are two notified Elephant Reserves in the State, *viz.* Eastern Duars Elephant Reserve in North Bengal and Mayurjharna Elephant Reserve (MER), in South West Bengal, covering a total area of 1,391.51 sq km. As per records, the total zone of influence is 3,236 sq km. As per the last Elephant census, 2017, there were 488 and 194 Elephants in North and South Bengal, respectively.

Chart 1.3: Year-wise Elephant population in North and South Bengal (Census not done in 2014 in South Bengal)



(Source: Annual Report of the Wildlife Wing)

During 2017-22, ₹ 6.83 crore, was incurred against the allotment of ₹ 7.23 crore under 'Project Elephant' (a centrally sponsored scheme with 60:40 sharing). In addition, ₹ 41.09 crore was released against the budget provision of ₹ 55.00 crore under the head- Elephant Conservation a State Development Schemes for Wildlife Management Schemes[88]; against which and ₹ 37.96 crore was incurred. Further, ₹ 46.42 crore was incurred by the Department for wildlife depredation from State Forest Development Agency Fund.

The details of human deaths and compensation paid due to HEC, detailed in the **Table 1.11**.

85 *Purulia, Kangsabati (South), Kangsabati (North), Bankura (South), Bankura (North), Panchet, Medinipur, Rupnarayan, Kharagpur and Jhargram.*

86 *BTR (East), BTR (West), Jaldapara, Gorumara, Neora Valley and Mahananda wildlife divisions.*

87 *Kurseong, Kalimpong, Jalpaiguri and Baikunthapur.*

88 *Construction of watch towers, trench/ fencing, hiring of manpower/ wages, purchase of safety equipment, training on tranquilization etc.*

Table 1.11: Year-wise total compensation paid on account of Elephant depredation

(₹ in crore)

Year	Persons killed (Nos.)	Persons injured (Nos.)	Compensation paid for human death/ injury (₹)	Crop damage (ha.)	Compensation paid for crop damage (₹)	Hut damage (Nos.)	Compensation paid for hut damage (₹)	Livestock killed/ injured (Nos.)	Compensation paid for livestock killed (₹)	Total (₹)
2017-18	66	98	1.44	4613	8.53	3516	1.17	0	0.00	11.14
2018-19	80	81	1.94	3771	5.10	3531	1.49	0	0.00	8.53
2019-20	116	80	3.07	3905	5.45	2928	1.06	0	0.00	9.58
2020-21	117	229	3.17	5123	5.31	2812	1.16	367	0.08	9.72
2021-22	77	190	2.96	4058	3.90	2879	0.85	81	0.01	7.72
Total	**456**	**678**	**12.59**	**21,470**	**28.29**	**15,666**	**5.73**	**448**	**0.09**	**46.70**

(Source: Records of CWLW)

The HEC in the State in two different landscape level *viz.* South Bengal and North Bengal are detailed below:

1.8.1.1 Human-Elephant conflict in South Bengal

As per the 2017 Elephant census, there were 194 Elephants (including migratory population) in South Bengal. Around 120-135 Elephants migrate every year in the state of West Bengal, from the Dalma forest of Jharkhand. Normally these Elephants enter West Bengal near the Kankrajhore forest (Jhargram) in the month of July and leave in the month of February/March of the succeeding year. During their prolonged stay, their zone of influence is around 3236 sq km, in the districts of Paschim Medinipur, Purba Medinipur, Bankura and Purulia.

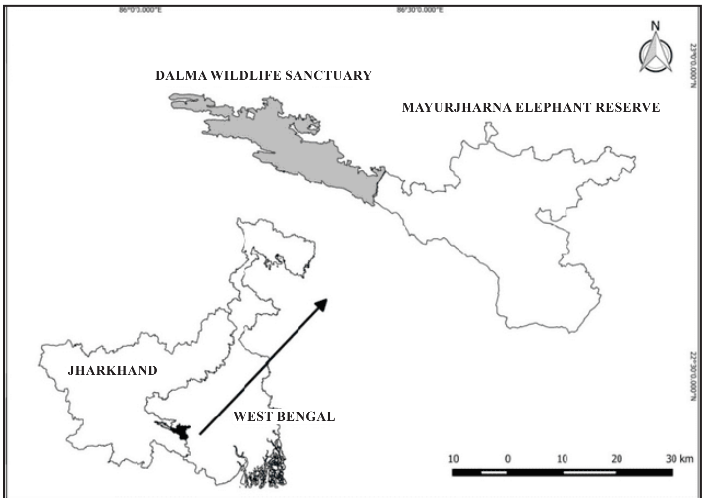


Fig 1.8: Map of Mayurjharna Elephant Reserve and Dalma Wildlife Sanctuary

The Department had taken up various mitigation measures to reduce conflicts *viz.* (i) Elephant Driving Squad, (ii) erection of Elephant Proof Electric Fencing, (iii) excavation of Elephant Proof Trenches (EPT) *etc.* Further, the Management Plan of Mayurjharna Elephant Reserve (MER) envisaged long-term plans, which, *inter alia,* included extensive habitat improvement activities, so as to provide high quality food, water and shelter to the Elephant population of the landscape. However, instances of human death had increased and crop depredation remained high, as ₹ 31 crore was paid as compensation during 2017-22, in South Bengal Districts, which was almost 66 *per cent* of the total compensation of the State on HEC.

Scrutiny of records of the five selected divisions[89] from South Bengal, further revealed the following:

(i) Implementation of mitigation measures

Annual expenditure on Elephant driving and restriction of their movement in non-forest areas was as shown in **Table 1.12**.

Table 1.12: Allotment *vis-à-vis* expenditure in five Forest Division on different mitigation programmes.

(₹ in crore)

Period	Allotment (₹)	Expenditure (₹)	Exp. on Elephant driving (wages of Hulla Party, burnt oil, Hull, fuel *etc.*) (₹)	Expenditure on construction of EPT, erection of EPF including maintenance (₹)	Expenditure on creation of Water Bodies (₹)	Expenditure on Fodder plantation (₹)	Others expenditure (₹)
2017-18	4.49	4.47	2.00	1.61	0.20	0.00	0.65
2018-19	3.90	3.90	2.12	0.78	0.16	0.00	0.83
2019-20	3.61	3.61	2.15	0.46	0.09	0.00	0.91
2020-21	1.58	1.58	1.16	0.19	0.00	0.00	0.23
2021-22	0.86	0.75	0.31	0.20	0.00	0.00	0.24
Total	**14.44**	**14.31**	**7.74**	**3.24**	**0.45**	**0.00**	**2.86**

(Source: Divisional Records)

From the above, it can be seen that the division had spent ₹ 7.74 crore (54 *per cent* of the total expenditure of Elephant conservation) for Elephant driving and ₹ 3.24 crore on Elephant movement restriction but had spent negligible funds on long-term management *i.e.* development of Elephant habitats, by means of fodder plantation. The Department stated (January 2024) that an assessment was made recently wherein 1,831.66 ha and 2507.90 ha areas were found to have been planted in the year 2022-23 and 2023-24 respectively.

(ii) Mitigation of conflict through Hulla driving

Records showed that, during the crop-raiding season, every division of the Forest Department had a squad for responding to Elephant movement and helping villagers in chasing away the animals from the crop fields. The members of the squad used powerful spotlights, sirens, crackers, Hulla[90], to chase the wild Elephants from the area. The squads provided temporary relief, since Elephants come back and, therefore, this could not serve as a sound conflict mitigation policy. Further, such intensive drives forced the Elephants to move

89 *Three divisions – Jhargram, Bankura (South) and Kangsabati (South) of MER and two most affected divisions -Bankura (North) & Medinipur Forest Division in the zone of influence selected in pilot study.*

90 *A long stick with burning materials at one end.*

continuously without much rest and food, prompting them to take more risks while depredating the cropland. This risk-taking attitude had led to increased interactions with humans and could increase the conflict rate.

Fig 1.9: Elephant driving force (Hulla party)

(Source: HEAL)

(iii) Management of the Mayurjharna Elephant Reserve (MER)

With the objective of providing a safe habitat for the Elephant population of South-West Bengal and mitigating Human-Elephant conflict, the Mayurjharna Elephant Reserve (MER) was created (October 2002), comprising of 414 sq km in the Jhargram, Bankura and Purulia Districts.

The main objectives of the first approved Management Plan (MP) (2015) of MER were (1) Confinement of Elephant herds within MER, by scientific and intensive habitat improvement so as to provide high quality food, water and shelter, to the Elephant population of the landscape for the maximum period of the year (2) Upliftment of the local fringe population, through sustainable, scientific and need based eco-development activities, in and around MER and (3) Mitigation of man-Elephant conflict. The MP also envisaged protection and management of corridors, required to ensure free movement of Elephants within the MER and optimization of the carrying capacity of MER, by enhancing the fodder availability of Elephants.

Further, as per the report[91] of the Biodiversity Conservation Project, GoWB, restoration of degraded habitat and planting more fodder tree species, might help in improving the habitat. The replacement of species[92] was expected to help in enriching the forests, in terms of food availability for Elephants. The presence of an adequate amount of palatable fodder in the forests might make the Elephants spend more time within these forests. Thus, eventually, interactions and conflicts in the landscape could be reduced.

It was observed from the said report that, currently, small herds or lone individual animals, were spending some time in the reserve, but they were using MER as a corridor to reach West Medinipur. As per the report, the estimated Elephant density was 0.0029 Elephants/ km^2 in MER, as compared to that of 0.52 Elephant/ km^2, in other parts of the District. The erstwhile entry point, at

[91] *'Ecology of Elephant in South West Bengal including population dynamics, migratory pattern, feeding habits and human-Elephant conflict (June 2019)'*

[92] *Like Shorea robusta and Eucalyptus tereticornis with fodder species like Lannea grandis, Aegle marmelos, Madhuca longifoila, Pterocarpus marsupium, and Buchanania cochinchinensis.*

Kakrajhore, within the MER, along the Bengal-Jharkhand border, had not been used by the migratory Elephant herd of Dalma, in last three years. Instead, the Gidhni and Parihati range, outside MER, were being used as a new entry points.

Joint site inspection (21 and 26 July 2022) of three ranges[93] within the MER, showed extensive cultivation of Babui grass in the forest areas, which is not a fodder of Elephant and is responsible for degradation of the Mayurjharna ER. On the contrary, the joint site inspection (28 July 2022) of the new entry points where good numbers (average 60-100) of Elephants had stayed throughout the year, in the last three years and had a potential natural habitat for the Elephants, revealed the following:

- Activity for habitat improvement, like creation of waterbodies, salt-pits or fodder/ fruit plantations, had not been taken up.
- Elephant Proof Trenches (EPTs), in 7.2 km length constructed during 2018-19 in these two Ranges, required immediate maintenance, as these trenches had gradually turned shallow for the Elephants to cross over easily.
- Only one watch tower[94] was available at this new entry point along the Bengal-Jharkhand border. More watchtowers with adequate infrastructure for surveillance needed to be constructed, at various strategic locations.

This indicated that priority had been accorded to short-term measures, rather than to long-term measures for improving the habitat, so that Elephant remains within the reserve area. Thus, the main objective of creation of the reserve, *i.e.* to confine Elephant herds within MER, by scientific and intensive habitat improvement for the maximum period of the year, was largely not achieved.

In reply, the Department accepted (March 2023) the facts and stated that more expenditure was incurred on elephant driving rather than on habitat management because protecting life and property took precedence over strategic long term interventions.

(iv) Project for Management of Human-Elephant conflict in South Bengal

The Department of Forest, GoWB, accorded (September 2019) administrative approval for management of Human-Elephant conflict and minimizing loss of human life and property in South Bengal, at an expenditure of ₹ 32.74 crore. The project, *inter alia,* included (i) renovation of existing 30 km of Elephant Proof Trench (EPT), over the most vulnerable stretches, (ii) Construction of power fence along the existing EPT, (iii) Making fence with spinous plants along the existing EPT and (iv) approach road, besides the existing EPT. Against this administrative approval, financial sanction of ₹ 40.50 lakh only had been received, as of July 2022. Subsequently, as per the direction of CWLW, WB, a revised proposal was submitted by DFO, Jhargram Division in December 2020. The scope of work included (i) digging of EPT for the balance 60 km of border, (ii) construction of power fence for the entire 123 km and (iii) boulder pitching of 25.97 km for protection of the EPT at vulnerable locations, at a total estimated cost of ₹ 32.33 crore.

However, neither had revised proposal been approved by the Department, nor had

93 *Burdwan-I, Belpahari and Bhulabedha.*

94 *Chandua Jonka mouza of Amtalia Beat under Gidhni Range.*

further funds been released except ₹ 40.50 lakh, which was utilized for construction of two watch towers[95] and creation of 2.23 km new EPT during 2019-20.

(v) Setting up of Wildlife division (South) for management of the Mayurjharna Elephant Reserve

PCCF, Wildlife & CWLW, GoWB, submitted a proposal to create a Wildlife (South) Division, primarily for better management of the MER, in order to (i) co-ordinate human-Elephant mitigation measures, (ii) enhance co-ordinated efforts to fight the menace of ritualistic tribal hunting and (iii) better conservation of endangered fauna of Southern West Bengal *e.g.,* Hyena, Bengal Fox and Wolves.

Accordingly, the Department of Forest, GoWB, issued order (February 2016) for creation of a new division in the name of Wildlife (South) Division, with headquarters at Jhargram. The division was to be operational with effect from the financial year 2017-18. However, as of May 2022, the division was not operational, the reasons of which were not available on record.

In reply Department stated (March 2023) that as Elephants hardly stay in MER, setting of a new wildlife division is not prudent. The reply may be seen in the light of the fact that the zone of influence is still under the districts which are part of MER. Further, the role of the proposed wildlife division was to enhance coordinated efforts among forest division against human-elephant conflict, to mitigate ritualistic hunting and to conserve the endangered wildlife of South Bengal. The Department needs to finalise strategy as to how these will be taken up in absence of a field office in the area. The Department further stated that habitat improvement measures were being planned in some selected pockets to hold the elephants for longer period of time.

1.8.1.2 Elephant conflict in North Bengal

The Elephants of North Bengal represent the western most extension of the North Eastern population of Asian Elephants in India. The Elephant range is bounded by Nepal to the west, Bhutan to the north, Assam to the east and Bangladesh to the south. The region has about 488 Elephants, according to the census of 2017. The migration path of the Elephant is from the Assam border to the Nepal border in North Bengal, covering nine forest divisions[96]. About 34 *per cent* of the Elephant range in North Bengal is under forest cover, 22 *per cent* under tea plantation, 17 *per cent* under agriculture and 27 *per cent* under habitation and development activities. The average human density in the Duars and the Terai region was 679 per sq km. Although the region supports less than two *per cent* of the total Elephant population of India, it accounts for almost 12 *per cent* of all human deaths caused by Elephants in the country. Cases of human injury or death, crop depredation and property damage, are on the increase.

From the records furnished by the office of the Chief Wildlife Warden (CWLW), it was seen that, during the period 2017-22, 259 people were killed by Elephants and ₹ 16.08 crore had been paid for compensation[97] in the North Bengal districts.

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[95] *At Dhangikusum of Odalchua beat under Bhulabedha range and at mouza Chandra –Jonka of Amtolia beat under Gidhni range.*

[96] *BTR (East), BTR (West), Jaldapara Wildlife Division, Jalpaiguri, Gorumara Wildlife Division, Baikunthapur Division, Kurseong, Kalimpong and Darjeeling Wildlife Division.*

[97] *Instances of crop, cattle and human depredations, human injuries and loss of property.*

The Eastern Duars Elephant Reserve (EDER) was created (August 2002), comprising of three districts, *i.e.* Darjeeling, Jalpaiguri & Alipurduar. The total geographical area of the EDER is 484 sq km. However, a separate management plan had not been prepared for this reserve.

Restoration of Wildlife Corridors

A Wildlife Corridor is a narrow strip of land with native vegetation that connects two or more larger areas of similar habitats or forest fragments and is critical for the maintenance of ecological process including migration, colonisation and interbreeding of plants and animal communities, thus enhancing the chances of survival. Fragmentation of forests, due to rapid human development and encroachment along the paths connecting the two forest patches, affected the movement of large mammals, like Elephants and Tigers. A total of 88 wildlife (Elephant) corridors were identified by the Wildlife Trust of India which has been brought out in its report "The Right of Passage" (2005) for conservation of the Elephants, of which 14 corridors were identified in North Bengal, as shown in **Fig 1.10.**

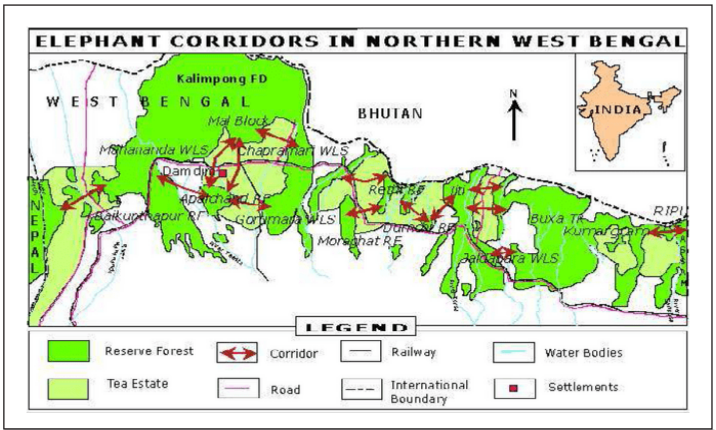

Fig 1.10: Map of Elephant corridors in northern West Bengal

Among these, one is considered as high ecological priority[98] and 13 as medium. In terms of conservation feasibility[99], nine were of Medium and five were Low. The status, ecological priority and conservation feasibility of these corridors, have been brought out in ***Appendix-4.***

The CF & FD, BTR and CCF Wildlife North, proposed (September 2022) securing of seven out of these 14 corridors. The proposals stated that economic loss was being caused in those areas, due to the damage done by migrating Elephants through these corridors. During 2017-22, the total number of cases of human death was 148 and the compensation payment was ₹ 12.90 crore in this seven corridors.

The report[100] of the Elephant Task Force, MoEF&CC (31 August 2010) recommended that all Elephant corridors listed should be notified as ecologically sensitive areas, by the respective State Governments.

In reply Department stated (March 2023) that one[101] out of seven identified important corridors had been planned to developed as a pilot for declaring as community reserve.

98 *Elephant corridors are categoried as High, Medium and Low on the basis of the regularity of elephant movement.*

99 *Corridors are graded on conservation feasibility as high, low and medium taking into factors such as land ownership, number of human settlements, fragmentation of the corridors etc.*

100 *Gajah, securing the future for Elephants in India.*

101 *Titi Buxa corridor.*

Recommendation 9:

The Department should develop a proper Human-Elephant Conflict strategy, along with detailed action plan for its strict enforcement, in consonance with the National Human-Wildlife Conflict Mitigation Strategy and Action Plan (HWC-NAP) 2021-26.

1.8.2 Ex-gratia payment to the victims

Human-Wildlife Conflict brings many losses, especially killing of humans, which has the effect of making communities less tolerant to wildlife. However, prompt delivery of assistance may help mitigate local hostility towards wildlife to some extent. The NWAP 2017-31, made State Forest departments responsible for streamlining the official procedure for payment of *ex-gratia* relief, to the victims of HWC, to ensure that the relief was disbursed immediately, with minimal paperwork and hindrances.

As per notification[102], 75 *per cent* of the total *ex-gratia* grant[103] was to be paid on spot, after obtaining a written petition from legal heirs/next of kin of the person killed by wildlife. The remaining 25 *per cent*, was to be paid, after obtaining (i) cause of death-report of the Police/Range Officer and (ii) Medical certificate, issued by the Doctor of a Government Health Centre. In cases of exigency, the DFO could make full payment at a time, after observing the formalities mentioned above.

Scrutiny of records of five wildlife divisions[104] revealed that 203 humans had died in HWC, during 2017-22. It was observed that the compensation amount was not paid in a timely manner to the dependents of the deceased persons. Only ₹ 20,000 to ₹ 30,000 was paid to the legal heirs of deceased persons on the spot, in most cases and the balance amount of compensation was paid belatedly. It was observed that, out of the total 203 death cases, only in 59 cases (29 *per cent*) had *ex-gratia* been disbursed in a timely manner. In the remaining 144 cases, 13 victims had not been received compensation, even after a lapse of more than two years. In regard to 17 cases, compensation had not been paid, as death had occurred within the restricted area and, in the balance 127 cases, there were delays in payment ranging from one month to more than two years, as detailed below:

Table 1.13: Delays in payment of compensation

Period of delay	No. of cases
01 to 03 months	23
03 to 06 months	24
06 to 12 months	35
01 year to 02 years	18
More than two years	14
Did not get any benefit	13
Total	**127**
Could not be paid as the death occurred within forest area	17

(Source: Divisional Records)

[102] *No. 1547, dated 13.06.2016 Department of Forest, Govt. of West Bengal.*

[103] *April 2017- October 2018- ₹ 2.5 lakh, November 2018- February 2021-₹ 4.0 lakh and March 2021 till date- ₹ 5.0 lakh.*

[104] *BTR (West), BTR (East), Jaldapara, Gorumara and Darjeeling.*

Such delayed and/or non-payment cases would lead to growing antipathy among the local communities towards wildlife conservation, resulting in retaliatory killings or injuries to animals.

In reply, the Government stated (March 2023) that from January 2023, 100 *per cent* payment would be made for human deaths due to Elephants attack within 24 hours and pending cases of *ex-gratia* amount had since been disbursed. The Department further stated (January 2024) that the GoWB has recently (May 2023), launched a programme of giving employment as Forest Volunteer to the next of kin of persons killed by wildlife.

Box 5: Good Practice

"Anukampa" is a user-friendly software developed and launched by the Government of Odisha, in association with its Technical Partner, *i.e.* the Odisha Space Application Centre (ORSAC), Bhubaneswar. The portal is being used for claiming compassionate payment towards human kill, human injury, cattle kills, crop damage or house damage by Wild Animals. Accepting the Audit suggestion, the Department stated (January 2024) that a similar application was being developed in the State.

1.8.3 Human-Tiger Conflict in STR

Sundarban is the largest mangrove in the world and the only mangrove forest where Tigers are found. Tigers of Sundarban are known for their, man eating behavior and peculiar habit of straying into the human habitation, generally due to the fact that forest and village are separated only by a small river channel and the people of the vicinity are dependent on the forest for their livelihood.

Nylon-net fencing has been found to play an important role in preventing the straying out of Tigers into villages. 106 km of nylon-net fencing has been erected along the vulnerable areas, with the TR. A protocol for maintenance of the nylon-net fencing has also been designed, with the aim of carrying out thorough checking and proper maintenance. The Protocol includes involvement of local Stakeholders in Forest Protection Committees or Eco-Development Committees (FPCs/EDCs) as members, along with forest staff. As a result, Tiger straying outside the core-area had been reduced considerably and conflict outside the reserved area had also reduced. During 2017-22 there were only 14 Tiger straying cases in Sundarban, as compared to 61 during 2010-17.

However, considerable cases of deaths still occur due to illegal entries into the core area. During the period 2017-22, there were 68 human deaths due to Tiger attacks.

Fishermen enter into the STR area for fishing, after getting permits from the office of Sundarbans Tiger Reserve. These permits issued against registered Boat License Certificates (BLCs) are given for a specific time and area. In case of Tiger accidents in the buffer area, compensation for deaths or injuries by Tiger attack is being provided in case the person has a legal BLC, with proper permits for fishing activity. In case the person has entered without the legal permission, the claim for compensation is rejected.

Fig. 1.11: Map of fringe villages of STR and Nylon-net fencing at Sundarban

(Source: Department)

Audit observed that, during the period 2017-20, the maximum incidents (29 out of 34 cases) of human death by Tiger attack, had taken place in the Pirkhali and Panchamukhani areas whereas, during the period 2020-22, the maximum incidents (27 out of 34 cases) had taken place in the Jhila area. Despite such incidences in these two areas, STR management had not initiated studies or surveys to find out reasons for conflict in these areas.

During 2017-22, only 12 dependent families' members of Tiger victims had received compensation, out of a total number of 68 death cases. There are no villages inside the boundary of the Tiger reserve and the core area is restricted to all kinds of anthropogenic activities. However, sometimes Fishermen, who get permits for fishing in specified areas, enter the restricted area illegally, for fishing and crab collection along the narrow creeks, where incidents of Tiger attacks had been reported. As a result, Tiger victims did not get compensation, as the place of incident was in restricted area, as per TCP. This, besides the wrong actions on part of the Fishermen also indicated poor patrolling and monitoring on the part of the STR management, in restricting movement into the restricted areas.

The Department attributed (March 2023) deficiency of patrolling staff to such illegal entries. It also stated that proposal for construction of barriers on creeks was under consideration.

Recommendation 10:

All entry points of the Sundarban Forest need to be placed under proper surveillance, in conjunction with continuous awareness generation programmes, for educating people about the dangers of illegal entry into the core area of the reserve.

1.8.4. Impact of Linear Developments in wildlife protection

One of the major risk in wildlife protection is linear developments, *viz.* railways, power line and roads within the PAs. As per minutes of the 47th meeting of the Standing Committee for the National Board for Wildlife, held on 25 January 2018, high speed and multiple lane roads, wide canals and railway lines not only cause deaths of animals but also block wildlife movement completely, thereby fragmenting the habitat. In this background, every linear project proposal is to contain a one-page passage plan, with location of wildlife passages on map, duly examined on the ground and approved by the State Chief Wildlife Warden. The Committee also recommended that, in future, user agencies involved in linear infrastructure development should take into consideration the advisory made in the guidelines of the Wildlife Institute of India, while designing the linear infrastructure inside Protected Areas (PAs), notified ESZ areas around PAs.

1.8.4.1 Impact of Railway lines through the Protected Area

In the North Bengal landscape, 74 km of railway track, from east to west, passes through the Mahananda WLS, the Chapramari WLS, Jaldapara National Park, Gorumara NP and Buxa Tiger Reserve. In the South Bengal vulnerability to wildlife, especially Elephants, has taken place on two railway tracks of South Eastern Railways *viz*. Khargapur-Tatanagar and Khargapur – Adra. The vulnerability section in the Khargapur-Tatanagar segment is between Manikpara to Gidhni, under the Jhargram Forest Division.

Fig 1.12: Death of Elephant due to accident on railway track

(Source: Department)

The Hon'ble Supreme Court of India passed (2 September 2014) orders, giving directions to the Indian Railways and the Forest Department, GoWB, and others, to take suitable measures[105] in this regard. Since then, Railway authorities had undertaken measures for compliance to the directives, like speed restriction, route diversion, constructing ramps, vegetation clearance for better visibility *etc*.

The number of cases had reduced to some extent, as 14 Elephant deaths in train accidents occurred during 2017-22, as compared to 51 deaths during 2010-11 to 2016-17. However, it was observed that, out of the 14 cases, eight had taken place in the jurisdiction of the Gorumara NP and Jhargram division only. This indicate that certain portions still remained vulnerable.

In reply, the Government stated (March 2023) that use of technology for constant vigil and provision of under passes or over passes would be considered to reduce such accidents.

1.8.4.2 Electrocution due to power lines

The power lines in the North Bengal had caused the deaths of 27 Elephants, in a period of four years, from 2017-22. The primary reason for the electrocution of Elephants was illegal hooking and sagging of high-voltage power lines.

[105] *Construction of trench, underpass at the identified corridor, restriction of speed, use of technology like radar system, satellite space navigation system and modern wireless animal tracking system.*

A joint meeting, between the Forest Department & Power Department, regarding these unnatural deaths of wildlife in North Bengal, due to electrocution, was held in November 2020 and the decisions of the meeting *inter alia* included the following:

Fig 1.13: Death of Elephants due to electrocution

(Source: HEAL)

- Constitution of an anti-electrocution cell at the earliest, consisting of local officials of the Forest Directorate, West Bengal State Electricity Distribution Company Limited (WBSEDCL), District Administration, Panchayats and Police, to strategise various preventive and mitigation measures, to avoid accidents and monitor ways to prevent the existence of illegal electric fences and also identify sagging of high-tension lines which required to be raised.
- WBSEDCL was to provide insulated aerial bunched cables on LT lines, along the identified corridors, by 30 April 2021.
- WBSEDCL was to complete the GIS mapping of LT lines, with immediate effect.

Audit observed, in this regard, that:

- Anti-electrocution cells had been formed in all the selected divisions. However, illegal power fencing, sagging of power lines still continued and, during 2021-22, four Elephants had died due to these.
- In Gorumara Wildlife Division, 408.91 km was mapped for insulated Cable/ Arial bunch cables on LT lines in sensitive Elephant corridors/zones. However, only 59.08 km of the work had been executed till July 2022. Post November 2020, one Elephant had died due to electrocution in the area.
- In BTR, primary survey had been done (November 2021) for the areas where insulated aerial bunch cables needed to be installed. However, installation had not been done as of November 2022. Further, GIS mapping of LT lines had also not been completed, as of December 2022.
- In the Darjeeling Wildlife Division, 79.80 km of electric line passes through the PAs. However, the Division was yet to undertake comprehensive survey, along with Power Department, in tea gardens, to identify the sagging of electric lines within the wildlife corridor. Out of total 12 working Ranges, only one Range (Squad-1, Sukna) had mapped two locations and identified total length of 470 meters as comprising sensitive areas of the Elephant corridor for provision of insulated cable.
- In South Bengal, Audit noticed that post November 2020, in the Bankura North Division three death cases were due to electrocution from LT power lines. A joint survey with the electricity authorities had been conducted, in regard to insulating the LT power lines, but the work had not been completed.

In reply, the Government stated (March 2023) that the work ariel bunch cabling would be expedited in consultation with WBSEDCL. It further stated that the issue of electric lines through Mahananda, WLS would be reviewed.

1.8.4.3 Road kills

The Expert Committee Report on unnatural deaths of wild life due to human activities and linear developments 2020 recommended mitigation measures, like speed restrictions, night movement restrictions, setting up of check posts, construction of underpasses/ overpasses for safe passage of wildlife in a phased manner *etc.*

National Highway-31C is the main highway which cuts across these forests of Buxa Tiger Reserve, Jaldapara NP, Gorumara NP and Mahananda WLS. During the Audit period, 62 cases (Leopard-16, Gour-4, Rhino-2, Elephant-2 and others-38 like Deer, Sambar Pythons, Monkey, Jackal *etc.*) of wildlife deaths had been recorded during 2017-22.

Audit observed that no such measures as recommended in the Report had been taken up.

Instances of such deaths of 13 wild animals (under Schedule-I, II & III) were reported by DFO/ Gorumara Wildlife Division in one year (October 2020 to September 2021). In spite of requests to the National Highway Authority, by the concerned DFO (September 2017 and September 2021), speed breakers had not been installed in those vulnerable locations, to save wild animals from road accidents. In respect of other PAs (Jaldapara and BTR), communications with NHAI, regarding steps taken to mitigate road kill, were not found available on records.

In reply, Government stated (March 2023) that steps like movable barriers near entry points on highways, signage along the stretches are being taken up. Further, it stated that animal underpasses/ overpasses were being taken up in Kharagpur-Chichira Highway and Kumari-Gairibas Road *etc*. However, the fact remains that killings of the wild animals in road accident is a grave issue and requires proactive action on part of the Department.

Box 6: Good Practice

Samruddhi Mahamarg (expressway) between Nagpur and Mumbai have nine green bridges (overpasses) and 17 underpasses for movement of wild animals

Recommendation 11:

The Department should take steps to ensure night ban of traffic inside the Protected Areas, along with construction of underpass and overpass for wildlife, after identifying animal paths in Protected Areas.

1.8.5 Commercial activities in and around the Protected Areas and Eco-tourism

As per the National Wildlife Action Plan (NWAP) 2017-31, eco-friendly and regulated wildlife based tourism (Eco-tourism) has the potential to be a vital conservation tool, as it helps to win public support for wildlife conservation. However, in recent years mushrooming of eco-tourism facilities has led to overuse, disturbance and serious management problems in a number of PAs.

1.8.5.1 Eco-tourism in Buxa Tiger Reserve

NTCA, *vide* a guideline[106] prescribed adoption of low-impact wildlife tourism, which protects the ecological integrity of forests and wildlife areas, and secures wildlife values of the destinations and their surrounding areas. The guidelines (*vide* Para 2.2.9) recommended permitting a maximum of 20 *per cent* of the core or critical Tiger habitat usage for regulated, low-impact tourist visitation. Such areas were to be demarcated as tourism zones and be strict adherence to the site specific carrying capacity was required. The Guidelines further stipulated that no new tourist infrastructure should be set up within the core or critical Tiger habitat of Tiger reserves, in violation of the provisions of the Wild Life (Protection) Act, 1972, and the directives of the Honourable Supreme Court. The Chief Wildlife Warden of the State was to ensure that each Tiger Reserve prepares a tourism plan, as part of the Tiger Conservation Plan *vis-à-vis* the Technical Guidelines of the National Tiger Conservation Authority. This site-specific tourism plan, forming part of the Tiger Conservation Plan, was be approved as per the provisions of the Wild Life (Protection) Act, 1972.

The said guidelines (*vide* Para 2.2.13) further stipulated that the permanent tourist facilities, located inside the core or critical Tiger habitat, which were being used for wildlife tourism, would be phased out on a time-frame decided by the Local Advisory Committee (LAC)[107]. There were to be no privately run facilities, such as catering, *etc*., inside the core or critical Tiger habitat, where night stay was permitted. Such existing facilities if any, were to be run by the Tiger Conservation Foundations. Further, as per the proviso under Section 33 (a) of the Wild Life (Protection) Act, 1972, no construction of commercial tourist lodges, hotels, zoos and safari parks can be undertaken inside a Sanctuary, except with the prior approval of the National Board. NTCA reiterated (18 July 2018) the above prescriptions regarding phasing out of tourism (Night

[106] *Guidelines for Tourism in and around Tiger Reserves vide F. No. 15-31/2012-NTCA dated 15 October 2012.*

[107] *A committee to be constituted for each Tiger reserve by the State Government consisting of Divisional Commissioner or an officer of equivalent rank to be nominated by the State Government as chairperson and other members viz. (a) Member/s of the State Legislature representing the area comprising of the concerned Tiger reserve; (b) District Collector/s; (c) Tiger Reserve Field Director (Member Secretary) Local; (d) Territorial Divisional Forests Officers; (e) Honorary Wildlife Warden (if present) and (f) Official of State Tourism Department etc.*

Stay) from the Core Areas of the Tiger Reserves. Again, in October 2019, NTCA requested to Chief Wild Life Wardens of all States having Tiger Reserves, to furnish the details of permanent tourism facilities (Night Stay), available inside the Core Areas of Tiger Reserves, the extent of phasing out done so far, after the aforesaid guidelines of 2012, and the timeline in which these permanent tourism facilities would be phased out completely from the Tiger Reserves. In this regard, Audit observed the following:

Fig 1.14: Illegal establishments within the core area of the Buxa Tiger Reserve

(Source: Field Visit)

- The objectives of promoting and providing livelihood opportunities to local people and reducing their dependence on the fragile ecosystem were prioritized in the Eco Tourism Plan of the TCP of BTR (2016-27). It identified an Eco-tourism zone of total area of 7,749.65 ha in the core area, which was around 19.80 *per cent* of the total core area. The TCP also envisaged Jayanti and Buxaduar, both in core area, to be developed as satellite tourist spots. This was contrary to the guidelines of the phasing out of tourism (Night Stay) from Core Areas of Tiger Reserves.

- Local Advisory Committee (LAC) which was to be constituted for each Tiger reserve, by the State Government was not formed, as of September 2022.

- As of August 2017, there were 69 establishments under private ownership and 20[108] under the management of the GoWB, in the core area of BTR. National Green Tribunal (NGT), *vide* its order dated 31 August 2017, had directed closing down of all illegal establishments which have been raised within the core area of the Buxa Tiger Reserve. However, the Department did not initiate action other than issuing (September 2017) of closure notice to the unauthorized establishment. Audit observed that instead of closing down the hotels/resorts and illegal establishment, more such constructions have been allowed. Consequently, NGT directed (May 2022) to close all the illegal establishments within two months. Further, tourist camping facilities, which were run by the Tourist Department inside the core areas, were directed to be handed over to the Forest Department, which would be used as an Interpretation-cum-Training Center for nature conservation and management. In compliance to the NGT order, all the commercial establishments, running hotels/restaurants, were served notices again in July 2022 for compliance.

[108] *Establishment under Public Works, Irrigation & Waterways and Tourism Departments.*

However, different hotel/ homestay were still being run (***Appendix-5***). Further, tourist camping facilities, which were being run by the Tourist Department remained unutilised as the Department was yet to evolve a plan to utilize such camping infrastructure, as per the directions of the NGT.

The Government stated (March 2023) that order of Hon'ble NGT had been implemented by closing down eco-tourism facilities at BTR, however, Hon'ble Kolkata High Court stayed (July 2022) the operation of the order of NGT.

1.8.5.2 Operation of tourist vehicles in Tiger Reserves

As per the guidelines of NTCA, the number of tourists needs to be worked out, on basis of the carrying capacity of the area. The Effective Permissible Carrying Capacity (ECC) is the maximum number of visitors that a site can sustain, given the Management Capacity (MC) available.

(i) Tourist boats allowed in STR

The Tiger Conservation Plan (2017-2027) of STR envisaged the carrying capacity, in terms of watercraft per day[109]. It was observed that the carrying capacity in terms of the number of tourists, had not been estimated as was done in the previous TCP (2012-17) *i.e.* 650 persons per day. It was, however, observed that, as per the NTCA guidelines of 2012, the minimum gap between two consecutive vehicles, carrying six tourists per vehicle, was required to be maintained at 500 m, whereas, in the TCP (2017-2027) of STR, the minimum gap was considered as 200 m. As a result, the carrying capacity, in terms of vehicles, was inflated to 212. Had the NTCA guidelines been followed, the carrying capacity of vehicles would have been 85, *i.e.* 510 tourists[110] to be allowed per day, as detailed in ***Appendix-6***. The number of tourists visiting the Reserve, during 2017-22, is detailed in **Table 1.14**.

Table 1.14: Number of tourists allowed into the Reserve

Period	No. of tourists	Tourist per day during peak season (December to February)	Admissible as per NTCA Guidelines	Excess allowed (*percentage*)
2017-18	2,29,051	1,781	510	1,271 (249)
2018-19	2,05,581	1,584	510	1,074 (211)
2019-20	2,12,782	1,632	510	1,122 (220)
2020-21	50,158	672	510	162 (32)
2021-22	1,22,039	879	510	369 (72)

(Source: Divisional Records)

Thus, it can be seen that, during the peak seasons (December to February) of financial years 2017-18 to 2019-20, excess number of tourists had been allowed with the excess ranging between 211 to 249 *per cent*. In financial years 2020-21 and 2021-22, during the pandemic, the excess numbers came down.

In reply, the Government stated (March 2023) that animals stay at islands, hence, there was a physical separation between tourists and wild life and carrying capacity had been calculated on the basis of number of watercrafts allowed. The

[109] *212 (two cylinder) boats equivalent to 151 (four cylinder) boats equivalent to 118 (six cylinder) boats and equivalent to 88 launches per day.*

[110] *85 × 6*

reply may be seen in view of the fact that the Sundarbans is a unique ecosystem where the habitats of the animals comprise of both land and water. Further, the calculation of carrying capacity in the TCP was not in consonance with the NTCA Guidelines which stipulated restriction on the number of vehicles based on their seating capacity.

(ii) Jeep Safari in BTR

In BTR, there are three safari routes, totalling 69 km, in the core area and one safari route of 25 km, in the buffer zone. The Effective Permissible Carrying Capacity (ECC)[111] of the BTR, as envisaged in the Tiger Conservation Plan (2016-27), was 19 vehicles per day. Therefore, considering a maximum six persons allowed per vehicle, the total tourists per day would be 114. As the forest is open for nine months, the maximum tourist allowed would have been 30,780 (114 x 30 x 9). The number of tourist vehicles allowed into the Reserve, during 2017-22, is detailed in **Table 1.15**.

Table 1.15: Number of tourist vehicles allowed into the Reserve

BTR Year	Number of Tourist	Tourist per day	Admissible as per TCP	Excess allowed (percentage)
2017-18	64,376	238	114	124 (109)
2018-19	1,62,638	602	114	488 (428)
2019-20	1,32,400	490	114	376 (330)
2020-21	18,694	69	114	NA (due to COVID)
2021-22	56,117	208	114	94 (82)

(Source: Divisional Records)

It can be seen that, during the period 2017-18 to 2019-20 and in 2021-22, the number of tourists allowed in the park was in excess (ranging between 82 and 428 *per cent*), as compared to the prescribed number. In the year 2020-21, it was less due to COVID pandemic.

In reply, the Government stated (March 2023) that the carrying capacity as per the TCP was in terms of jeep safari and not in terms of tourists/visitors/fringe villagers. However, the fact remains that the TCP should consider all types of entries in the Tiger Reserve.

Recommendation 12:

The Department should take concrete steps to enforce closure of Commercial activities in the PAs and regulate the tourists flow, as per prescribed procedure. A system of Online booking for safaris should be introduced to have better monitoring on the flow of the tourists.

1.8.6 Fishing in STR

After formation of the Sundarbans Tiger Reserve (STR), as well as declaration of Sajnekhali Wildlife Sanctuary and the core area of STR as a National Park, fishing restrictions were introduced in these areas, as per the provisions of the Wild Life (Protection) Act, 1972. However, as fishermen being an integral

[111] *The maximum number of visitors that a site can sustain, given the Management Capacity (MC) available.*

part of Sundarbans, they had been traditionally allowed fishing, based on the issuance of permits known as "Boat License Certificates" (BLCs). There has been constant demand to increase the number of BLC's. Director, Sunderban Bioshere Reserve pointed out (September 2015) several issues relating to fishing in Sundarban, which *inter alia* included (i) cases of benami BLCs (ii) absence of any assessment of the carrying capacity of the Sundarbans Biosphere Reserve, regarding sustainable fishing operations (iii) absence of clear-cut rules and policy for renewal of BLCs. These resulted in indiscriminate exploitation of fish, which could lead to an adverse effect on the conservation of the regional biodiversity. As of November 2015, out of 4,722 BLCs, 1,719 had remained inactive, as detailed in **Table 1.16**.

Table 1.16: Fishing Permissions (BLC) by Forest Department in Sundarbans

Unit	Total number of Fishing BLCs	No. of active BLCs	No of inactive BLCs
24 PGS (S) Division	3,793	2,312	1,481
Sundarban Tiger Reserve	929	691	238
Total BLCs for Sundarban	**4,722**	**3,003**	**1,719**

(Source: Divisional Records)

In response to the proposal for changing the procedure of issuing BLCs, made by the PCCF, Wildlife & CWLW, the Department of Forests, GoWB, issued (February 2017) the following directives:

- Cancellation of inactive BLCs with immediate effect and conducting a process of identifying genuine fishermen, amongst the active BLCs.
- BLCs to be restricted to fishermen from the JFMC, constituted from the fringe villages only.
- BLCs to be restricted to boats registered under the West Bengal Marine Fishing Regulation Act, 1993, for proper identification of boats.
- Study to be carried out by a reputed organization, to look at the carrying capacity of fishing areas, permitted by law in the SBR.

The APCCF & Director, Sundarban Biosphere Reserve (SBR) cancelled (June 2017) 862 of the defunct BLCs (207 number of STR and 655 number of South 24 Parganas) and directed Field Director (FD), STR and DFO, South 24 Parganas, to follow the procedure as approved in above mentioned order, for issue of new BLCs. FD, STR stated (November 2022) the process of identifying genuine fishermen amongst the active BLCs and from the JFMCs was still under process.

However, the fact remains that, as of August 2022, the process of identifying genuine fishermen from the active BLCs and from the JFMCs had not been carried out and the study[112] to assess the carrying capacity of fishing areas was still in the draft stage. Illegal entry into the prohibited areas was still continuing, which resulted in adverse effects on the conservation of the biodiversity of the region, as well as human-tiger conflicts. The Government accepted (March 2023) the audit observation.

[112] *Assessing the quantum and spatial extent of aquatic biodiversity including fisheries extracted from Sundarban Biosphere Reserve.*

1.8.7 Removal of human and biotic pressure

The National Wildlife Action Plan 2002-16 stated that voluntary relocation and rehabilitation of villages, out of PAs, needed to be done and that relocation and rehabilitation of villages should be undertaken on a voluntary basis, or by persuasion from high conservation value segments of PAs *e.g.* pristine/old growth areas or the core segments of NPs. This was also essential for reducing and preventing human and wildlife conflict.

In the State, as of December 2022, there were 73 forest villages in six PAs[113]. Audit however, observed that effective steps had not been taken to relocate the forest villages. The only initiative taken, had been in regard to two villages within the core area of BTR, had since been taken up as detailed below:

1.8.7.1 Relocation of villages from the BTR

As per Wild Life (Protection) Act, 1972 (WPA)[114], core or critical Tiger habitats areas of NPs/WLSs, were required to be kept inviolate for Tiger conservation and to be notified by the State Government, in consultation with an Expert Committee constituted for the purpose, without affecting the rights of the Scheduled Tribes and other Traditional Forest Dwellers. The voluntary relocation of people was to be carried out only in the identified core/ critical Tiger habitats of a Tiger reserve.

Fig. 1.15: Gangutia Forest Village

(Source: Field visit)

Further, as per the guidelines for preparation of the Tiger Conservation Plan (2007), issued by the National Tiger Conservation Authority (NTCA), a minimum inviolate area of 800-1,200 sq km was required for a viable population of Tigers (20 breeding tigresses) and an ecologically sensitive zone (buffer/ co-existence area/ multiple use area) of 1,000-3,000 sq km was required around this inviolate space, for sustenance of surplus breeding age Tigers and old displaced Tigers. NTCA Guidelines (March 2010) prescribed two options for relocation of forest Villages: Option I involved payment of the entire package amount (₹ 10 lakh per family) to the family, in case the family so opted, without involving any rehabilitation/ relocation process by the Forest Department. Option II involved carrying out relocation/ rehabilitation of village from the Protected Area/ Tiger Reserve, by the Forest Department. The financial limits, under the above packages, were revised to ₹ 15 lakh per family, with effect from 8 April 2021. The Field Director was to submit a Village Relocation Proposal (VRP), to the National Tiger Conservation Authority/ Project Tiger, for funding support, through the Chief Wildlife Warden/ State Government, as per the prescribed format.

[113] *37 forest villages and three Fixed Demand Holing villages in BTR, 12 forest villages in Jaldapara NP, seven in Gorumara NP, six in Senchal WLS, seven in Mahananda WLS, one in Singhalila NP.*

[114] *Section 38V.*

As per TCP (2016-17 to 2026-27) there were 40 forest villages, in the BTR, out of which 15 forest villages[115] having 1,019 families existed in the critical Tiger area. Since these villages existed in the core area, BTR was required to carry out relocation of people living in these villages. In this regard, Audit observed the following:

- A State Level Monitoring Committee had been formed (April 2010), for relocation of these 15 forest villages from the core area. Further, families from nine villages (August 2010) were willing to relocate and the committee decided (September 2010) to sign a Memorandum of Understanding (MoU) with these villagers. Audit, however, observed that MoU had not been signed with the villagers opting for relocation.
- Subsequently, in accordance with the provisions of the Wildlife (Protection) Act 1972, and the guidelines issued by NTCA, the proposal for relocation of Bhutia Basti village (51 family) was submitted (July 2019) to the Secretary, Forest Department, GoWB. Further, the relocation plan of the Gangutia village (195 family), was submitted to the CCF & Field Director, on 9 November 2021. Villagers from both of these forest villages had opted for option I. The amount of compensation to be paid would be ₹ 36.90 crore.
- It was further observed that the Department had set up a District Level Implementation Committee (DLIC) on 8 October 2021, *i.e.* more than two years after receipt of the relocation proposal, despite the fact that the formation of the DLIC was a pre-requisite for the proposal of relocation, as per the guidelines of NTCA.

In reply, the Government stated (March 2023) that proposals for relocation of the two villages had been sent to the NTCA in October 2022.

Thus, the process of relocation, in regard to only 246 families, out of the total 1,019 families, living in the core area of BTR, could be initiated, till date (March 2023).

Box 7: Good Practice

The Odisha State Government issued (2016) an additional set of guidelines, further extending financial assistance and other incentives/ benefits, for the inhabitants of core villages located inside the Tiger reserve. The benefit was also available to villages situated in PAs, other than the core areas of the Tiger reserves. The State guidelines had a wider applicability and extended to all villages in National Parks and Sanctuaries not covered by NTCA guidelines.

These guidelines provide for financial assistance (an incentive of ₹ 5.00 lakhs per family, in addition to a lump sum amount of ₹ 15.00 lakh) and other incentives/ benefits to the villages situated in all PAs, as well as inaccessible forest areas, including areas connecting wildlife habitats. During 1994-95 to 2021-22, 18 villages, consisting of 1,280 families, were relocated from the PAs (these included 6 villages, with 479 families, in 2021-22).

[115] *Raimatang, Adma, Chunabhati, Santrabari, Lepchakhawa, BhutiaBasty, Newlands, Kumargram, Buxa Duar FD Holding, Pampu basti, Gangutia, 28th Mile, 29th Mile, Jainti Fixed Demand Holders and Pana.*

1.9 Surveillance and control of poaching and illegal trade of wildlife

West Bengal shares its border with Bhutan, Nepal and Bangladesh. The Duars and the Terai region of North Bengal, as well as Kolkata, have been used as transit routes for illicit wildlife trade. NWAP 2017-31, envisaged the following actions in regard to control of poaching and illegal trade:

- Strengthening the capacity of frontline field staff to protect wildlife, through training and proper equipping, to increase focused crime prevention, patrolling and reporting,
- Establishing fast-track special courts/ benches, for dealing with forests and wildlife crimes,
- Engaging and networking with the Customs, Police, Paramilitary Forces, Coast Guard, Postal and Courier services and other agencies that could play a key regulatory role in preventing wildlife offences,
- Promoting international co-operation, to combat organised wildlife crime.

Audit observed that, during 2017-22, 75,254 live animals had been rescued and 1,24,322 wildlife articles, including 36 jars of venom and 1,321.64 Kg of different wildlife articles/ products had been seized. Further, scrutiny of records of the selected divisions revealed that 58 cases[116] of poaching had been officially recorded and 13 wild animals[117] had died due to poisoning.

1.9.1 Patrolling staff

Patrolling is integral for ensuring protection and conservation of wildlife in the PAs. The responsibility of securing the PAs, by and large, rests with the forest guards, head forest guards and foresters, as their duties include patrolling and watching, as well as camping at chowkis to facilitate patrolling deep inside the forests.

Audit observed that there were significant shortages in the staff engaged for patrolling. The sanctioned strength *vis-à-vis* men-in-position of the wildlife wing, as on 1 April 2017 and 31 March 2022, are detailed in **Table 1.17**.

Table 1.17: Sanctioned strength *vis-à-vis* men-in-position in the wildlife wing

Name of Post	As on 01.04.2017				As on 31.03.2022			
	Sanctioned Strength	Men-in-position	Vacancy	*Percentage*	Sanctioned strength	Men-in-position	Vacancy	*Percentage*
Forest Ranger	108	68	40	37	115	90	25	22
Deputy Ranger/Forester	258	160	98	38	285	149	136	48
Head Forest Guard	73	31	42	58	73	22	51	70
Forest Guard	728	391	337	46	757	310	447	59

(Source: Information furnished by Wildlife Wing)

[116] *Tigers-2, Bison-2, Rhino-6, Leopard-4 and other-35 like Deer, Sambar, Hyena, Dove, Pangolin etc.*

[117] *Leopard-4 and Elephant-2 and other-6 like Deer, Duck etc.*

Thus, there were significant vacancies in different frontline staff, ranging from 38 to 58 *per cent* and 48 to 70 *per cent,* as of 1 April 2017 and 31 March 2022, respectively, and the vacancies had increased across all cadres, except in the cadre of Forest Ranger. The Government accepted (March 2023) the audit observation.

1.9.2 Availability of arms

Arms and ammunitions are vital for management of PAs, for countering the armed attacks of poachers and other offenders, in addition to safeguarding against sudden attacks of wild animals.

Audit observed that the Department had not conducted a proper need analysis, for assessing the requirement of arms, in the absence of which the adequacy of availability of arms could not be ensured. Details of the arms and ammunitions supplied to seven Wildlife Divisions and their status, are given at **Table 1.18**.

Table 1.18: Status of arms in wildlife divisions

Wildlife Division	Double Bored/Single Barrel Gun		Pump action gun		Rifles		Total	
	No.	In Working condition	No.	In Working condition	No.	In Working condition	No.	In Working condition
South 24-Pgns.	31	13	02	02	45	28	78	43
Gorumara WL	52	37	20	15	18	17	90	69
Darjeeling WL	53	26	25	10	18	09	96	45
Jaldapara WL	104	74	21	17	40	40	165	131
Buxa Tiger Reserve (East)	53	53	02	02	14	14	69	69
Buxa Tiger Reserve (West)	111	87	12	11	15	14	138	112
Sunderban Tiger Reserve	32	24	17	16	55	35	104	75
Total							**740**	**544**

(Source: Divisional Records)

As may be seen, out of 740 arms supplied to seven wildlife divisions, only 544 arms (74 *per cent*) were in working condition.

In reply, the Government stated (January 2024) that a fresh consignment of arms and ammunitions have been purchased in the financial year 2023-24, after the audit was over and more such purchases are proposed in the next financial year.

1.9.3 Availability of Wireless, RT sets

Wireless communication network was established in all Forest Divisions for effective all-weather communication amongst the staff. The wireless equipment used for this purpose included Static sets, Mobile sets, Walkie Talkies, Repeaters, Chargers for Repeaters *etc*. For wireless network to be effective, it is essential that all the units/equipment are functional. The status of wireless equipment, in the seven wildlife divisions, is given in **Table 1.19**.

Table 1.19: Status of wireless equipment in the wildlife divisions

Wildlife Division	Walky-Talky		RT set		Total instruments	
	No.	In Working condition	No.	In Working condition	No.	In Working condition
South 24-Pgns.	25	18	24	16	49	34
Gorumara WL	70	44	52	40	122	84
Darjeeling WL	69	36	45	41	114	77
Jaldapara WL	61	33	56	35	117	68
Buxa Tiger Reserve (East)	22	19	18	15	40	34
Buxa Tiger Reserve (West)	30	30	34	34	64	64
Sunderban Tiger Reserve	29	29	29	29	58	58
Total					**564**	**419**

(Source: Divisional Records)

From the table, it may be seen that, out of 564 wireless sets, 419 (74 *per cent*) were in working condition.

In reply, the Government stated (March 2023) that steps would be taken to repair the defective RT sets.

Recommendation 13:

Government should take steps to augment critical front line field staff and provide them adequate arms and wireless equipment necessary for control of poaching and illegal trade as envisaged in NWAP 2017-21.

1.9.4 Installation of "E-eye" – a real time anti-poaching surveillance system

NWAP 2017-31 in the context of Strengthening and improving the Protected Area network (Para 6.1, chapter 1) envisaged setting up Electronic eye (E-eye) surveillance in highly sensitive Tiger Reserves (TRs) and PAs and also initiate the use of drone/ unmanned aerial vehicle technology as an airborne monitoring/ warning system for better protection and monitoring of wildlife.

With a view to provide live visual monitoring of remote area using unmanned surveillance system, a proposal for installation of "E-eye"– a real time anti-poaching surveillance system was approved (October 2019) by the PCCF, Wildlife and CWLW at an estimated cost of ₹ 1.88 crore in Jaldhapara National Park only. The system was based on long range clear vision optical and thermal sensors to support seamless electronic surveillance wireless technology to ensure minimal setup and interference in the reserve area. Accordingly, e-tender was floated and only one bidder was technically qualified. As a result, the tender was cancelled (July 2020) and no further action was taken for its implementation.

It was seen that Electronic eye (E-eye) surveillance is being successfully implemented in three PAs, *viz*. Jim Corbett National Park (Uttarakhand), Kaziranga National Park (Assam) and Ratapani TR (Madhya Pradesh). However, the State was yet to implement real time anti-poaching surveillance system through Electronic eye (E-eye) surveillance in any of its PAs. This was despite the fact that PAs of North Bengal are sensitive in view of high cases of poaching.

1.9.5 Convictions for wildlife offences

As per the handbook for Wildlife Crime Investigation-2013, of Wildlife Control Crime Control Bureau, MoEF&CC, trials of cases, instituted on complaints under Section 55[118] of the Wild Life (Protection) Act, 1972, are conducted as per the provisions of Sections 244 to 248 of the Code of Criminal Procedure. The handbook further stipulated that process against the accused should not be delayed after filing the complaint. The Investigating Officer and the Public Prosecutor should work together, to avoid such delays. The Investigating Officer should ensure attendance of witnesses in the court on the date of hearing, brief the witnesses properly and co-ordinate with the P.P/Magistrate, for timely completion of trial.

Records related to the disposal of the cases in the selected wildlife divisions, revealed that, during 2017-22, 225 cases had been registered, against which the conviction/ disposal was only four (two *per cent*). It was further observed that, as of March 2022, 1,290 cases pertaining to the years 1991-2022, were pending before the courts and 206 cases were pending with the Forest offices.

Test check of records further showed that, in the BTR (West) wildlife division, out of total 471 pending cases, in 429 cases, Prosecution Offence Reports (PORs) had not been submitted. Besides, in respect of 82 cases[119], Divisions had taken 01 to 20 years for submission of PORs.

It was further observed that, in March 2021, Addl. Chief Judicial Magistrate, 2nd Court, Alipurduar, under direction of the Honorable High Court, wrote to the CCF and FD, BTR, with a request to instruct the subordinate offices to file the PORs in all pending cases, as early as possible and further to ensure that forest personnel attend court as and when directed, in connection with such cases.

In reply, the Government stated (March 2023) that timely POR submission has been affected due to shortage of qualified staff.

Audit also observed following lapses with regard to control of crime in the State:

1.9.5.1 Institutional setup to deal with the wildlife crime control

Audit observed that there was no institutional set-up in the Wildlife Wing, for mitigating wildlife crimes in the State, as well as for intelligence gathering or tracking the movement of poachers/ illegal traders.

The DFOs of the territorial and wildlife divisions deal with wildlife crime, including information gathering, and report to the CWLW, through their respective CFs/ CCFs. It was, however, observed that the State Board for Wildlife, in its 9th meeting held on 10 February 2015, had approved the setting up of a Wildlife Crime Control Cell, under the Wildlife Wing of the Directorate of Forests, for better and co-ordinated efforts to control wildlife related crime in the State, with its Headquarters at Kolkata and two 'Wildlife Crime Control Cells' one at North Bengal (Siliguri) and another in South Bengal (Kolkata).

[118] *Any person who has given notice of not less than 60 days, in the manner prescribed, of the alleged offence and of his intention to make a complaint, to the Central Government or the State Government or the officer authorised.*

[119] *BTR (West) (34), Gorumara WLD (22), Darjeeling WLD (18) and Raiganj Div (8).*

Accordingly, a draft notification, giving the composition of different committees and units, with their terms of reference, was submitted (July 2015), to the Forest Department, GoWB, for approval and issue of necessary notifications. However, such notification had not been issued so far (March 2023).

Box 8: Good Practice

The Madhya Pradesh Forest Department had set up a Wildlife Crime Control Cell, with members from the State Police. Similarly, the Odisha Police Department had established a Wildlife Crime Control Cell with a member from the Forest Department. Wildlife Crime Control Unit were also functional in States like Assam and Nagaland.

Recommendation 14:

The Department, in view of the wide spread ramifications of illegal trade in the State, should consider setting up a dedicated Wildlife Crime Control Cell, in co-ordination with Police Department.

1.9.5.2 Fast track special courts/ benches, for forests and wildlife crimes

NWAP 2017-31 envisaged establishing fast-track special courts/benches, for dealing with forests and wildlife crimes. The Wildlife Crime Control Bureau (WCCB) is a multi-disciplinary body, established under the Wildlife (Protection) Act, 1972, to combat organised wildlife crime in the country. Its mandate includes co-ordination of action by various enforcement agencies, with regard to wildlife offences, capacity building in investigation, assistance in prosecution of cases related to wildlife crimes *etc.* WCCB regularly conducts Inter-Agency Coordination meetings at the national and regional levels. In this regard, Audit observed the following:

- The Additional PCCF (North Bengal) reiterated (7 March 2017) the need for expert legal assistance, to Public Prosecutors dealing with wildlife offence cases, in the regional Inter-Agency Coordination Meeting on prevention of wildlife crimes. He also suggested forming a central pool of legal experts on wildlife & forest cases, who could be approached by individual officers/ State Forest Departments to enable handling of wildlife cases more effectively.
- In response to the Audit query, the Regional Deputy Director of WCCB mentioned (June 2022) that paucity of competent Advocates is the major hindrance, as most of the Government empaneled Advocates were not well conversant with the Wild Life (Protection) Act, 1972.
- From the minutes of the meeting[120] (December 2020) it was seen that the representative of CID, West Bengal, proposed that Special Courts be set up to deal with the Forest and Wildlife cases in order to expedite the proceedings. In the said meeting PCCF, Wildlife & CWLW, West Bengal, said that the proposal was with the Government.

However, as of October 2022, such courts had not been established in the State.

[120] *1st Co-ordination Meeting for mitigating illegal trade of wildlife and wildlife articles held on 15 December 2020.*

Recommendation 15:

In view of the poor conviction rate of wildlife cases, the Department, in collaboration with Ministry of Environment and Forest & Climate Change (MoEF&CC), Ministry of Law & Justice and State Law Department, should consider setting up of fast-track special courts/benches, for dealing with forests and wildlife crimes.

The Department welcomed (January 2024) the suggestion of setting up of *Fast Track special courts* and *Wildlife Crime Control Cell* and stated that the matter would be taken up with the State Government.

1.9.6 Poaching during Ritualistic hunting

Ritualistic hunting is outlawed under the Wildlife (Protection) Act, 1972. This kind of hunting, known as "Shikar Utsav", results in mass slaughter of ecologically crucial endangered wildlife. Hunting festivals, which occur over more than 50 days in a year, are recreational.

	
Wild Boar at Pakhibandh, Jhargram on 13 April 2018	***Small Indian Civet, Pakhibandh, Jhargram on 13 April 2022***

Fig 1.16: Poaching in ritualistic hunting

(Source: HEAL)

In response to a public interest litigation, Hon'ble Calcutta High Court, by its order dated 18 April 2019, directed the Chief Wildlife Warden, along with the district administration and Railways, to take immediate steps to stop ritualistic hunting. The South Eastern Railway and the Eastern Railway were also directed to provide all possible help and co-operation to the Forest Department, to prevent ritualistic hunting. The directions of the High Court were reiterated in its order dated 26 March 2021, in a *suo motu* public interest litigation concerning wildlife conservation.

It was seen that, on the basis of the alerts issued from time to time by the Wildlife Crime Control Bureau (WCCB), the PCCF (Wildlife) & CWLW, issued advisory and directives for taking suitable measures, *viz*. suitable picketing at strategic locations, co-ordination with District Authorities, Railway Authorities, JFMC members, sensitising people *etc*. Records showed that various steps, such as wide publicity by means of putting up posters at various strategic locations, distribution of leaflets, anti-poaching meetings in forest fringe villages, co-ordination meetings with the District Administration, Police and Railways, NAKA checking at various points *etc.,* had been taken up by the division, to control the mass gathering for hunting.

However, from the contempt petition filed and consequent order (29 June 2022) of the Hon’ble High Court, it was observed that such unlawful assemblies of armed hunters had continued, particularly in some places within the jurisdiction of the Jhargram and West Medinipur Divisions and poaching of wild animals such as Small Indian Civet, Jungle Cat, Wild Boar, *etc.*, had taken place during the hunting festival in April/May 2022. It was further seen from the reports by the divisions to the CWLW, that neither had any complaints been filed, nor had any person been arrested against ritualistic hunting, in April/May 2022.

Box 9: Case Study

Failure of the Department in catching a Tiger alive, which was straying for more than two months

Tiger movement was reported from Lalgarh territorial forest area of Paschim Medinipur district at the end January 2018, and its pugmarks were noticed in early February 2018. The Tiger was first spotted through the camera trap installed in the Melkheria forest, in the Kantapahari Beat, Lalgarh Range, on 02 March 2018. However, the Tiger could not be caught live, even though there was prior information about the hunting festival in that area. Finally, the Tiger carcass was found (13 April 2018) at Garrah Mouza, under the Chandra Range in Paschim Medinipur.

Fig. 1.17: Victim of “Shikar Utsab”– Royal Bengal Tiger, Location: Lalgarh, West Medinipur, on 13 April 2018

(Source: HEAL)

The external examination report of the carcass, by the NTCA designated team, found that the carcass had severe head injury, with sharp objects. As per the Panchnama Report conducted by the concerned Veterinary Officer of Animal Resource Development Department, the reason of death was coma. However, final PM report had not been received, till June 2022. As a result, investigation could not be processed. A case was also registered with the Chief Judicial Magistrate, Medinipur. However, no further progress was made in this regard.

Box 10: Case Study

Poaching case in Sundarban

Scrutiny of records of the office of the DFO, South 24 Parganas, revealed that, on 8 April 2019, a Tiger carcass was found trapped in the snare in the Reserve Forest (Ajmalmari-I compartment under Kultali Beat) in the Sundarbans. A case regarding poaching of the Tiger and illegal possession of hunting equipment was filed against the 11 accused on 8 April 2019. Scrutiny revealed that the Final POR was submitted in April 2021, after two years from filing of the case. However, the trial of the case has not yet started. This instance showed that the practice of laying traps, in different places of the Sundarbans, for Deer meat, was still prevalent in the area. Two Wildlife cases[121], relating to Deer meat, had been filed previously. However, no convictions had taken place, as of August 2022.

Government stated (March 2023) that the Honorable High Court at Kolkata constituted (February 2023) a "Humane Committee" comprising of all relevant stakeholders at each district to deal with ritualistic hunting in a holistic manner and the committee had started functioning. Subsequently (January 2024) accepting the audit observations, the Department stated that due to strong and multi prompted action taken by the Forest Directorate, ritualistic hunting had since been drastically come down. The Department further stated that the Audit observations in this matter had been noted for future compliance.

Recommendation 16:

The Department needs to improve its monitoring mechanism through regular Inspections by higher officials and implement the electronic surveillance system to check poaching of wild animals.

[121] *CMC-8344/15(POR No-50/RD of 2015-16 and No-405/RD of 2018-19).*

Chapter II

Detailed Compliance Audit on Revenue Collection and Control of Mining Activities of Minor Minerals

CHAPTER - II

INDUSTRY, COMMERCE AND ENTERPRISES DEPARTMENT AND LAND & LAND REFORMS & REFUGEE RELIEF AND REHABILATATION DEPARTMENT

2 Detailed Compliance Audit on Revenue Collection and Control of Mining Activities of Minor Minerals

2.1 Introduction

Mineral resources provide the necessary base for industrial development. Due to its varied geological structure, West Bengal is endowed with a wide variety of mineral resources and is one of the mineral rich States in the country. The Central and State Governments are jointly responsible for the development of the mining sector and mineral exploitation in India. Parliament had enacted the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957, which lays out the basic legal framework for regulation of mines and development of minerals in the country. Under the provisions of the MMDR Act, 1957, minerals are broadly divided into two categories, *viz.* major minerals, such as coal, iron ore *etc*. and minor minerals, such as stone, gravel, ordinary earth, ordinary sand, china clay, fire clay, quartz *etc*. According to Section 3(e) of the MMDR Act, 1957, "minor minerals" means building stones, gravel, ordinary clay, ordinary sand (other than sand used for prescribed purposes) and any other mineral which the Central Government may, by notification in the Official Gazette, declare to be a minor mineral. As per the West Bengal Minor Minerals Rules (WBMMR), 2002, 23 varieties of minor minerals are available in the State.

Under Section 15 of the MMDR Act, 1957, the State Government is empowered to frame rules for grant of mineral concessions for minor minerals, including fixing and collection of rent, royalty, fees, dead rent, fines or other charges.

The State Government enacted the WBMMR, 2002, for regulating the grant of quarry leases, mining leases, and other mineral concessions, in regard to minor minerals. It also enacted the West Bengal Minor Mineral Concession (WBMMC) Rules, 2016, for regulating the (a) grant of short-term mining licences[122], (b) prospecting licence-cum-mining leases[123] and (c) mining leases[124] in regard to the minor minerals in the State. The West Bengal Minor Mineral (Auction) (WBMMA) Rules, framed in 2016, aim to initiate an auction process for grant of mining leases, in areas containing notified minor minerals.

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[122] *Short-term mining licences:- means a licence granted under Chapter IV of these rules to-extract and remove any minor mineral in specified quantity from a specified area for a specified period on prepayment of royalty, cesses and other statutory dues.*

[123] *Prospecting licence-cum-mining leases:- means a two stage concession granted for the purpose of undertaking prospecting operations followed by mining operations.*

[124] *Mining leases: - means a lease granted for the purpose of undertaking mining operations, and includes a sub-lease granted for such purpose.*

Important minor minerals, found in West Bengal, are Granite[125], Blackstone[126], Talc & Steatite[127], Sand[128], Dolomite[129], Quartz & Feldspar[130], China Clay & Fire Clay[131]. A significant reserve of sand is available on the river beds of Damodar & Ajoy, in the western parts of the State.

Receipts from minor minerals in the State, comprise of royalty[132], dead rent[133], surface rent[134], water rate[135], price of minerals[136], application fee[137] for lease/permit and bid amount[138] *etc*. In addition, four types of cess, *i.e.* Rural Employment (RE) Cess, Road Cess, Public Works (PW) Cess and Primary Education (PE) Cess, are also recovered from the holders of mining leases.

During 2017-22, ₹ 2,256.94 crore were realised from mines & minerals in the State.

2.2 Organisational Structure

In West Bengal, the Land & Land Reforms and Refugee Relief & Rehabilitation (L&LR and RR&R) Department, grants Long Term Mining Leases (LTML) and Short Term Mining Leases (STML), for Sand, Boulder, Gravel, Morrum, Earth *etc*. It is also entrusted with the assessment and collection of royalty, cess, dead rent *etc*.

The Industry, Commerce and Enterprises (IC&E) Department grants mining leases in respect of Stone, Granite, China Clay, Fire Clay *etc*. and assesses the royalty and dead rent thereon. Collection of revenue, in respect of these minor minerals, is carried out by the L&LR and RR&R Department. Notifications regarding the rates of royalty, rent *etc*. of minor minerals, are also issued, from time to time, by the IC&E Department.

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125 *Found in Purulia and Bankura.*

126 *Found in Birbhum, Purulia and Bankura.*

127 *Found in Darjeeling.*

128 *Found across the state.*

129 *Found in Purulia.*

130 *Found in Purulia, Bankura, Jhargram and Birbhum.*

131 *Found in Birbhum, Bankura and Purulia.*

132 *'Royalty' is the value of any mineral extracted or removed or consumed from the leased area at the rate as notified, from time to time' by the State Government. The amount payable as royalty is, therefore, determined by the quantum of minerals removed or consumed by the lessee, in proportion to the quantity extracted.*

133 *'Dead rent' is the minimum amount payable in a year, by the person granted a mining lease, irrespective of whether he operated/could operate the area fully or partly, as per rule or agreements of a mining lease.*

134 *The amount that the lessee shall pay at the fixed rates, for the surface area used by him, for the purpose of the mining operations.*

135 *The amount that the lessee shall pay, at fixed rates, for the surface area used by him, for the purpose of the mining operations.*

136 *Whenever any person extracts, without any lawful authority, any mineral from any land, the State Government may recover, from such person, the mineral so raised, the price thereof fixed at 1.5 times of the amount of royalty of minerals.*

137 *An application fee, for issue of a short-term mining licence, is to be submitted to the District Authority, in the prescribed Form, accompanied by a challan, showing the deposit of the non-refundable amount.*

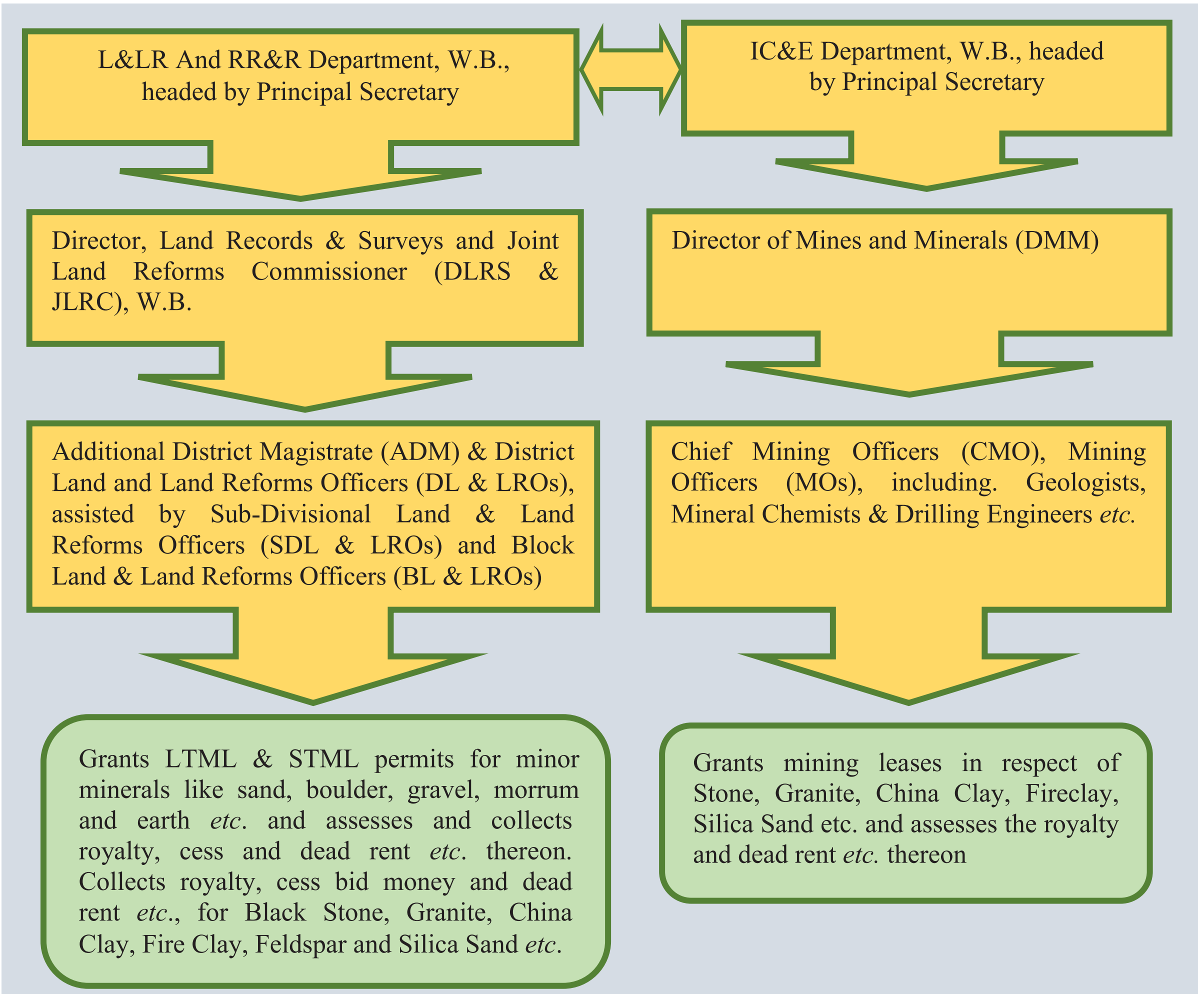
138 *Amount quoted on and above the reserve price, by the successful bidder.*

As per the WBMMA Rules, the grant of Mining Leases, for exploitation of minor minerals, was to be made through competitive bidding and rules were to be framed, by the IC&E Department, for conducting competitive bidding, through a notification, for determination of the reserve price of the mineral block.

The State Government introduced (July 2021) the Sand Mining Policy-2021, which intends to govern the excavation, transportation, storage, sale and consumption of sand. In order to effectively achieve the objectives of the Policy, the West Bengal Mineral Development and Trading Corporation Ltd. (WBMDTCL) (a fully owned undertaking of the Government of West Bengal), was established as the designated agency.

Both departments are under the administrative control of respective Principal Secretary/Secretary, who are assisted by Directors and District level, Sub-Division level and Block Level Officers, as shown in **Chart 2.1**:

Chart 2.1: Organisational set-up for the Administration of Mining operations in West Bengal

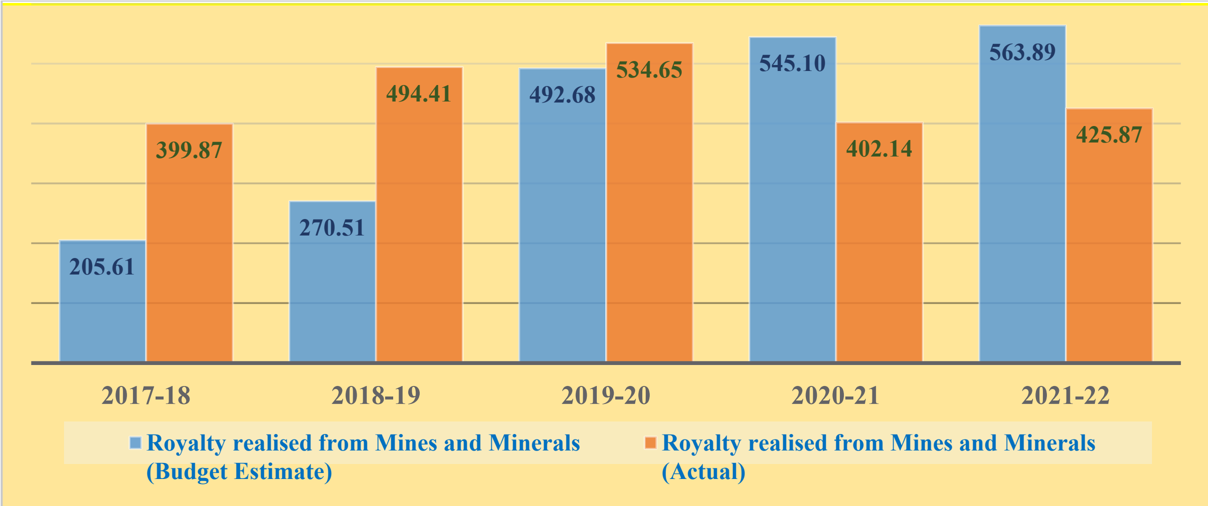


2.3 Trends of Revenue

Year-wise budget estimates, *vis-à-vis* the actual receipts from mines and minerals, during financial years (FYs) 2017-18 to 2021-22, are shown in **Chart 2.2**.

Chart 2.2: Budget Estimates *vis-a-vis* Actuals

(₹ in crore)



The chart depicts that the actual royalty, realised from mines & minerals was more than the Budget Estimates (BEs), during FY 2017-18 to FY 2019-20. However, during FYs 2020-21 and 2021-22, the actual royalty was less than the Budget Estimates. The Department had not furnished reply for the reason for deviation of actual collection of royalty with the BE, though called for (April 2023 and June 2023) in Audit.

2.4 Audit Objectives

The Detailed Compliance Audit (DCA) was conducted to ascertain whether:

i) The system of levy and collection of royalty, rent, fees, penalty *etc*., for minor minerals, was effective, adequate and in conformity with the provisions of the extant Acts and Rules;

ii) The provisions of the Act, Rules and Departmental instructions were adequate, for identifying the extent of illegal mining and curbing activities which promote illegal mining;

iii) Effective controls and system were in place, for addressing the socio-economic concerns of the persons affected by mining;

iv) The internal control mechanism and monitoring mechanism, in place, was adequate & effective, for preventing leakage of revenue and whether there was a mechanism for inter-departmental cross-verification of data/information;

v) The Environmental Acts were adhered to, in the operation of mining leases and steps were taken to minimise the socio-economic and environmental effects of illegal mining in the State;

vi) Sustainable consumption and production patterns were followed, which carrying out mining activities (SDG 12).

2.5 Audit Criteria

Receipts from minor minerals are governed under the following Acts and Rules, which constituted the audit criteria:

- Bengal Public Demand Recovery (BPDR) Act, 1913, Government of West Bengal

- Mines and Minerals (Development and Regulation) Act, 1957, Government of India (GoI)
- Environment Protection (EP) Act, 1986, GoI
- West Bengal Minerals (Prevention of Illegal Mining, Transportation and Storage) (WBMPIMTS) Rules, 2002, Department of Industry, Commerce & Enterprises, Government of West Bengal
- West Bengal Minor Minerals Rules (WBMMR), 2002, Department of Industry, Commerce & Enterprises, Government of West Bengal
- Environment Impact Assessment Notification, 2006, as amended from time to time, issued by the Ministry of Environment, Forest and Climate Change (MoEF&CC), GoI.
- Minerals Concession (MC) Rules, 2016, GoI
- West Bengal Minor Minerals (Concessions) (WBMMC) Rules, 2016, Department of Industry, Commerce & Enterprises, Government of West Bengal
- West Bengal Minor Minerals (Auction) (WBMMA) Rules, 2016, Department of Industry, Commerce & Enterprises, Government of West Bengal
- West Bengal District Minerals Foundation (WBDMF) Rules, 2016, Department of Industry, Commerce & Enterprises, Government of West Bengal
- Mineral Conservation and Development (MCD) Rules, 2017, GoI
- West Bengal Sand (Mining, Transportation, Storage and Sale) Rules, 2021, Department of Industry, Commerce & Enterprises, Government of West Bengal
- West Bengal Sand Mining Policy, 2021, Department of Industry, Commerce & Enterprises, Government of West Bengal
- Mining Plans, Environmental Clearance, Consent to Operate, issued by the State Environment Impact Assessment Authority (SEIAA) and West Bengal State Pollution Control Board (WBSPCB)
- Guidelines/ Manual/ instructions/ Circulars/ Orders, issued by the L&LR and RR&R and IC&E Departments.

2.6 Audit Scope

The DCA was conducted through test-check of records of the IC&E Department, Directorate of Land Records & Survey (DLRS), Directorate of Mines & Minerals (DMM), seven[139] selected districts, Land & Land Reforms Officers (DL&LROs) and office of the Chief Mining Officer (CMO), Asansol, four[140] Sub-Divisional Land & Land Reforms Officers (SDL&LROs) and 25[141] Block Land & Land

[139] *Bankura, Birbhum, Kalimpong, Paschim Bardhaman, Purba Bardhaman, Purba Medinipur and Purulia.*

[140] *Bankura-Khatra, Bishnupur & Bankura Sadar; Birbhum – Birbhum Sadar.*

[141] *Bankura-Barjora, Bishnupur, Khatra & Saltora; Birbhum- Bolpur, Md. Bazar, Nalhati-I & Rampurhat-I; Paschim Bardhaman- Andal, Jamuria, Kanska, Ranigunj & Salanpur; Purba Bardhaman- Bardhaman-II, Galsi-II, Jamlapur, Khandagosh & Mongolkot; Purba Medinipur- Nandigram-III, Panskura-II, Ramnagar-I & Ramnagar -II; Purulia- Barrabazar, Manbazar-I & Raghunathpur-I.*

Reforms Officers (BL&LROs), between April and October 2022, covering the period from FY 2017-18 to FY 2021-22. The selection of these seven districts was done by adopting the stratified random sampling method, using IDEA software. The four SD&LROs and 25 BL&LROs were selected on the basis of the year-wise revenue collection of Minor minerals.

The IC&E Department had leased out 74 *in-situ* mines[142], in four selected districts, which were test-checked in audit. There are no *in-situ* mines in three selected district. Further, L&LR and RR&R Department had e-auctioned 811 sand blocks, in seven selected districts and issued Letters of Intent (LOIs) to 587 bidders, which were also test-checked in audit.

2.7 Audit Methodology

Audit examined records pertaining to the mechanism of assessment and collection of royalty and other dues, in the selected field offices. In addition, Audit analysed documents related to implementation of the Environment Impact Assessment Notification, 2006, in mining, and verified compliance of the policies, notifications, orders and circulars, issued during the period.

Geo-spatial studies were conducted (March 2023) at three[143] mining sites, with an expert team from the Centre for Aerospace Research, MIT Campus, Anna University, Chennai, in the presence of State Mining Officials of two[144] districts, to ascertain the mapping/verification of allotted mining areas/operations, as also to estimate the volume of minor minerals excavated in the State, using UAV[145], DGPS[146] Instrument, Bathymetric[147] and Geographical Information System (GIS)[148] technology.

The three mining sites, for the Geo-spatial study, were selected based on mining activities beyond the approved leased areas, as per historical imagery between April 2017 and September 2022, using 'google earth pro' software.

Entry Conferences were conducted with the Secretary of the L&LR and RR&R Department and the Secretary of the IC&E Department, in August 2022, in which the audit objectives, audit criteria, scope and methodology of audit, were discussed. Exit Conference was conducted with the L&LR and RR&R Department on 9 June 2023 and with the Pr. Secretary of the IC&E Department on 26 June 2023.

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142 *In-situ mining, also known as solution mining, involves leaving the ore where it is in the ground and using liquids that are pumped through it, to recover the minerals out of the ore, by leaching.*

143 *Bibhas Kumar Das, Brindabanpur Fire Clay & China Clay Mine, at Bankura district; M/s Todi Minerals Pvt. Ltd., Granite/ Stone Mine, at Purulia District & Mr. Arun Saraf, Gee Dee Mining Pvt. Ltd. Sand mining, at Purulia district.*

144 *Bankura and Purulia.*

145 *'Unmanned Aerial Vehicle' (UAV) is a generic aircraft, designed to operate without a human pilot on-board. It can be used for mapping, by combining aerial images and traditional survey techniques and it can act as an alternative for aerial mapping technologies.*

146 ***'**Differential Global Positioning System' (DGPS) is an enhancement to the Global Positioning System **(**GPS**),** which provides improved location accuracy.*

147 *'Bathymetry' is the study of the "beds" or "floors" of water bodies.*

148 *A 'Geographic Information System' (GIS) is a computer based system, for capturing, storing, checking and displaying data related to positions on the earth's surface.*

Audit Findings

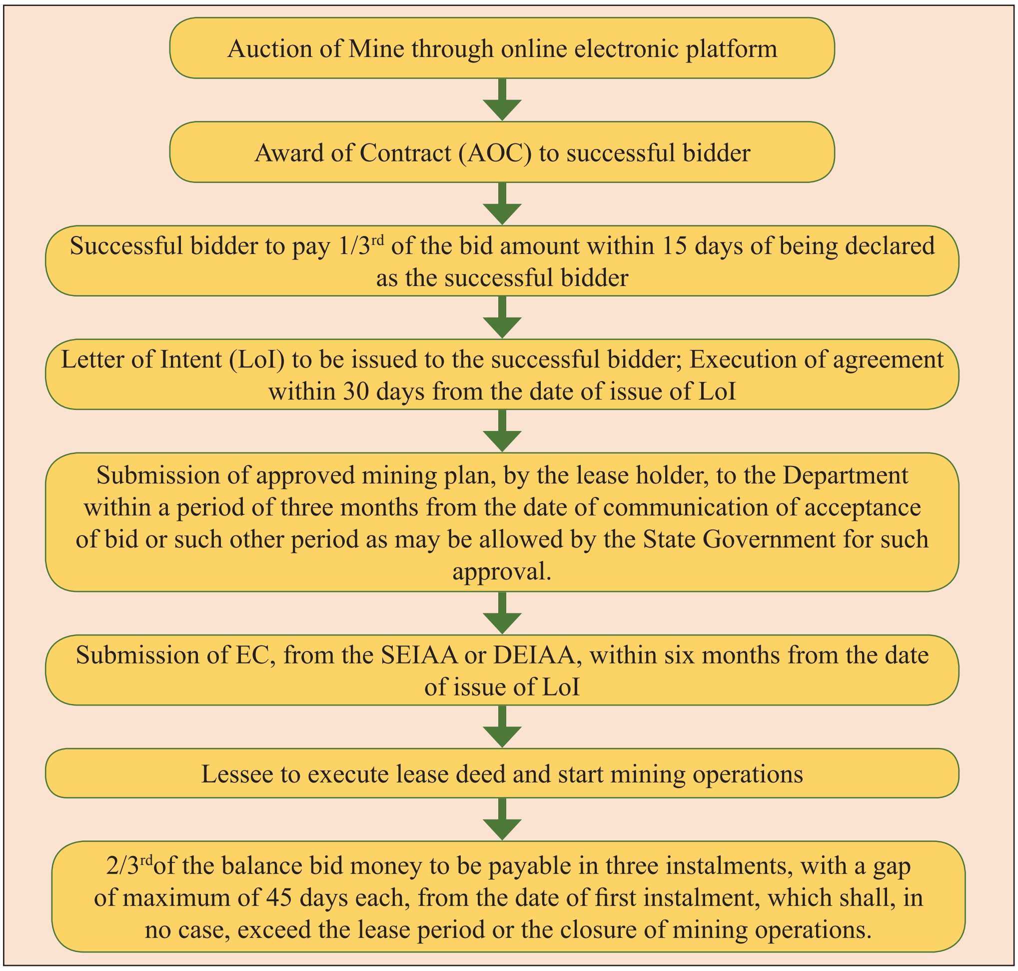
2.8 Management of Mining Leases

A Mining Plan is a pre-requisite, for grant and renewal of lease/license/working permission, for mining of minor minerals. Under rule 4(2)(b) of the WBMMC Rules, 2016, the State Government shall grant a mining lease, if there is a Mining Plan, as per the guidelines of the Indian Bureau of Mines and the same has duly been approved by the Chief Mining Officer (CMO) or the Mining Officers (MOs) in charge of the respective zones. No holder of a mining lease shall commence or carry out mining operations in any area except in accordance with the approved mining plan. Every Mining Plan must have a Mine Closure Plan. WBMMC Rules, 2016, also contained provisions for protection of the environment; removal and utilisation of top soil; reclamation and rehabilitation of land; precautions against air, water and noise pollution and discharge of effluents *etc*., during mining operations. Further, MoEFCC, GoI, had also notified (January 2016) the requirement of obtaining prior Environment Clearance (EC) for mining projects concerning minor mineral sand having lease area equal to or less than five hectares (ha).

Under Rule 20 of the WBMMC Rules, 2016, the lessees shall at his own expense, survey and demarcate the area, in terms of the geographic coordinates shown in the Mining Plan, granted under the lease.

A flow chart of the process of auction of minor minerals is given in **Chart 2.3**:

Chart 2.3



2.8.1 Execution of Mining Lease Deed

Execution of the mining lease deed is a critical component of the mining process, as detailed above (in Chart-2.3). Audit observed that, in 73 cases of sand mining, in two selected districts[149], the due dates of execution of the lease deeds were between April 2017 and December 2019. However, the lease deeds had not been executed, for periods ranging from 841 to 1801 days till 31 March 2022. Details of mining lease deeds that had not executed till March 2022, are shown in ***Appendix -7.*** Audit observed that there is no provision, either in the extant rules or in the LoI, for the course of action to be resorted to, in cases of non-execution of lease deeds.

Good Practice

The Rajasthan MM Concession Rules, 2017, as per Rule 21 *ibid*, provide that, if the bidder fails to execute lease deeds within the prescribed time, the competent authority shall revoke the sanction order and forfeit, premium amount, security deposit and performance security, deposited by the grantee.

Further, as per Rule 8(5) of the MM Concession Rules, 2017 of Gujarat, the grant of quarry lease becomes void, if the registration is not executed within 30 days.

Further scrutiny of records revealed that, in these 73 cases, the total annual raising target[150], fixed by the competent authority (DL&LROs), was 31.95 crore cft. As these blocks had not been cancelled and re-auctioned, there had been potential loss of revenue, in the form of royalty[151] & cess[152], amounting to ₹ 53.04 crore, annually ***(Appendix -7).***

In the Exit Conference L&LR and RR&R Department stated (July 2023) that due to late submission of Environmental Certificates (ECs) lease deeds has not been executed in time. However, the Department would look into the matter for ensuring early submission of ECs.

Recommendation 1:

Government should consider necessary amendments in the WBMMC Rules to ensure that if the successful bidder fails to submit EC within the prescribed period of six months then his contract is cancelled and such mining blocks are re-auctioned to prevent loss of revenue

2.9 Payment of bid money by the successful bidders

2.9.1 Amendment to the WBMMA Rules, 2016, leading to loss of revenue, in the form of non-recovery of bid money

Rule 10 of the WBMMA Rules, 2016, prescribed the procedure for grant of mining leases to successful bidders. Rule (10) (1) prescribed that the successful bidder shall pay 1/3 of the bid amount, after being so declared and the payment shall be made within 15 days of declaration of the successful bidder.

[149] *Bankura and Birbhum.*

[150] *The proposed annual production capacity of the mine lease area.*

[151] *Rate of royalty for sand @ 1.51 per cft.*

[152] *Rate of cess for sand @ 0.15 per cft.*

Rule (10) (2) prescribed that the rest of the bid amount (2/3) shall be payable in two equal instalments, before execution of the deed of lease.

However, Rule10 (2) was amended (May 2017) by the IC&E Department and the amended Rule prescribed that the successful bidders, who have deposited one-third of the bid money, may be allowed to commence mining operations and the lease deed may be executed. The balance amount of bid money (2/3) was payable in three instalments, with a gap of maximum of 45 days each, from the date of the first instalment, which was, in no case, to exceed the lease period or the closure of mining operations.

As a result of the amendment, successful bidders were allowed to commence mining operations/ execute mining deeds, without depositing the full bid amount.

Audit observed that, in 35 cases, in three districts[153], the successful bidders had paid 1/3rd of the total bid amounts and executed the lease deeds, without depositing the full bid amounts.

Audit further observed that, in 24 out of these 35 cases, the leases had expired between July 2022 and March 2023. However, the balance bid amount of ₹ 10.05 crore of 24 leases, had not been realised (between April 2022 and October 2022, when the Audit was conducted) (as detailed in ***Appendix -8***).

Deposit of the full bid amount, prior to execution of the lease deed, is crucial for protecting the financial interest of the Department. **The District authorities (DL&LROs) had failed to realise the balance bid amounts from the concerned bidders, which indicated deficient monitoring**.

Thus, the amendment offered undue advantage to the successful bidders and caused loss of government revenue.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that bid amount of ₹ 2.18 crore had been recovered and Public Demand Recovery cases would be initiated for recovery of balance bid amount where leases had expired.

2.9.2 Realisation of bid money from auctioned sand mining lessees

As per Rule 12 of the WBMMA Rules, 2016, simple interest, at the rate of 6.25 *per cent, was* to be charged, on any payment due to the State Government, for the period of delay, to be calculated on the expiry of 60 days from the date of such payment having become due.

Audit observed that, in 18 cases, in four selected districts[154], the successful bidders had deposited the first instalments of the balance 2/3rd bid amounts, on different dates, ranging between April 2017 and June 2022. These successful bidders were required to deposit the remaining amount within 90 days from the date of deposit of the first instalment. However, they had failed to deposit the amounts within due dates, resulting in short payment, amounting to ₹ 13.09 crore. **The DL&LROs had also failed to impose penalty, for the late payment of these instalments, resulting in loss of interest, amounting to ₹ 3.07 crore** (as detailed in ***Appendix -9***).

[153] *Birbhum, Purba Bardhaman & Purulia.*

[154] *Bankura, Birbhum, Purba Bardhaman & Purulia.*

In the Exit Conference L&LR and RR&R Department stated (July 2023) that bid amount of ₹ 4.58 crore had been realised from the sand lessees and instructions would be issued to the concerned DL&LROs for recovery of balance bid amount.

Good Practice

Sub-rules (1) & (4) of Rule 8 of the Gujarat Minor Mineral Concession Rules, 2017, prescribed that the bidders shall submit the first instalment of 20 *per cent,* within the time frame prescribed in the tender document and the second instalment of 80 *per cent* of the upfront payment, within 30 days of payment of first instalment. Further, upon such payment, the Government shall issue a written order for grant of the quarry lease. In the event of the bidder failing to make the second instalment within the prescribed period, an amount, equal to Performance Security shall be appropriated and the LoI shall become void.

Recommendation 2:

The Government should take necessary action against the concerned DL&LROs who failed to ensure collection of full bid amount. It should also consider necessary amendments in the WBMMA Rules, 2016, to ensure that mining operation should start only after execution of lease deed and full bid amount is collected before execution of the lease deed.

2.10 Assessment and Collection of Royalty and other dues

2.10.1 Realisation of royalty & cess from *in-situ* mines

Scrutiny of 28 *in-situ* mining lease files, in two[155] selected districts, revealed that the MOs, of the Birbhum and Purulia Zones had assessed royalty and cess for the mining leases and sent (between June 2020 and August 2022) the details to the concerned ADM and DL&LRO offices, for realisation of dues. Audit observed that, **in five cases, the authorities (DL&LROs) had recovered ₹ 2.41 crore, as royalty & cess, against the assessed amount of ₹ 2.85 crore. The concerned DL&LROs had not initiated action to realise the remaining dues.** This had resulted in non/short realization of royalty and cess of ₹ 44.48 lakh, till September 2022, as shown in **Table 2.1.**

Table 2.1: Non/short realization of royalty & cess, on *in-situ* mines

(in ₹)

Sl. No.	Details of the Lease	Name of mineral	Royalty & Cess realisable	Royalty & Cess realised	Non/short realisation of royalty & Cess
1.	Mouza- Duberdanga, JL. No.-5, Plot Nos.- 2691, 3366, PS- Gangajalghanti Area- 28.05 acres Dist- Bankura	Black stone	1,74,96,709	1,53,75,580	21,21,129
2.	Mouza- Dawanganj, JL. No. 36, PS- Md. Bazar, PO- N. Jagatpur, Plot No. 58, 62, 63, 73 Dist.-Birbhum, Area 11.70 acres	Black Stone	44,97,500	27,53,684	17,43,816

155 *Bankura & Birbhum.*

Sl. No.	Details of the Lease	Name of mineral	Royalty & Cess realisable	Royalty & Cess realised	Non/short realisation of royalty & Cess
3.	Mouza- Trachua, JL. No. 36, Plot Nos.-3943(P), 3944, 3945 & 3946(P), PS- Rampurhat Dist.-Birbhum Area 3.62 acres	Black stone	61,26,929	59,43,101	1,83,828
4.	Mouza- Brindabanpur, JL. No.-289, Plot Nos. 350, 350/817, 351(P) Dist- Bankura Area- 12.24 acres	China clay & Fire clay	1,53,670	0	1,53,670
5.	Mouza-Kanchalla-JL. No.-26, Plot No. 11 to 13 & 15 Dist- Bankura area- 4.99 acres	China clay	2,45,340	0	2,45,340
	Total		**2,85,20,148**	**2,40,72,365**	**44,47,783**

Reasons for the non/short recovery of royalty & cess were not available on record.

In the Exit Conference L&LR and RR&R Department stated that (July 2023) instructions would be issued to the concerned DL&LROs for recovery of dues.

2.10.2 Realisation of royalty on sand

The IC&E Department revised (13 January 2022) the rate of royalty of minor minerals, from ₹ 53 per cum (₹ 151 per 100 cft), to ₹ 106 per cum (i.e. ₹ 302 per 100 cft).

Scrutiny of cash books, mining lease files, the WBMDTCL portal and other relevant records, in six[156] selected districts, revealed that quarry permits, for 1.41 crore cft of sand, had been issued to 153 lessees, between 13 and 31 January 2022.

Audit observed that WBMDTCL had collected royalty @ ₹ 151 per 100 cft, instead of the revised rate of royalty @ ₹ 302 per 100 cft. WBMDTCL had not updated its portal, incorporating the revised rates and e-challans had been generated through portal automatically at the pre-revised rates. As a result, the State Government had been able to realise only ₹ 2.12 crore, instead of ₹ 4.24 crore, as shown in ***Appendix - 10***, resulting in loss of revenue of ₹ 2.12 crore.

> ***Recommendation 3:***
>
> ***Government should take necessary action against the erring officials of WBMDTCL responsible for delay in updating the rates in the portal. It should also ensure that the rates in the WBMDTCL portal are updated in real time basis to stop loss of revenue.***

2.10.3 Realisation of royalty and cess collected by other Departments, on behalf of the L&LR and RR&R Department

State Government Departments, like the Public Works Department; West Bengal State Rural Development Agencies (WBSRDAs); Zilla Parishads (ZPs); Irrigation & Waterways Department and Ministry of Railways, GoI; collect royalty from work executing agencies, on behalf of the L&LR and RR&R Department.

[156] *Bankura, Kalimpong, Paschim Bardhaman, Purba Bardhaman, Purba Medinipur & Purulia.*

In terms of Gazette Notification[157], the rate of royalty of minor minerals was revised (October 2016), with effect from the date of the notification (27 October 2016).

Audit verified 902 works executed by contractors, on behalf of the WBSRDA[158] in five[159] districts and on behalf of ZPs in two districts[160], during FYs 2017-18 to 2021-22, and noticed that these offices had deducted royalty and cess, at source, from the contractor's final bills, towards the volume of minor minerals (earth, sand, morrum *etc*.), consumed in different items of work.

Audit, however further, observed that these Zilla Parishads & WBSRDAs had deducted royalty at rates lower than the prescribed rate of ₹ 53.00 & ₹ 29.00 per cum, for sand and earth, respectively, from the bills of the concerned contractors. The concerned WBSRDAs and ZPs had sent details of those deductions, made on account of royalty and cess, to the concerned DL&LROs. **The DL&LROs had, however, failed to (i) check the correctness of the applicable rates of royalty/cess being deducted by those authorities and (ii) issue necessary instructions to arrest the trend of short collection of royalty/cess**. This had resulted in short levy and realisation of royalty amounting to of ₹ 3.62 crore, as shown in ***Appendix -11***.

The actual amount of short realisation may be higher, as necessary information had not been furnished by other departments (PWD and I&WD), though called for and the possibility of similar instances could not be ruled out.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the concerned DL&LROs for recovery of dues.

2.10.4 Extraction of minerals in deviation to mining plan

Rule 11 of the Mineral Conservation and Development (MCD) Rules, 2017, provides that every holder of a mining lease shall carry out mining operations in accordance with the approved mining plan, with such conditions as may have been prescribed. If the mining operations are not carried out as per the mining plan, the competent authority may order suspension of all or any of the mining operations. Under Section 21(5) of the MMDR Act, 1957, whenever any person raises, without any lawful authority, any mineral from any land, the State Government may recover the price[161] of the mineral, from such person.

Scrutiny of extraction reports and approved mining plans, in two[162] selected districts, revealed that 13 successful bidders, of long term sand mining leases, had extracted 3.36 crore cft of sand, in excess of the quantity that had been targeted under their approved mining plans, during FYs 2017-18 to 2021-22.

The price of minerals, amounting to ₹ 2.05 crore, was required to be recovered from the concerned lessees @ ₹ 227 per 100 cft (₹ 151×1.5)[163], on excess

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157 *No. 678 –CI/O/MIN/GEN-RLT/02/2015 dated 27.10.2016 of IC&E Department, GoWB.*

158 *West Bengal State Rural Development Agency (WBSRDA).*

159 *Bankura, Birbhum, Purba Bardhaman, Purba Medinipur & Purulia.*

160 *Birbhum & Purba Medinipur.*

161 *Price of any mineral is @ 1.5 times of the royalty last notified by the State Government.*

162 *Purba Medinipur & Purulia.*

163 *Rate of royalty of sand ₹ 151 per 100 cft.*

extraction of 3.36 crore cft of sand, as detailed in ***Appendix -12***. Audit observed that the district authorities (DL&LROs) had neither taken action to suspend the mining operations nor had they realised the price of the excess minerals so extracted.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the concerned DL&LROs for realisation of price of minerals.

2.10.5 Realisation of Dead Rent

As per Rule 2(f) of the WBMMC Rules, 2016, 'dead rent' is defined *as 'the amount to be paid annually by the lessee during the lease period, as may be prescribed by the State Government from time to time'*. Under Rule 35 (2) *ibid,* read with Section 12 of the MC Rules, 2016, the lessee is to pay, for every year, a yearly dead rent, provided that the lessee is liable to pay either the dead rent, or the royalty, in respect of each mineral, whichever is higher.

Audit observed that three[164] Mining Offices had assessed ₹ 32.12 lakh as dead rent of 18 mining lease holders of china clay, black stone, Quartz, Feldspar between January 2016 and March 2022, but the lessees had not paid any dead rent, upto September 2022.

Audit further observed that MO, Birbhum, had adopted the wrong method of calculation of dead rent, by multiplying the applicable rate of the annual dead rent with the available area in hectares[165], instead of acres. This had resulted in under assessment of dead rent, amounting to ₹ 21.84 lakh **(*Appendix-13)***.

Thus, the district authorities (DL&LROs) had failed to realise dead rent of ₹ 53.96 lakh (₹ 32.12 lakh + ₹ 21.84 lakh) from the lessees till date (November 2022).

2.10.6 Realisation of Surface Rent and Water Rate

Clause 1(c) of Rule 35 of Part-VI of the WBMMC Rules, 2016, provides that the lessee shall pay annually Surface Rent (SR), for the surface area used by him, for the purpose of the mining operations @ ₹ 90 per acre, or as fixed by the State Government, from time to time. The lessee is also required to pay annually, to the State Government, Water Rate (WR) @ ₹ 54 per acre, or as specified for the said purpose, from time to time.

Audit observed that 203 sand mining lessees, in three[166] districts, had not paid SR of ₹ 5.01 lakh and WR of ₹ 3.00 lakh, during FYs 2017-18 to 2021-22.

Thus, the district authorities (DL & LROs) had failed to realise SR & WR of ₹ 8.01 lakh (₹ 5.01 lakh + ₹ 3.00 lakh) from the lessees till date (November 2022).

This had resulted in non-realisation of revenue, in form of SR and WR, amounting to ₹ 8.01 lakh as shown in ***Appendix -14***.

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[164] *Mining Officers, Birbhum, Bankura & Purulia.*

[165] *One hectare = 2.471 acres.*

[166] *Bankura, Birbhum & Purulia.*

2.11 Realisation of royalty, cess and price of brick earth

2.11.1 Non/ short realisation of royalty and cess on earth, from brick field owners

Rule 35 of the WBMMC Rules, 2016 provides that the holder of a mining lease or any other mineral concession granted on or after the commencement of these rules, shall pay royalty in respect of mineral or minerals extracted at the rate as notified from time to time by the State Government through IC&E Department. The rates of royalty *(@ ₹ 82 per 100 cft.)* were fixed by IC&E Department in October 2016. In addition to the royalty, the lessee/contractor has to pay different types of cesses *(@ ₹ 15 per 100 cft.)* on extraction of minor minerals as per Cess Act 1880 (as amended in 1984). There were no enabling provisions in the WBMMC Rules, 2016 to ensure timely payment of royalty and cess by the lessees/ contractors. Payment schedule was also not prescribed in the said rules.

Audit test-checked brick field registers[167] and other relevant records, in five[168] DL&LROs and took up 802 cases for detailed scrutiny, out of 1,537 cases of extraction of earth. Out of these, in 230 cases, the concerned brick field owners had extracted 4.20 crore cft of earth, between FYs 2017-18 and 2021-22. Details of non/short realisation of royalty[169] and cess[170], on brick earth in these 230 cases, are shown in **Table 2.2**.

Table 2.2: Non/short realization of royalty & cess on brick earth

Sl. No.	Nature of irregularities	No. of cases	Quantity of earth extracted (cft in crore)	Royalty & cess to be recovered (₹ in crore)	Royalty & cess recovered (₹ in crore)	Non/short recovery of royalty & cess (₹ in crore)
1	2	3	4	5	6	7=5-6
1.	Non-recovery of royalty & cess	166	2.87	2.79	Nil	2.79
2.	Short-recovery of royalty & cess	64	1.33	1.28	0.72	0.56
Total		**230**	**4.20**	**4.07**	**0.72**	**3.35**

(Source: Brick field records of district offices)

The concerned DL&LROs had failed to realise these dues, resulting in non/ short realization of royalty and cess, amounting to ₹ 3.35 crore, as detailed in ***Appendix -15***. Reasons for non/short recovery of royalty and cess of earth, were not found available on records.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the concerned DL&LROs for realisation of royalty and cess on brick earth.

[167] *District Authority maintained a register of mining lease in respect of minor minerals in every district showing Sl. No., Name of lessee, Mouza with JL No., Area, year, Quantity etc.*

[168] *Bankura, Birbhum, Paschim Bardhaman, Purba Bardhaman & Purba Medinipur.*

[169] *The rate of royalty for brick earth is ₹ 82 per 100 cft.*

[170] *The rate of cess for brick earth is ₹ 15 per 100 cft.*

2.11.2 Realisation of the price of earth, from brick field owners without valid permits

Under Section 21 of the MMDR Act, 1957, read with Rule 50 of the WBMMC Rules, 2016, whenever any person removes, without any lawful authority, any mineral, from any land, the State Government may, apart from penal actions like seizure, confiscation, eviction, imprisonment *etc*., recover from such person the mineral so removed, or, where such mineral has already been disposed of, the price thereof. Accordingly, the State Government fixed (March 2018) the price of earth at ₹ 123 per 100 cft, which is 1.5 times the royalty[171] for extraction or removal of the earth.

Audit checked the brick field registers and other relevant records, in six DL&LROs[172] and took up 2,139 cases for scrutiny, out of 3,498 cases pertaining to extraction of earth. Out of these, in 1,272 cases, the concerned brick field owners had extracted 20.14 crore cft of earth, between FYs 2017-18 and 2021-22, without being in possession of valid permits.

However, the authorities (DL&LROs) had not taken action to stop such unauthorised extraction nor had they initiated penal action, in terms of extant rules. Moreover, the authorities (DL &LROs) had recovered only ₹ 5.29 crore, as the price of earth (@ ₹ 123 per 100 cft), out of the total amount of ₹ 24.77 crore, recoverable for this unauthorised extraction of earth. This had resulted in non/short recovery of ₹ 19.48 crore ***(Appendix -16)***, as shown in **Table 2.3**.

Table 2.3: Non/short recovery of the price of earth

Sl. No.	Nature of irregularity	No. of cases	Quantity of earth extracted (cft in crore)	Price of earth to be recovered (@ ₹ 123 per 100 cft) (₹ in crore)	Price of earth recovered (₹ in crore)	Non/short recovery of earth (₹ in crore)
1	2	3	4	5	6	7=5-6
1.	Non-recovery of price of earth	918	13.86	17.05	Nil	17.05
2.	Short-recovery of price of earth	354	6.28	7.72	5.29	2.43
Total		**1,272**	**20.14**	**24.77**	**5.29**	**19.48**

(Source: Brick field records of district offices)

Reasons for non/short recovery of price of earth were not found available on records. Similar observations had been made in previous C&AG's Audit Reports (2013-14 to 2018-19)[173]. However, remedial measures have not yet been taken, by the L&LR and RR&R Department, to curb such irregularities, as was evident from the preceding facts.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the concerned DL&LROs for realisation of price of brick earth.

[171] *The rate of royalty for brick earth is ₹ 82 per 100 cft.*

[172] *Bankura, Birbhum, Jhargram, North 24 Parganas, Paschim Bardhaman & Purba Bardhaman.*

[173] *Para No. 7.7 of AR 2013-14, Para No. 6.4.18 of AR 2014-15, Para No. 6.4 of AR 2015-16, Para No. 6.4 of AR 2016-17, Para 7.5 of AR 2017-18 and Para 6.4 of AR 2018-19.*

2.12 Levy of penalty due to short extraction of minerals

In terms of Rule 21(1)(e) of the WBMM Rules, 2002, read with Clause 3(b) of Part-VII of the model lease deed[174] of minor minerals, lessees are to extract and despatch the minimum quantity of minerals from the leasehold area per annum, failing which penalty, of double the amount of royalty that should have accrued on the shortfall quantity, is to be realised from the concerned lessees, at the end of the year.

Audit observed that two of the 18 lessees, in two[175] districts had extracted 2.51 lakh cubic meters of black stone, between FYs 2017-18 and 2021-22, against the minimum prescribed quantity of 11.90 lakh cubic meters, as per the lease deeds. Both the lessees were required to pay penalty for this short extraction of minerals, which was twice the amount of royalty that should have accrued. The district authorities (DL&LROs) had, however, neither levied penalty for the short extraction of 9.39 lakh cum black stone, nor issued demand notices for realisation of such penalty.

This had resulted in non-levy of penalty, that was due on account of short extraction of minerals, along with consequent non-realisation of revenue of ₹ 9.95 crore, as shown in ***Appendix -17***.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the concerned DL&LROs for realisation of dues.

2.13 Non-realisation of revenue, due to non-initiation of certificate proceedings

Under clause 5, under Part-VI of the WBMMC Rules, 2016, read with sub-section 1 of Section 25 of the MMDR Act, 1957, if any royalty or rent remains, at any time, unpaid for three calendar months after the date on which it is due, the Government may determine the lease and take possession of the premises comprised thereon. These rights shall be without prejudice to the right of the Government/ District Authority to realise the dues, under the BPDR[176] Act, 1913. The process prescribed in the Act, to recover the assessed dues remaining unpaid, is referred to as 'certificate proceedings'.

Audit observed that, in two [177] selected districts, there were six (out of 146) cases of non- observance of rule provisions, which had resulted in non- realisation of Government revenue, as discussed below:

i. Quarry Permits, for removal of total 26.80 lakh cft of black stone, were issued in favour of a lessee[178], in Birbhum, between FYs 2010-11 and 2015-16. As per the measurement report of the BL&LRO, Md. Bazar, the lessee had removed 62.32 lakh cft of black stone. Thus, the lessee had extracted 35.52 lakh cft of black stone, in excess. The district authorities

[174] *A Lease Deed attached with WBMM Rules, 2002 and lessees had to execute their lease deed accordingly.*

[175] *Birbhum & Purulia.*

[176] *Bengal Public Demands Recovery (BPDR).*

[177] *Bankura & Birbhum.*

[178] *M/s Kariya Nimdaspur Stone (Gitty) Quarry, proprietor Shri Dilip Kumar Pal, Mouza-Karaya, JL. No. 89, area- 9.95 acres PS- MD Bazar, Dist.-Birbhum.*

(DL&LRO) imposed (January 2021) penalty of ₹ 3.55 crore, which the lessee had not paid till May 2022.

ii. As per the measurement (March 2016) done by the Birbhum district authorities (DL&LRO), a black stone mining lease holder[179] had extracted 11.02 lakh cft of black stone, in excess. The district authority (DL&LRO) had issued demand notice (March 2016) to the lessee, directing it to pay ₹ 13.66 lakh towards royalty and cess. The lessee had paid total amount of ₹ 9.00 lakh in two instalments (November 2020), against this demand notice. However, the balance dues of ₹ 4.66 lakh had not been realised from the lessee, till date (May 2022) by the DL&LROs.

iii. There were mining dues of ₹ 52.35 lakh, for extraction of 31.35 lakh cft of sand, from four[180] lessees, for the period between June 2020 and March 2021, in Bankura district. The district authorities (DL&LRO) had issued demand notices (February 2022) to the lessees, but the amount had not been realised (as of July 2022).

The district authorities (DL&LROs) had neither instituted a periodic review and monitoring mechanism, to ensure prompt realisation of assessed dues, nor had they initiated certificate proceedings, to realise the dues under the BPDR Act, 1913, even after lapse of 16 to 25 months. Thus, inaction on the part of the DL&LROs, resulted in non-realisation of revenue of ₹ 4.12 crore.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the District Offices for speedy initiation of certificate cases.

Recommendation 4:

Government should take action against the concerned DL&LROs who failed to follow the extant rules. It should also ensure that certificate proceedings are initiated, as soon as the period of three months gets elapsed, to enhance the chances of revenue realisation.

2.14 Management of District Mineral Foundations

Section 9B of the MMDR Act, 1957, provides for the establishment of District Mineral Foundation (DMF) Trusts. The West Bengal District Mineral Foundation Rules, 2016 (WBDMF), were framed (July 2016) to regulate the constitution and functioning of the DMF in each district of the State. The DMF is expected to function as a non-profit body, to work for the interest and benefit of persons and areas affected by mining related operations. The Ministry of Mines (GoI) notified[181] (September 2015), the amount to be paid to the DMF, by the concession holders, for minor minerals, at the rate of:

(a) ten *per cent* of the royalty, in respect of mining leases granted on or after 12 January 2015, and

[179] *Sk. Salauddin, Vill- Patharchal, PO- Harinsingha, PS- Md. Bazar, Dist- Birbhum.*

[180] *M/s Sanjoy Shit, sand block-0108DR020 (₹ 15,06,340); M/s Shomuk Consultancy Services Private Limited, sand block code-0121DM002 (₹ 3,85,770); M/s Uttam Kr. Pal, sand block code-0118DR004 (₹ 26,72,840); and M/s Pal Enterprise, sand block code-01108DR029 (₹ 6,70,510).*

[181] *Gazette of India, Notification No. G.S.R. 715(E) dated 17.09.2015.*

(b) thirty *per cent* of the royalty, in respect of mining leases granted before 12 January, 2015.

The DMF is to be managed by a Governing Council, which is to consist of all the Members of the Foundation. The day-to-day management of the Foundation is to be managed by a Managing Committee, the constitution of which is to be decided upon by the State Government. Records provided by seven[182] district offices, revealed several deficiencies in the compliance of extant provisions, in the management of the DMFs, as discussed in the paragraphs.

2.14.1 Formation of District Mineral Foundations (DMFs)

The WBDMF Rules mandated (July 2016) constitution of DMFs in each district of the State. However, no specific time line for this purpose, was recommended in the rules. Rule 7 of the WBDMF Rules, 2016, provides that the State Government shall appoint the Trustees as the Trustees of Foundation[183]. The records of the seven selected districts revealed that six districts[184] had executed deeds of trust, between July 2018 and March 2022, after a period ranging from 24 months to 69 months, since the time the WBDMF Rules, 2016, had come into effect. It was further observed that, in one district[185], no deed of trust had been executed till March 2022. As the trustees are responsible for drawing and approving the Annual Action Plan and the Annual Budgets, for functioning of the Foundations, delay in the execution of DMF trust deeds hampered the overall functioning of the foundations.

2.14.2 Preparation of Annual Reports of DMFs

Rule 13 of the DMF Rules provides that the Managing Committee is required to place an Annual Report, in respect of the activities undertaken with the funds available with the DMF, within 60 days of close of the financial year, before the Governing Council of the Foundation. A copy of Annual Report is to be sent to the concerned District Magistrate (DM) and to the IC&E Department, within 30 days from the date of its approval.

However, Audit observed that none of the Managing Committee of the seven selected districts had prepared such annual reports. As a result, the concerned DMs, as well as the IC&E Department, were unaware of the activities undertaken out of the funds of the respective DMFs.

2.14.3 Payment of administrative expenses for working of DMFs

Under section 5(2C) of WBDMF Rules, 2016[186], provided that payment of administrative expenses, necessary for the working of DMFs, should not exceed six *per cent* of the total funds received in a financial year.

Five, out of the seven selected districts, could not provide information regarding utilisation of the respective DMF funds. Information made available

[182] *Bankura, Birbhum, Kalimpong, Paschim Bardhaman, Purba Bardhaman, Purba Medinipur & Purulia.*

[183] *District Magistrate as Chairperson, Additional District Magistrate and DL&LRO as member Convener and other members included from SDOs and officials of other Departments.*

[184] *Bankura, Birbhum, Kalimpong, Paschim Bardhaman, Purba Medinipur & Purulia.*

[185] *Purba Bardhaman.*

[186] *Sub-rule 2(C) of rule 5.*

by the two other districts[187], showed the following cases of non- compliance in this regard:

i. In Bankura, administrative expenses[188] of ₹ 35.07 lakh had been incurred during FY 2017-18, against the total funds of ₹ 1.58 crore received. This constitutes 22.25 *per cent of* the total annual DMF funds received.

ii. In Purulia, administrative expenses of ₹ 21.51 lakh had been incurred during FY 2020-21, against the total funds of ₹ 85.14 lakh received. This constitutes 25.26 *per cent* of the funds received.

Thus, the administrative expenditure incurred by these district authorities (DMs) was in excess of the stipulated percentage, which was in violation of the WBDMF Rules, 2016.

2.14.4 Utilisation of DMF Funds

Under Rules 5 (a) & (b) of the WBDMF Rules, 2016, the object and functions of the foundation were to work for the interest and benefit of persons affected by mining related operations, as also to work for the areas affected by mining related operations.

Test-check of records, made available by the DL&LRO revealed that, in Bankura, ₹ 48.74 lakh had been incurred from DMF funds by the concerned DM, for purposes not envisaged in the rules, as shown in **Table 2.4**.

Table 2.4: Utilisation of DMF Funds

Sl. No.	Purpose of Utilisation	DM's payment order dated	Amount (in ₹)
1	Repair and renovation of bathroom at ground floor of administrative building, Collectorate, Bankura.	22.07.2022	4,62,622
2.	Supply and installation of split AC, 2 ton, Samsung Machines	14.07.2022	4,95,000
3.	Repair and renovation of bathroom and toilet at ground floor of administrative building, Collectorate, Bankura.	28.06.2022	4,08,655
4	Renovation of tourism kiosk	23.06.2022	2,00,000
5	Upgradation of 2nd coat at Bankura Sports Club	14.06.2022	2,80,000
6	Construction of boundary wall at Bankura Club	26.05.2022	4,95,524
7	Installation of solar lamps for the weavers within Bishnupur Municipality	24.05.2022	18,74,130
8	Repair and renovation of office chamber and side passage room of CA room of ADM (General), Bankura	12.02.2022	6,48,435
9	Servicing and re-installation of AC at ADM (LR) Bunglow, Bankura	10.05.2022	9,532
	Total		**48,73,898**

(Source: DMF files and register)

The objectives of setting up the fund were, therefore, defeated to that extent, as these funds should have been utilised for the benefits of persons affected by mining related operations.

[187] *Bankura and Purulia.*

[188] *Expencess incurred in computer & printer, furniture, stationery, telephone bill, electrical installation, software, repairing on building, wheel clamp etc.*

Recommendation 5:

Government may initiate action against the official responsible for diversion of the DMF Funds. It may also ensure that DMF Funds are not diverted for other purposes and are utilised invariably as per the WBDMF Rules.

2.15 Adequacy and effectiveness of Internal Controls

The internal control mechanism is intended to provide reasonable assurance in regard to proper enforcement of laws, rules and departmental instructions.

Internal controls also help in the creation of reliable financial and management information systems, for prompt and efficient delivery of services, as also for adequate safeguards against evasion of Government revenue.

Deficiencies in the internal control mechanism, relating to operational control are discussed in the following sub-paragraphs:

2.15.1 Submission of Monthly returns

Clause (3), under Part-VI of the WBMMC Rules, 2016, provides that the accounts for each month, in respect of raising[189], stock, sale, dispatch, local consumption, royalty and rent due and paid, shall be completed within 15 days of the month following and true copy of each, duly signed by the Lessee/Lessees or his/their/its authorised agent, shall be sent to: (i) the Chief Mining Officer, Asansol, (ii) the Mining Officer concerned, (iii) Commerce and Industries Department, State Government and (iv) District Authority, within seven days' thereafter. Further, as per Clause (6), under Part-IX *ibid,* in case of a breach of the aforesaid clauses, by way of late submission of returns within the specified time, the lessee shall be liable to pay a penalty of ₹ 100 per day, after expiry of the prescribed date.

Audit observed only 348 monthly returns had been submitted, as against the 32,520 monthly returns actually due for submission by the lease holders, during FYs 2017-18 to 2021-22, in the seven selected districts, as detailed in **Table 2.5**.

Table 2.5: Submission of monthly returns by mining lease holders

Sl. No.	District	Number of lessees	Number of monthly returns to be submitted during 2017-22	Number of monthly returns actually submitted during 2017-22
1	Birbhum	154	9,240	240
2	Bankura	141	8,460	108
3	Paschim Bardhaman	33	1,980	0
4	Purulia	55	3,300	0
5	Purba Bardhaman	146	8,760	0
6	Purba Medinipur	9	540	0
7	Kalimpong	4	240	0
Total		**542**	**32,520**	**348**

(Source: Mining lease files of district offices)

[189] *Raising: – extraction of minerals.*

Reason for non-submission of these monthly returns were not available on records. The authorities (DL&LROs) had also not levied penalties, for non-submission of these returns.

Audit also observed that the district authorities[190] had not monitored the receipt of returns and had also failed to initiate action against such lessees. In the absence of submission of prescribed returns by the lessees, the Department was not in a position to verify the quantity of minerals excavated or to assess the amount of royalty, thus payable by the lessees.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that at present the lessees are regularly submitting the return on WBMDTCL portal.

2.15.2 Inspection of Mining Sites

Under Rule 6 of the WBMPIMTS Rules, 2002, an authorised officer of the State Government may, at any time, visit the stores, and inspect the minerals kept in the stores with reference to the entries made in the registers/bin card[191]and, after inspection/checking of minerals, the authorised officer is required to record such visits on the relevant page(s) of the stock register. The authorised officer has the power to seize any mineral, the record of which is not found in the stock register.

Audit observed that inspections had not been carried out by the departmental authorities (Mining Officers), during FYs 2017-18 to 2021-22.

Lack of inspections by Mining Officers implied non-verification of the actual quantity of minerals being excavated/ dispatched, which carried the risk of under-reporting of the minerals excavated, leading to lower collection of revenue, in the form of royalty/cess.

2.15.3 Establishment of Check Posts

In exercise of the powers conferred under Section of 23C of the MMDR Act, 1957, the State Government notified (November 2002) the West Bengal Minerals Prevention of Illegal Mining, Transportation and Storage (WBMPIMTS) Rules, 2002, for preventing illegal mining, transportation and storage of minerals. As per the rules, with a view to checking the transport and storage of minerals raised without lawful authority, check posts and barriers were to be established for weighment and inspection of minerals in transit.

However, Audit observed that check posts had not been established in the seven[192] selected districts (as of March 2022). During Exit Conference, the Department stated (June 2023) that surprise checking and raids were more effective than establishment of check posts. It implied that no system has been instituted to prevent illegal transportation of minerals and to ascertain the exact quantity of minerals being transported. Audit revealed instances of extraction of minor minerals in excess of the approved mining plan in two selected districts resulting in loss of revenue ***(Paragraph 2.10.4)***.

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[190] *District authorities:-In case of in-situ mines CMOs or MO and in others mines DL&LROs.*

[191] *Bin card is a quantitative record of material received, issued and balance.*

[192] *Bankura, Birbhum, Paschim Bardhaman, Purba Bardhaman, Purba Medinipur, & Purulia.*

Thus, the possibility of leakage of Government revenue, due to illegal mining and transportation of excess minerals, could not be ruled out.

> ***Recommendation 6:***
>
> ***Government should ensure timely submission of monthly returns by mining lease holders, as well as inspection of mining sites by mining officers, for initiating timely action on the deficiencies noticed therein. It should also consider setting up check posts at important locations to discourage illegal transportation of minerals.***

2.16 Environment Impact Assessment

Environment Impact Assessment (EIA) is a planning tool for integrating environment concerns into the developmental process, starting from the initial stages of planning. Under the EIA Notification, 2006, and its subsequent amendments, all projects and activities, pertaining to mining of minor minerals, are broadly categorised into two categories - Category A (≥ 50 ha) and Category B(<50 ha) based on the spatial extent of the potential impact, as also the potential impact on human health and natural and man-made resources. All the selected 811 sand mines fall under B Category while out of 74 *in-situ* mines one mine falls under A category. Further, projects, having lease area upto 5 ha, require prior Environment Clearance (EC) from the District Environment Impact Assessment Authority (DEIAA) and projects that had lease area more than 5 ha and upto 50 ha, require clearance from the State Level Environment Impact Assessment Authority (SEIAA). For category A projects having lease area more than 50 ha require EC from the MoEF, GoI.

Chapter-V of the WBMMC Rules 2016, which deals with the environmental aspects of mining, mandates [under sub-rule (2) of Rule 33] that every successful bidder/holder of a mining lease, shall submit the EC to the DEIAA/SEIAA, as the case may be, within six months from the date of issue of Letter of Intent (LoI). The WBMMA Rules, 2016, further mandate (sub-rule 4 & Rule-10) that the Mining Lease Deed is to be executed within thirty days of the date of completion of the conditions specified in Chapter V of the WBMMC Rules 2016.

Audit observed the following discrepancies, in the seven selected districts, in this regard:

2.16.1 Delay in submission of Environment Clearances (ECs)

In three[193] districts, the due dates of submission of ECs were between July 2016 and September 2018. However, eight lessees out of 382 had submitted ECs after the prescribed period of six months, with delays ranging from 24 to 272 days, as shown in **Table 2.6**.

[193] *Bankura, Birbhum & Paschim Bardhaman.*

Table 2.6: Delayed submission of Environment Clearances (ECs)

Sl. No.	Auction ID	District/Block	Date of issue of LOI	Due date of submission of EC	Date of submission of EC	Delay in submission of EC (in days)
1	2018_WB_800	Bardhaman(W) /Kanksha	16.03.2018	15.09.2018	09.10.2018	24
2	2017_DMBUW_300	Bardhaman(W) /Andal	11.04.2017	10.10.2017	22.11.2017	43
3	2017_DMBUW_269	Bardhaman(W) /Kanksha	20.03.2017	19.09.2017	22.11.2017	64
4	2017_DMBUW_732	Bardhaman(W) /Kanksha	09.01.2018	08.07.2018	09.10.2018	93
5	2016_DMBWB_133	Bankura/Onda	03.04.2017	02.10.2017	02.02.2018	123
6	2017_DMB_72	Birbhum/Nanoor	26.01.2017	25.07.2017	01.12.2017	129
7	2016_DMB_64	Birbhum /Illambazar	09.01.2016	08.07.2016	05.04.2017	271
8	2017_DMBUW_260	Bardhaman(W) /Barabani	09.03.2017	08.09.2017	07.06.2018	272

(Source: Sand mining auction records of district offices)

As evident from **Table 2.6**, the district authorities (DL&LROs) had not objected regarding delay for more than six months for submission of ECs by some lessee. This had resulted in consequent delays in commencement of mining operations and collection of Government Revenue.

Audit further observed that, in two districts[194], seven mining lease deed holders had submitted the ECs to the district authorities (DL&LROs), after execution of lease deeds, with delay ranging from 1 to 346 days, as shown in **Table 2.7**.

Table 2.7: ECs issued after the date of execution of lease deed

Sl. No.	Auction ID	Name of Block/ District	Date of lease deed registration	Date of ECs issued	ECs issued after lease deed (in days)
1	2016_DMBWB_26	Onda/Bankura	24.10.2016	27.10.2016	3
2	2016_DMBWB_73	Joypur/Bankura	07.03.2016	16.02.2017	346
3	2017_WB_337	Patrasayer/Bankura	27.04.2018	03.05.2018	6
4	2016_DMPWB_30	Puncha/Purulia	21.02.2018	28.02.2018	7
5	2017_DMPWB_73	Joypur/Purulia	15.09.2017	21.09.2017	6
6	2017_DMPWB_79	Santuri/Purulia	20.09.2017	21.09.2017	1
7	2017_DMPWB_51	Jhalda/Purulia	27.03.2017	26.07.2017	121

Such cases not only constituted a violation of the WBMMA Rules, 2016, but were also indicative of the inadequate priority accorded to environmental aspects.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the District Authority not to execute lease deed before submission of EC

2.16.2 Non-submission of Environment Clearances (ECs)

Audit observed that in two[195] districts, LoIs had been issued to 353 lessees, between January 2017 and June 2019. These lessees were required to submit ECs between July 2017 and December 2019. However, 41 of these lessees had not submitted ECs upto March 2022, in violation of the provisions of Rule 33 of the WBMMC Rules, 2016, as shown in ***Appendix - 18.***

[194] *Bankura & Purulia.*

[195] *Bankura & Birbhum.*

2.16.3 Submission of environment compliance reports

MoEF&CC had mandated[196] that the project proponents submit six-monthly reports, on the status of compliance of the conditions stipulated in the ECs, including results of the monitored data, to the regulatory authority,[197] in June and December of each calendar year. The project proponents were also required to submit yearly environment statements in Form-V, for each financial year ending 31 March, to the regulatory authorities, i.e. DEIAA/*SEIAA, WBSPCB, Regional Office (RO) of the MoEF&CC and Zonal Office of the CPCB.*

Audit observed that none of the 333 mining lease holders, in five districts[198], had submitted annual or half-yearly compliance reports (as of March 2022).

Audit further noticed that, in Purulia, the DEIAA had issued (August 2017) an order regarding submission of yearly and half-yearly compliance Reports, in response to which, only nine out of 55 lessees had submitted half-yearly compliance reports (as of September 2022). In Birbhum, the DEIAA had issued (August 2018) a similar order, but no such report had been submitted (as of March 2022).

In the absence of environmental compliance reports, the regulatory authority (DEIAA) could not keep an effective watch over the various aspects of the operations of the projects including probable compromises in the quality of environmental parameters; discharge of pollutants; management of hazardous and solid wastes; and consumption of water and raw material *etc*.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that instructions would be issued to the DL&LROs to monitor the submission of compliance reports.

Thus, from the above it was evident that **neither the departments (L&LR and IC&E) nor the environment regulatory authorities (WBPCB/DEIAA) had been diligent in ensuring necessary compliance of the environment related regulations mentioned in EIA notification.** Further, none of the departments/ Authorities (L&LR and RR&R, IC&E, Irrigation and Waterways, WBPCB and West Bengal Bio-Diversity Board) conducted any study regarding impact of existing mining activities on health of habitat, biodiversity, water quality, land degradation, including environmental hazards.

2.16.4 Non-observance of National Green Tribunal orders

National Green Tribunal, Eastern Zone Bench, Kolkata, had directed (February 2015) the respective District Magistrates (DMs) to prepare a list of unauthorized brick kilns which were operating without Consent to Operate (CTO) from the West Bengal Pollution Control Board (WBPCB). It also directed the WBPCB to take appropriate action in accordance with the law and ensure closure of such unauthorized units.

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[196] *Vide circular No. J-11013/41/2006-IA. II (I) dated 30 June, 2009.*

[197] *District Environment Impact Assessment Authority (DEIAA), State Environment Impact Assessment Authority (SEIAA), West Bengal Pollution Control Board (WBSPCB), Regional Office (RO) of Ministry of Environment, Forest and Climate Change (MoEFCC) and Zonal Office of Central Pollution Control Board (CPCB).*

[198] *Bankura, Kalimpong, Paschim Bardhaman, Purba Bardhaman & Purba Medinipur.*

During course of audit, no records were found to suggest whether such lists were prepared by the concerned DL&LROs or any action was taken by WBPCB. However, scrutiny of the records of seven selected districts revealed that 991 (52 *per cent*) out of the total 1891 brick kilns were unauthorized (without CTO/EC) as of March 2022. **Presence of unauthorized brick kilns in these districts is indicative of the fact that authorities (DMs and WBPCB) are not prioritizing closure of such unauthorized units, in order to prevent environmental hazards**.

Recommendation 7:

Government should ensure timely submission of the prescribed reports on the status of compliance of the EC conditions, to the regulatory authority (DEIAA).

2.17 Sustainable consumption and production patterns in mining activities (SDG 12)

An agenda for implementation of 17 Sustainable Development Goals (SDGs) and 169 associated targets by 2030, had been adopted (September 2015) by all United Nations Members. SDG 12, set out in this agenda, aims ensuring sustainable consumption and production patterns. It aspires to achieve the sustainable management and efficient use of natural resources.

The key areas involved in working on targets associated with SDG 12 include efficient management of natural resources like land, water, and air; limiting the generation of toxic waste and pollutants and their safe disposal; and adoption of sustainable consumption practices in public as well as private spheres. Thus, stakeholders like industries, businesses and consumers play a large part in achieving SDG 12.

The Department of Planning and Statistics & Programme Monitoring, Government of West Bengal, is the Nodal Department for implementation of work relating to SDG 12. As the Nodal Department, it was required to follow–up and review the implementation of this agenda and its achievements against the targets set out in SDG 12. However, the Nodal Department stated (January 2023) that, the action taken report on SDG 12 was not available with it. This indicated that Nodal Department was not ensuring effective implementation of the SDG 12 program.

2.18 Availability of manpower

The Directorate of Mines and Minerals (DMM) was established in 1957, under the Commerce and Industries Department, GoWB. It was entrusted with the responsibility of ensuring systematic and scientific exploration, exploitation of mineral resources of the State, promoting mineral-based industries for encouraging employment generation and increasing revenue earning.

It carries out geological studies, as well as exploration and drilling work, to establish mineral deposits in the State. It processes Reconnaissance Permits (RPs)[199]/Prospecting Licences (PLs)[200]/Mining Lease (ML)[201] applications

[199] *If includes any operations undertaken for preliminary prospecting of a mineral, through regional, aerial, geophysical or geochemical surveys and geological mapping, but does not include pitting, trenching, drilling*

[200] *Licences granted for undertaking prospecting operations, for the purpose of exploring, locating or proving mineral deposits.*

[201] *A legal contract for the right to work a mine and extract minerals or other valuable deposits from it, under prescribed conditions.*

and monitors mining activities. It advises the State Government on the implementation of mineral rules, to strengthen the mineral administration.

The cadre-wise sanctioned posts, *vis-a-vis* men-in-position, between January 2017 and April 2022, is detailed in **Table 2.8**.

Table 2.8: Status of manpower in the DMM

As on	Category of posts							
	Group A				Group B			
	Sanctioned post	Men-in-position	Vacancy	vacancy *per cent*	Sanctioned post	Men-in -position	Vacancy	Vacancy *per cent*
01.01.2017	39	21	18	46.15	68	34	34	50.00
01.01.2018	39	17	22	56.41	68	25	43	63.24
31.03.2019	39	15	24	61.54	68	22	46	67.65
01.01.2020	39	13	26	66.67	68	22	46	67.65
08.01.2021	39	17	22	56.41	68	18	50	73.53
18.04.2022	39	17	22	56.41	68	18	50	73.53

- The overall vacancy position in Group A technical posts[202], ranged from 46.15 to 66.67 *per cent,* against the sanctioned strength of 39, in the State, during January 2017 and April 2022.
- Vacancies ranged from 50 to 73.53 *per cent,* against the sanctioned strength of 68, in Gr. B category technical posts[203], in the State, during January 2017 to April 2022.

Recommendation 8:

The Department should undertake a comprehensive exercise for Human Resource augmentation and deployment, for ensuring proper regulation and monitoring of mineral exploration and development in the State.

2.19 Application of Geographic Information System (GIS)

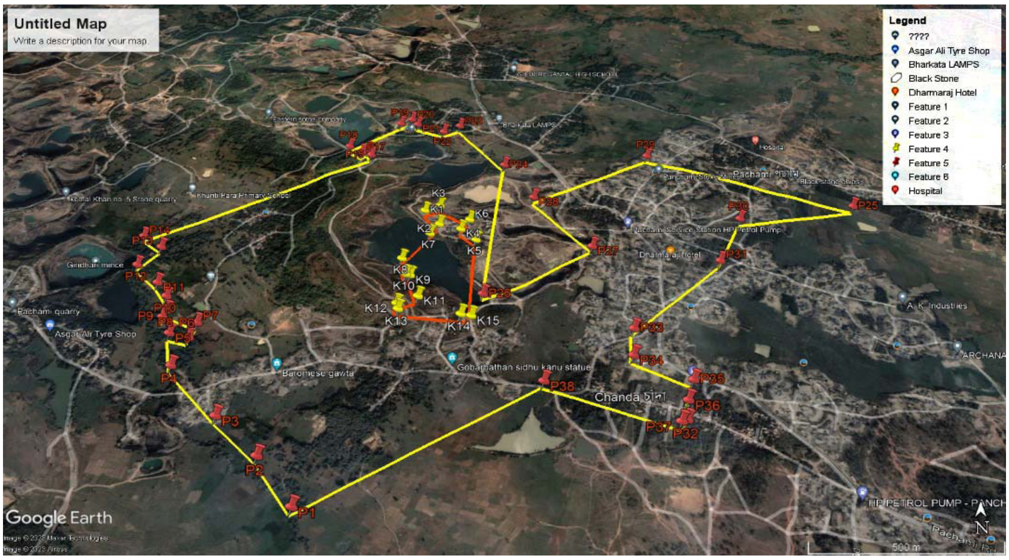
Audit plotted the Coordinates of 61 approved mining plans, provided by the IC&E Department, in the Google Earth Pro Software. The satellite images (April 2017 to September 2022), obtained from the Google Earth Pro Software, were analysed, to search for unusual activities relating to mining. Observations based on this exercise are discussed in paras 2.19.1 to 2.19.4 below:

2.19.1 Overlapping coordinates

Coordinates of mining plans were geo-referenced, using the Google Earth Pro Software and it was observed that, in two mines i.e. Pachami Black stone mine (WBMDTCL) and Kamal Khan Black Stone quarry, in Birbhum District, the approved mining areas were overlapping, as shown in **Fig 2.1**. This indicates that the Department had not verified the coordinates of said mines before approving the mining plans. In such a situation, the possibility that lessees may have been carrying out activities in non-approved areas/zones, cannot be ruled out.

[202] *Mining Officer, Geologist, Mineral Chemist, Drilling Engineer, Driller and Inspecting Officer.*

[203] *Assistant Driller, Investigator, Inspector, Mechanic, Draftsman, Underground Surveyor and Surveyor.*



Yellow Outline– Pachami Black stone mine (West Bengal Minerals Dev. & Trading Corp. Ltd) Red outline – Kamal Khan Black Stone quarry.

Fig 2.1: Overlapping Mining areas

2.19.2 Verification of Khasra Map

Audit observed, in one case[204], that the approved mining area did not match with the shape in the Khasra Map, attached with the mining agreement. This indicated that **the concerned Minning Officer had not verified the coordinates of the mining area, with the Khasra map, before approving these mining plans.** In such a situation, the lessees may have been carrying out mining activities in non-approved areas/zones. **Figs 2.2 & 2.3** show the Khasra map co-ordinate boundary of the lessees.

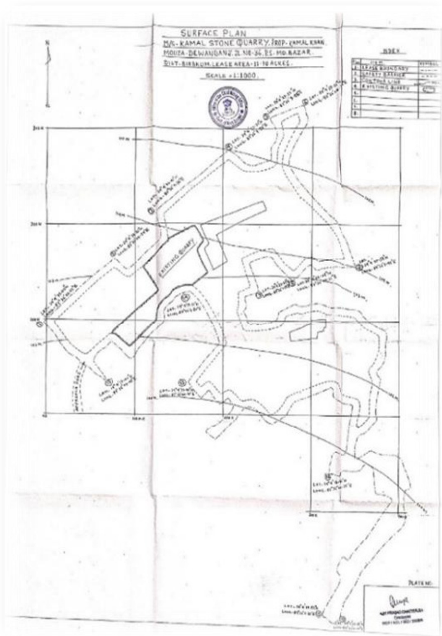


Fig-2.2	***Fig-2.3***

Figs 2.2 & 2.3: Khasra map & Coordinates map

[204] *Kamal Khan Black Stone quarry, Birbhum District.*

2.19.3 Verification of co- ordinates, before approval of mining plans

Audit plotted the co-ordinates, as per the approved sand mining plans, in the google earth pro software, in seven selected DL&LROs and observed, in the instant case[205], that the area under mining was 18 ha, as against 2.09 ha, which was to be allotted to the lessee, as per the approved Mining Plan. Thus, in such a situation, the lessees may have been carrying out mining activities **in an additional 15.91 ha**, as shown in **Fig 2.4**.

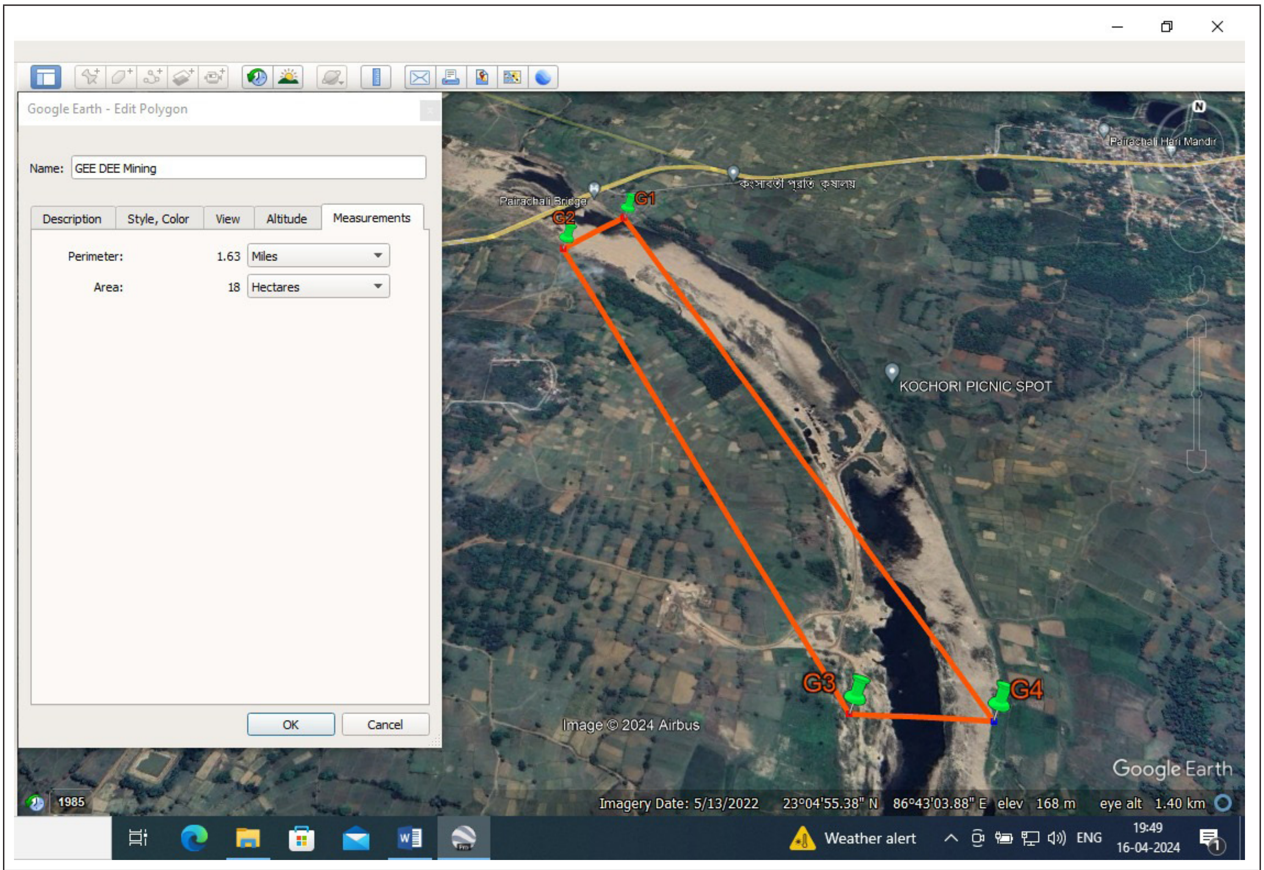


Fig 2.4: Coordinates map

2.19.4 Afforestation Programme

As per Rule 33 of the WBMMC Rules, 2016, every successful bidder/holder of a mining lease is required to submit the Environment Clearance (EC) from the MoEF&CC/SEIAA/DEIAA to the Department[206]. As per the conditions stipulated in the EC/Mining Plans, lease holders are required to undertake afforestation programmes, in the next five years, in the barrier zone[207].

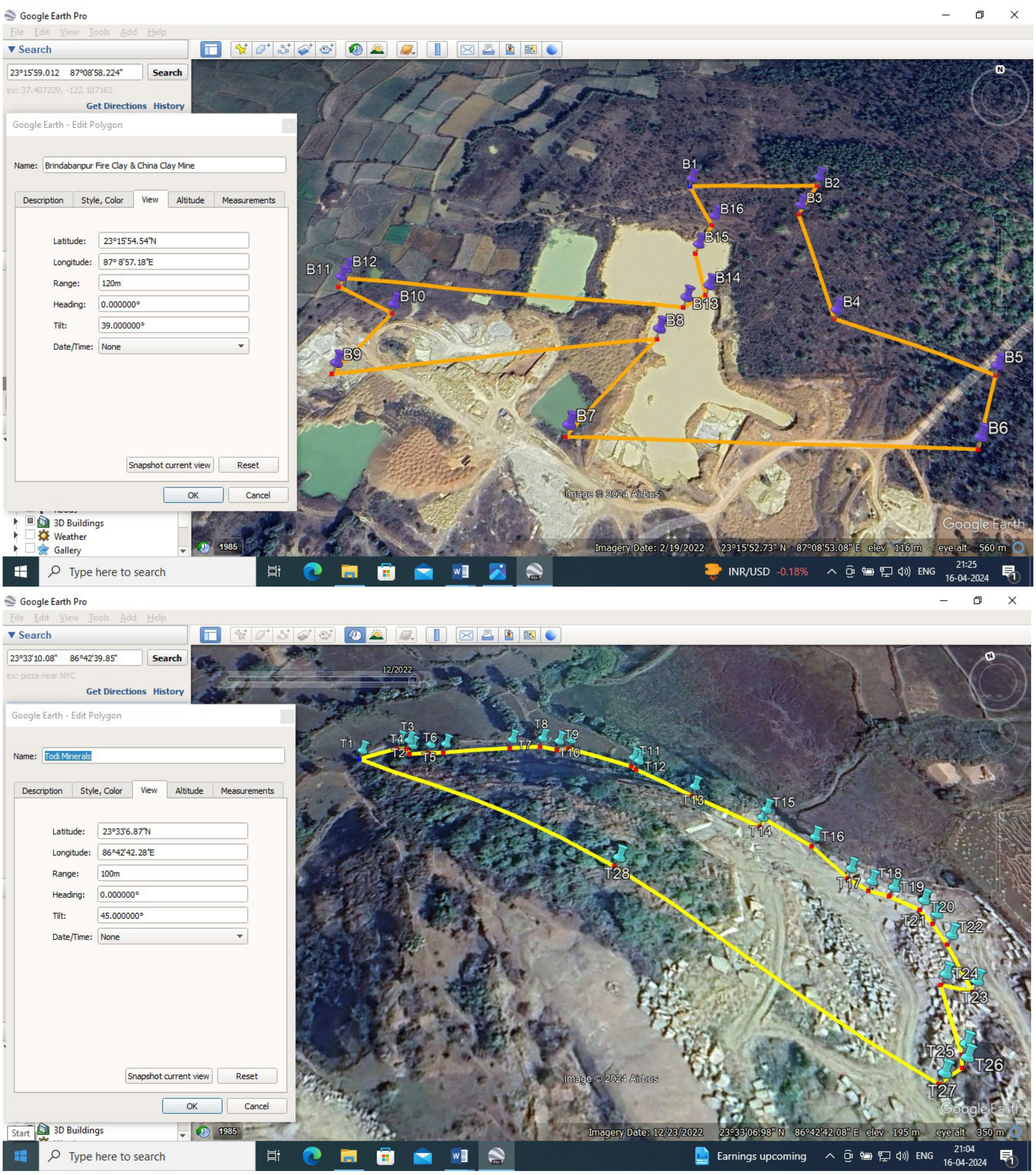
Coordinates of 61 in-situ mining plans were geo-referenced, using Google Earth Pro Software and it was observed that, in two cases[208], plantation work had not been carried out, as per the EC and Mining Plan. Absence of plantations was evident in all the other cases/images as shown in **Figs 2.5 & 2.6**.

[205] *Gee Dee Mining Pvt. Ltd., Purulia.*

[206] *Department: In case of in-situ mines IC&E Department and in others mines DL & LROs.*

[207] *All along the outer boundary of the mining lease area.*

[208] *Bibhas Kumar Das, Lusy Mining & Minerals, Brindabanpur Fire Clay & China Clay Mine at Bankura district; M/s Todi Minerals Pvt. Ltd., Granite/ Stone Mine at Purulia District.*



Figs 2.5 & 2.6: Plantations not carried out

Thus, the lessees were not complying with stipulated conditions, with regard to the Environmental safeguards envisaged in the ECs and Mining Plans and the Department had failed to enforce compliance of the Act and norms envisaged in the ECs and Mining Plans.

2.20 Analysis of Mines using Unmanned Aerial Vehicle (UAV)

Audit carried out a Geo-spatial field study (March 2023), at three[209] mining sites, with the help of an expert team from the Centre for Aerospace Research, MIT Campus, Anna University, Chennai (the Agency), in the presence of State

[209] *Bibhas Kumar Das, Brindabanpur Fire Clay & China Clay Mine at Bankura district; M/s Todi Minerals Pvt. Ltd., Granite/ Stone Mine at Purulia District & Mr. Arun Saraf, Gee Dee Mining Pvt. Ltd. Sand mining at Purulia district.*

Mining Officials of two[210] districts. The main aim of the project was to ascertain mapping/verification of allotted mining areas/operations, as well as to estimate the volume of minor minerals excavated, using UAV, DGPS instrument, Bathymetric and GIS technology.

Based upon the survey report of the expert team, the following were observed:

2.20.1 Mapping of allotted Granite mining area

The Agency had applied the Grid-based Volume Calculation,[211] based on an equally distributed grid on a 3D mesh file[212]. The study used the grid method for volume calculation because it is most suitable for UAV based DEM[213].

The study for Granite mining sites at *Talsankra* village at Purulia District revealed that a polygon (marked in yellow) was formed by the approved mining lease boundary coordinates, using geo-referenced UAV data. The Global Positioning System (GPS) receiver was used to ascertain any unusual activities beyond the approved mining boundary. The red polygon (both the left and right side), beyond the approved mining lease, indicated the extra excavated volume of mineral, as shown in **Fig 2.7**.

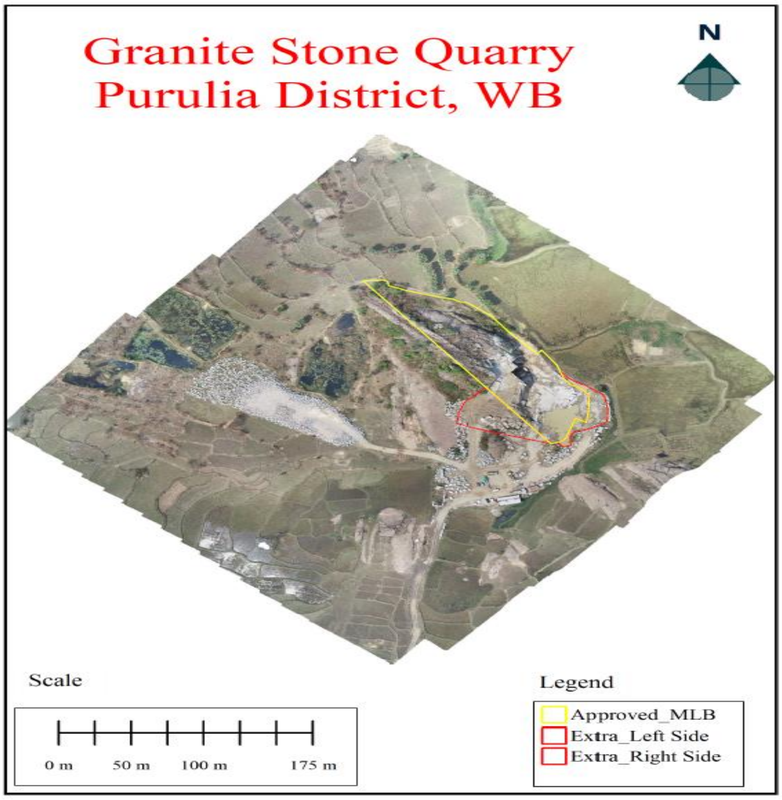


Fig 2.7: Approved and actual mining area of Granite Stone Quarry

The probable volume calculation of minerals, excavated in the Minor Mineral Quarry, using UAV, was as shown in **Table 2.9**.

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210 *Bankura and Purulia.*

211 *Volume is calculated based on an equally distributed grid on a 3D mesh file.*

212 *Describes the structural build of a 3D model, consisting of polygons. 3D meshes use X, Y and Z axes reference points, to describe the shapes with height, width and depth.*

213 *A DEM is a representation elevation of the terrain (bare-earth) at raster grid format.*

Table 2.9: Excess mining of granite

Sl No.	Survey No*	Volume (m^3) of Granite extracted	Total Volume (m^3)	Area (ha) Granite Extend**	Max. Depth (m)
1.	2974	36,680.856	36,680.856	0.423	21
2.	Extra excavated	5,182.53	5182.53	0.2272	9.8

Note: - ** Survey No. is actually Plot No. given to a piece of land by the Government. Extra left & Extra Right means extra extraction beyond the approved mining area of granite mine both left and right side of the allotted area*

*** Area in which mining operation carried out*

As per drone survey report, lessee carried out mining operation in 2,272 m^2 beyond the approved mining area and illegally excavated 5,182.53 m^3 granite, for which the price of mineral would amount to ₹ **0.98 crore** @ ₹ 1,890 per m^3 (₹ 1,260 x 1.5)[214].

2.20.2 Mapping of allotted China clay & Fire clay mining area

The survey report for the China Clay and Fire Clay mining sites, at the *Brindabanpur* village, at Bankura District, revealed that a yellow polygon was formed by the approved mining lease boundary coordinates, using geo-referenced UAV data. The Global Positioning System (GPS) receiver was used to ascertain any unusual activity beyond the approved mining boundary. The red polygon falling inside the forest area, as per the google earth image, indicated that the lessee had carried out mining operation (February 2022) beyond the approved lease area. The estimated extra quantity extracted was 3,770.76 MT of China Clay, as shown in **Fig 2.8**.

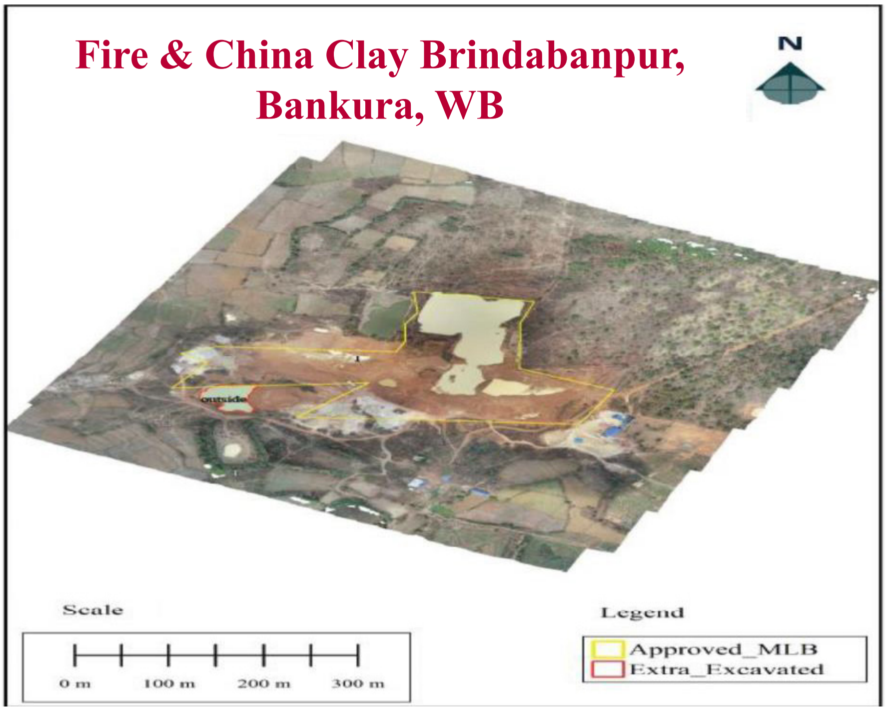


Fig 2.8: Approved and actual mining area of Fire and China Clay

[214] *Rate of royalty of Granite: ₹ 1,260 per m^3 w.e.f. October 2016 to January 2022 and the price of mineral is to be calculated @1.5 times of royalty.*

The volume calculation of minerals, excavated in the Minor Mineral Quarry, using UAV, was as shown in **Table 2.10**.

Table 2.10: Excess and illegal mining of Fire & China Clay

Sl. No.	Plot No	Fire & China Clay excavated Volume (MT)	Total Volume (MT)	Area (ha)	Max. Depth (m)
1	Location1- 350, 350/817, 351(P)	1,06,229.84	1,06,229.84	1.832	6.8
2	Location 2- 350, 350/817, 351 (P)	13,732.78	13,732.78	0.188	2.1
3	Location 3- 350, 350/817, 351 (P)	1,020.23	1,020.23	0.035	2.1
4	Extra	3,770.76	3,770.76	0.209	2.1

Thus, the excess mining of Fire & China clay, as per the above estimation, was quantified as 3,770.76 MT, for which, the price of China Clay would amount to ₹ 2.55 lakh @ ₹ 67.5 per MT (₹ 45 x 1.5)[215].

Audit observed that the District office (DL&LROs) did not have data for illegal extraction beyond the lease boundaries. The coordinates of the encroached areas were not recorded and the areas were not periodically inspected, to detect the furtherance of illegal quarrying, if any.

In the Exit Conference L&LR and RR&R Department stated (July 2023) that technological solution would be adopted for effective monitoring.

Recommendation 9:

Government should direct the DMM to adopt advanced technology, such as satellite imagery, for surveillance activities and for detection of unauthorised quarrying and extraction beyond the lease boundaries.

[215] *Rate of royalty of Fire & China Clay @ ₹ 45 per tonne and price of mineral is to be calculated @ 1.5 times of royalty.*

Chapter III

Performance Audit on Management of Regulatory Assets by Power sector State Public Sector Enterprises (SPSEs)

CHAPTER - III

POWER DEPARTMENT

3 Performance Audit on Management of Regulatory Assets by Power-sector State Public Sector Enterprises (SPSEs)

Executive Summary

Overview

The activities of power-sector SPSEs relate to generation, transmission, distribution and wheeling of electricity within the state of West Bengal. The West Bengal Power Development Corporation Limited (WBPDCL) and Durgapur Projects Limited (DPL) together operate six generating stations, while the West Bengal State Electricity Transmission Company Limited (WBSETCL) and West Bengal State Electricity Distribution Company Limited (WBSEDCL) are the State Transmission Utility (STU) and DISCOM, respectively. All four SPSEs are wholly owned by the Government of West Bengal (GoWB) and function under the aegis of the Department of Power (DoP). The core business of these SPSEs is rate-regulated, with the regulator being the West Bengal Electricity Regulatory Commission (WBERC), which determines the tariff for generation, supply, transmission and wheeling of electricity, within the State. A regulatory asset (RA) is an entity's right to recover fixed or determinable amounts of money towards incurred costs, as a result of the actual or expected actions of its regulator, under the applicable regulatory framework. As of 31 March 2022, the aggregate RAs of the four SPSEs were ₹ 26,788.86 crore.

Delay in submission of applications and consequential delays in issue of orders

Under section 64(3) of the Electricity Act 2003 and tariff regulation of WBERC, an application for determination of tariff for Annual Performance Review (APR) of SPSEs shall be submitted 120 days in advance of the effective date of the start of the tariff period and within November of the succeeding financial year, respectively.

Delays in the submission of applications by SPSEs ranged between 7 and 725 days, during 2017-22. These delays occurred mainly due to non-preparation of annual accounts in time. Further, 15 APR Orders (2014-20) of different SPSEs had been issued between February and July 2022, by WBERC, with significant delays, ranging between 125 days and 2,253 days.

Effect of operational performance on Regulatory Assets

Non-achievement of the targeted norms on various parameters of different generating stations of WBPDCL (period 2013-17) and DPL (period 2013-16) led to (a) excess consumption of fuel and procurement of power of ₹ 2,079.75 crore (WBPDCL: ₹ 1,741.11 crore and DPL: ₹ 338.64 crore), disallowed by WBERC and (b) in the same period, non-recovery of fixed costs of ₹ 1,217.46 crore and ₹ 661.21 crore, by WBPDCL and DPL, respectively, due to low Plant Availability Factor (PAF).

Partial recovery of costs relating to controllable items

WBERC, in its tariff regulations, segregated the items of cost into controllable and uncontrollable items. The chances of recovery of actual costs through tariffs are remote, if the excess costs incurred are under controllable items. It was observed that: **(a)** WBSEDCL failed to recover ₹ 84.16 crore on controllable items, *viz*. meter reading & billing distribution, collection and franchisee cost, during 2017-20 and **(b)** WBPDCL failed to recover ₹ 30.43 crore, on coal & ash handling and O&M charges (controllable items), for the period 2016-17 and **(c)** WBSETCL failed to recover ₹ 40.05 crore, on repairs, maintenance, administrative and general expenses (controllable items), during 2015-20.

Monthly variable cost adjustment not determined judiciously

Monthly Variable Cost Adjustment (MVCA), introduced by WBERC in April 2011, provided for determination of fuel and power purchase costs by licensees and realisation of the amounts from their consumers, through sale bills, to avoid accumulation of regulatory assets and ensure reasonable cash flow for distribution licensees. WBSEDCL had not revised the MVCA of 23 paise/unit, since July 2016. Due to consideration of the MVCA at 23 paise/unit, delays in submission of tariff applications and subsequent delays in tariff orders, for the years 2017-20, there was short collection of power purchase costs, amounting to ₹ 3,511.04 crore.

Adverse impact of excess interest burden

The excess interest burden adversely affected the financial health of SPSEs, as follows:

WBSEDCL: Negative working capital rose by 53 *per cent*; interest expenses and revenue deficit rose by 14 and 69 *per cent,* respectively, in 2022, compared to 2017.

WBPDCL: Short-term borrowings grew by 69 *per cent;* interest expenses rose by 92 *per cent,* with interest of ₹ 180.97 crore claimed on temporary borrowings taken from banks or financial institutions which add to cost thereby leading to increase in tariffs.

WBSETCL: Negative working capital rose by 25 *per cent;* borrowings and interest expenses rose by 8 *per cent*, each.

DPL : Loan swapped to low-cost interest rate for longer period, led to higher monthly interest outgo of ₹ 5.76 crore.

Effect on credit rating of the SPSEs

Ministry of Power, GoI, assigned (August 2022) to WBSEDCL, a credit rating of 'C' grade, which had declined from the earlier 'B^+' grade (October 2019). The loan policy circular of PFC and REC envisaged that the interest rates of loans taken by SPSEs having credit ratings of B and C, shall be higher by 25 bps and 50 bps, respectively, as compared to the interest rates of loans applicable to SPSEs of rating A. Out of ₹ 5,544 crore of project loan (31 March 2022), ₹ 3,918.77 crore (71 *per cent*) was taken from REC and PFC, with a repayment period of 12 to 20 years. Thus, due to decrease in the credit rating, from B to C grade, WBSEDCL would end up incurring higher interest expenses, in future.

Government's initiative to liquidate regulatory assets

To liquidate RAs and arrear power purchase costs, GoWB had released ₹ 4,563.16 crore, as grants-in-aid, to WBSEDCL (₹ 2,647.09 crore) and WBPDCL (₹ 1,916.07 crore), between October 2016 to May 2017. Further, GoWB also stated (July 2021) that the current scale of regulatory assets was so large that it was beyond its means to liquidate the same, as it had done before. Accordingly, WBERC was directed to expedite the process of annual performance review (APR) orders, to ensure complete recovery of actual costs incurred by the SPSEs and admitted by WBERC.

Recommendations

1. ***SPSEs should assess the quantum of regulatory assets strictly in line with applicable regulations and recognise them in their books of accounts in accordance with the relevant accounting standards.***
2. ***SPSEs should strive to strengthen its operational performance, to meet the laid down norms.***
3. ***WBERC should ensure that the provisions of the National Tariff Policy are followed, for fixing norms and finalising tariff/APR orders, to regulate the tariff properly and enable recovery of justifiable costs incurred by SPSEs.***
4. ***SPSEs should make efforts to improve their liquidity position, borrowing and credit profile.***

Overview of Department of Power

The activities of power sector State Public Sector Enterprises (SPSEs)[216] relate to generation, transmission, distribution and wheeling of electricity within the state of West Bengal, be it wholesale, bulk or retail. WBPDCL and DPL together operate six[217] generating stations, while WBSETCL and WBSEDCL are the State Transmission Utility (STU) and distribution company (DISCOM), respectively. All four SPSEs are wholly owned by the Government of West Bengal (GoWB) and function under the aegis of the Department of Power (DoP). WBSETCL and WBSEDCL were carved out from the erstwhile West Bengal State Electricity Board (WBSEB), under the West Bengal Power Sector Reforms Transfer Scheme 2007.

3.1 Introduction

The electricity sector operates in a rate-regulated environment, with the Central and State Electricity Regulatory Commissions (CERC/ SERCs) determining the rational and economic pricing of electricity. This pricing is based on recovery of all prudent costs and a rate of return to earn a reasonable surplus. However, SERCs often do not increase tariffs to match the increasing costs of DISCOMs,

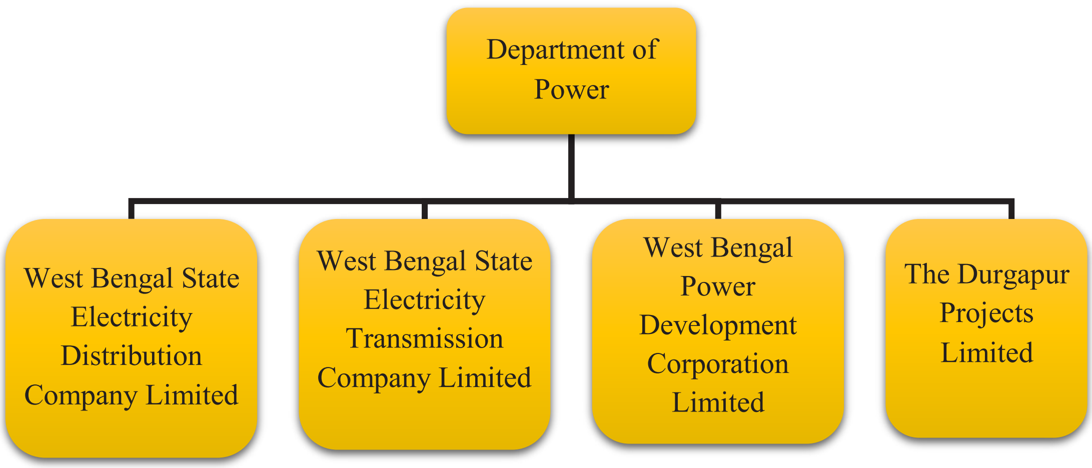
[216] *West Bengal Power Development Corporation Limited (WBPDCL), The Durgapur Projects Limited (DPL), West Bengal State Electricity Distribution Company Limited (WBSEDCL) and West Bengal State Electricity Transmission Company Limited (WBSETCL).*

[217] *WBPDCL has five generating stations, viz. Kolaghat Thermal Power Station (KTPS), Bandel Thermal Power Station (BTPS), Bakreswar Thermal Power Station (BkTPS), Sagardighi Thermal Power Station (SgTPS) and Santaldih Thermal Power Station (STPS) and there is one generating station of DPL.*

in order to shield consumers from tariff shock. These higher costs are either recognised by SERCs as regulatory assets, to be recovered through future tariff hikes or must be absorbed by the DISCOMs. A Regulatory asset is an entity's right to recover fixed or determinable amounts of money towards costs incurred, as a result of the actual or expected actions of its regulator, under the applicable regulatory framework.

The core business of these four SPSEs is regulated by the West Bengal Electricity Regulatory Commission (WBERC), constituted by GoWB in January 1999. According to Section 86 of the Electricity Act, 2003 (Act), WBERC shall, *inter alia,* determine the tariff for generation, supply, transmission and wheeling of electricity, within the State. Tariff includes FPPCA (fuel & power purchase cost adjustment)/FCA (fuel cost adjustment), Power Purchase Cost/Variable Cost, MFCA (monthly fuel cost adjustment)/ MVCA (monthly variable cost adjustment), APR (annual performance review), *etc* according to the applicable tariff regulations. The annual tariffs are to be notified in advance, by WBERC, before commencement of each financial year. These tariffs are subsequently reviewed through APRs and adjusted in future years. Accordingly, based on their understanding and interpretation of regulations and tariff/APR orders issued by WBERC, the SPSEs estimate the quantum of regulatory assets (RAs) /regulatory receivables (RRs) to be reflected in their financial statements every year. RAs/RRs arise due to the time lag between the submission of petitions, regarding FPPCA and APRs, by the SPSEs, to WBERC, and their acceptance, either in part or in full, by WBERC. As of 31 March 2022, the aggregate RAs/ RRs, of the four SPSEs, were ₹ 26,788.86 crore[218]. The rise in receivables led to stretching of the liquidity of these agencies.

3.2 Organisational Structure



The management of each SPSE is vested in its Board of Directors (BoD), comprising of Directors appointed by the Government of West Bengal (GoWB). The Chairman and Managing Directors (CMDs)/ Managing Directors (MDs) are the Chief Executives of these SPSEs.

[218] *West Bengal Power Development Corporation Limited - ₹ 7,764.48 crore, The Durgapur Projects Limited - ₹ 978.47 crore, West Bengal State Electricity Transmission Company Limited - ₹ (-) 284.26 crore, and West Bengal State Electricity Distribution Company Limited - ₹ 18,330.17 crore.*

The Regulation Cell/Wing and the Corporate Finance Wing are together responsible for the determination, management, realisation and presentation of regulatory assets.

3.3 Audit Objectives

The Performance Audit was conducted to ascertain:

- Whether the creation and recognition of regulatory assets was in line with extant policy/regulations *etc*.
- Whether the gap between tariff and costs was being minimised, leading to reduction of regulatory assets.
- Whether the creation and recognition of regulatory assets had impacted the performance of SPSEs.

3.4 Audit Scope and Methodology

The Performance Audit was conducted between July and September 2022. It covered the processes of creation, management and realisation of regulatory assets, as well as their presentation and disclosure, along with their impact on working capital/cash requirements, additional borrowings/ interest burden and credit ratings etc, during the period from financial year 2017-18 to financial year 2021-22. It was, however, noted that APR orders had been issued, by WBERC, upto financial year 2019-20, for WBSETCL and WBSEDCL; upto financial year 2016-17 for WBPDCL; and upto financial year 2015-16 only, for DPL.

The audit methodology involved: (i) scrutiny and verification of records maintained at the DoP, GoWB, Head Offices of the four SPSEs and WBERC (ii) review of Government directives and minutes of meetings of the BoD (iii) review of applications of tariffs, FPPCA, FCA, APR and review petitions of SPSEs (iv) examination of Orders of WBERC relating to tariffs, FPPCA, FCA, APR and review applications by SPSEs on the orders of the WBERC (v) verification of Reports and returns, submitted by SPSEs, to the Central Electricity Authority (CEA), DoP, GoWB and MoP, GoI (vi) issue of audit observations and (vii) interaction with the Managements of these SPSEs. An Entry Conference was held on 20 July 2022, wherein the audit objectives, audit criteria, scope and methodology of the Performance Audit, were discussed, with the DoP, GoWB and the Managements of the SPSEs.

The audit findings were discussed at an Exit Conference held on 25 November 2022. It was attended by the Additional Chief Secretary to the Government of West Bengal, Department of Power and the representatives of the SPSEs. Further, Exit Conference with WBERC was held on 28 December 2022. Replies were received from, WBSEDCL (January 2023/April 2023/ March 2024), WBSETCL (April 2023/January 2024)), WBPDCL (November 2022/December 2023), DPL (April 2023/January 2024) and WBERC (January 2023).

3.5 Audit Criteria

The audit criteria, adopted for assessing achievement of the audit objectives, were derived from the following:

- ✓ Electricity Act, 2003.
- ✓ Extant Tariff Regulations and related Regulations, issued by the Central Electricity Regulatory Commission (CERC) and WBERC.

- ✓ National Electricity Policy, 2005.
- ✓ National Tariff Policy, 2006 and 2016.
- ✓ Guidelines, instructions and directions of the Central Government, State Government and WBERC/ CERC.
- ✓ Orders and instructions issued by WBERC and Appellate Tribunal for Electricity (APTEL), against petitions submitted to them.

3.6 Acknowledgement

Audit acknowledges the co-operation of DoP and the SPSEs, in providing necessary records and information, in connection with the conduct of this Performance Audit.

3.7 Financial and Operational Performance

(A) Financial Performance

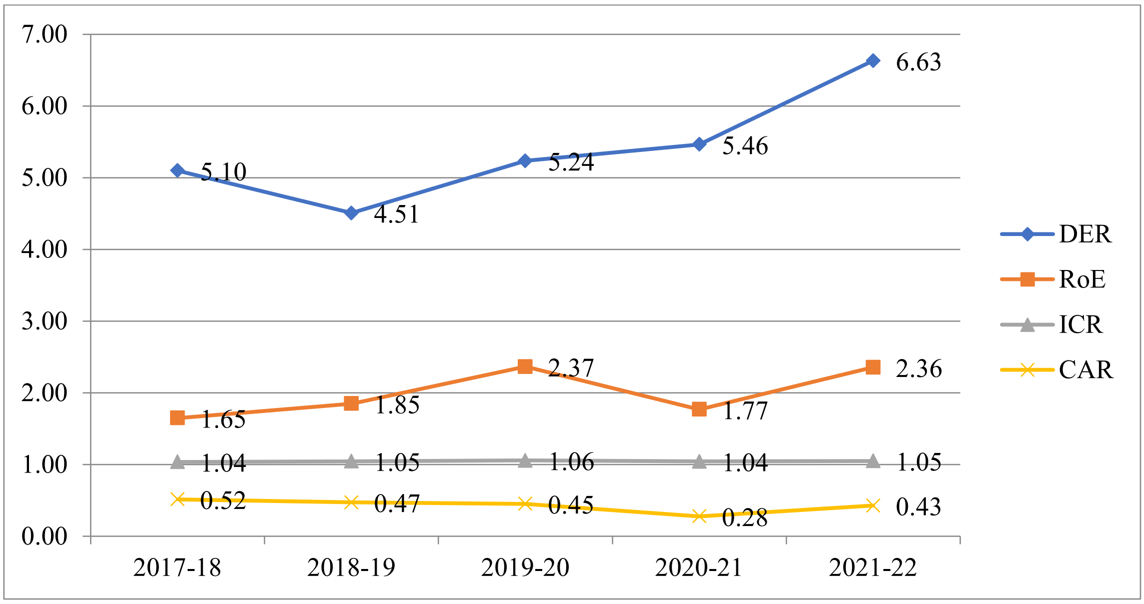
The summarised financial performance of SPSEs, for the last five financial years, up to financial year 2021-22 is shown in ***Appendix-19.*** The following were noticed in regard to the financial performances of the SPSEs, upto 31 March 2022:

WBSEDCL	✓ An amount of ₹ 18,330.17 crore (68 *per cent* of total RAs of SPSEs) had been booked as RAs, by WBSEDCL, as on 31 March 2022. ✓ Earned marginal profit during the last five years. ✓ The ratio of regulatory income to total income increased over the four years up to 2020-21 and reduced in 2021-22. ✓ The Statutory Auditors of the Company had opined (May 2022) that: *The recovery through Tariff Mechanism has not been commensurate with the revenue so booked resulting in the increasing amount of recoverable amount every year. Had this revenue not been booked, the financial position for the year would have resulted in loss. In view of the poor recoverability of such amount, the Company is increasing its borrowings, which may not be sustainable.* ✓ There were abnormal AT&C losses due to theft of electricity in some geographical locations, with more than 90 *per cent*; ✓ Unutilised state government funds and loans for long term projects had been deposited to cash credit account to reduce the outstanding balances thereof; ✓ Due to poor recoverability of regulatory assets by WBERC, WBSEDCL is increasing its borrowings; ✓ An amount of ₹ 1,346.52 crore is receivable from non-government debtors for more than 3 years against which security deposit held is only ₹ 97.40 crore; ✓ WBSEDCL has defaulted in payment of ₹ 1,173.00 crore against the Government Guaranteed Pension Trust Bond 2016, which was payable by 31 March 2022.
WBPDCL	✓ The Company had defaulted in repayment of loan of ₹ 620.72 crore, to GoWB as on 31 March 2022.
WBSETCL	✓ WBSETCL is a profit earning company, with revenues from operations having shown an increasing trend from ₹ 1,298.54 crore in financial year 2017-18 to ₹ 1,689.05 crore in financial year 2021-22.
DPL	✓ DPL is a loss incurring company. However, during financial year 2021-22, it achieved a marginal profit of ₹ 5.20 crore, mainly due to profit on sale of dismantled Coke Oven Group of plants and Unit 6 of DPL.

Chart 3.1 below shows the year-wise changes of Debt-Equity Ratio (DER)[219], Current Asset Ratio (CAR)[220], Return on Equity (RoE)[221], and Interest Coverage Ratio (ICR)[222] of these SPSEs, for the period from financial year 2017-18 to financial year 2021-22, indicating their financial performance.

Chart 3.1: Financial Performance of SPSEs

(a) WBSEDCL



(Source: Annual Reports)

- ➢ DER was between 4.51 and 6.63, during the period 2017-22, which exhibited WBSEDCL's dependence on borrowings.
- ➢ CAR (excluding regulatory assets from the total assets) was between 0.28 and 0.52 during the period 2017-22, which depicted the decreasing ability of WBSEDCL to pay off its current liabilities.
- ➢ RoE and ICR were stable and depicted WBSEDCL's adequate performance over the years.

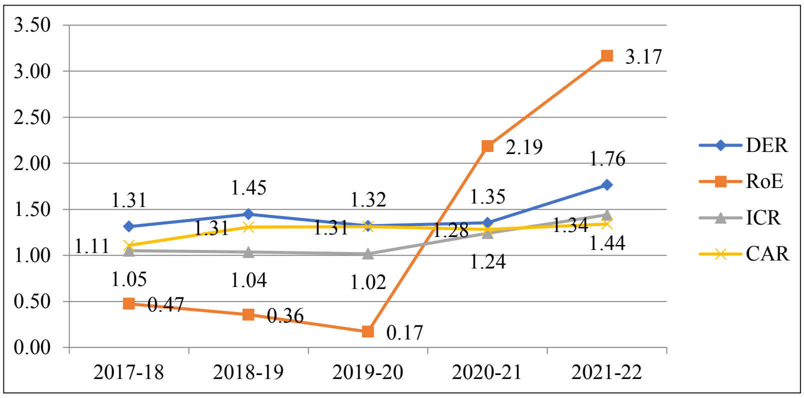
[219] *DER is a ratio that compares an SPSE's long-loan liabilities to its shareholders' equity. A higher DER means that a company has borrowed more.*

[220] *CAR is the ratio of current assets of a SPSE to its' current liabilities and indicates the SPSE's ability to pay off its liabilities, due within 12 months. A ratio of less than one, indicate the SPSE's inability to pay off its dues.*

[221] *RoE, generally expressed as a percentage, is the net income (i.e. net profit after taxes) divided by shareholders' funds. It is a measure of financial performance and assesses how effectively management is deploying shareholders' funds to earn profits.*

[222] *ICR of a SPSE is the ratio of earnings before interest and taxes (EBIT) to the interest expenses incurred in the same period. It shows the ability of a SPSE to pay interest on outstanding debt and the lower the ratio, the reduced is the ability of the SPSE to pay interest on debt. An interest coverage ratio below one indicates that the SPSE is not generating sufficient revenues to meet its expenses on interest.*

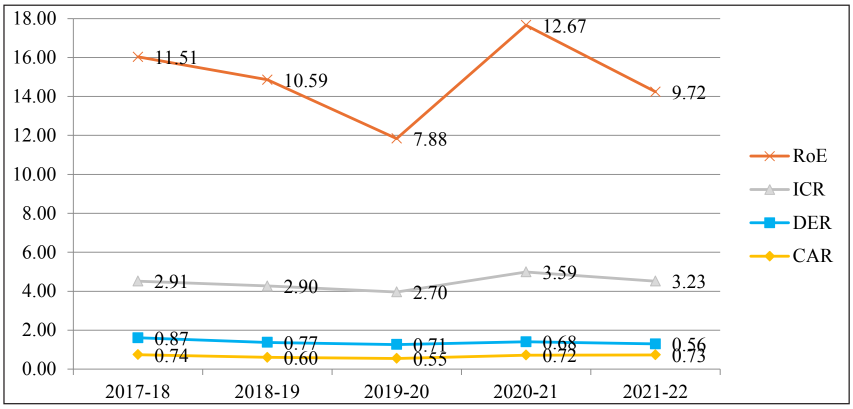
(b) WBPDCL



(Source: Annual Reports)

CAR, ICR and RoE showed an increasing trend during 2017-22, depicting improved performance of WBPDCL. DER was also under control and was within WBERC norm of 2.33 : 1 (i.e. debt : 70 *per cent* and equity : 30 *per cent*).

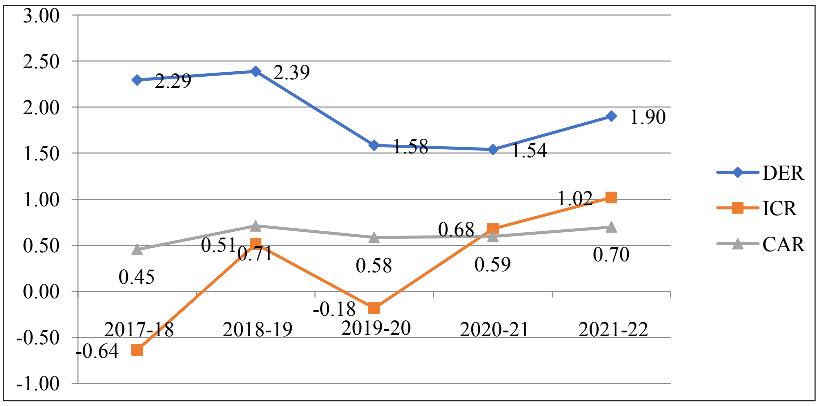
(c) WBSETCL



(Source: Annual Reports)

- ➢ DER was within the norm of 2.33:1. Further, CAR of less than one indicated that WBSETCL's current liabilities were higher than its current assets and could lead to shortage of working capital.
- ➢ ICR and RoE were on the higher side reflecting WBSETCL's ability to earn revenues and pay off interest on outstanding debts, as also profitably manage shareholders' funds.

(d) DPL



(Source: Annual Reports)

- CAR was between 0.45 and 0.70, indicating that DPL's current liabilities were higher than its current assets.
- ICR was negative in financial years 2017-18 and 2019-20 and below one in financial years 2018-19 and 2020-21, showing DPL's inability to pay off the interest due on outstanding debts. It improved only in financial year 2021-22.
- DER was stable and within the ideal norm.
- Since DPL had accumulated losses over the period, its shareholders fund was negative. Consequently, its RoE was not determinable, during the period 2017-22.

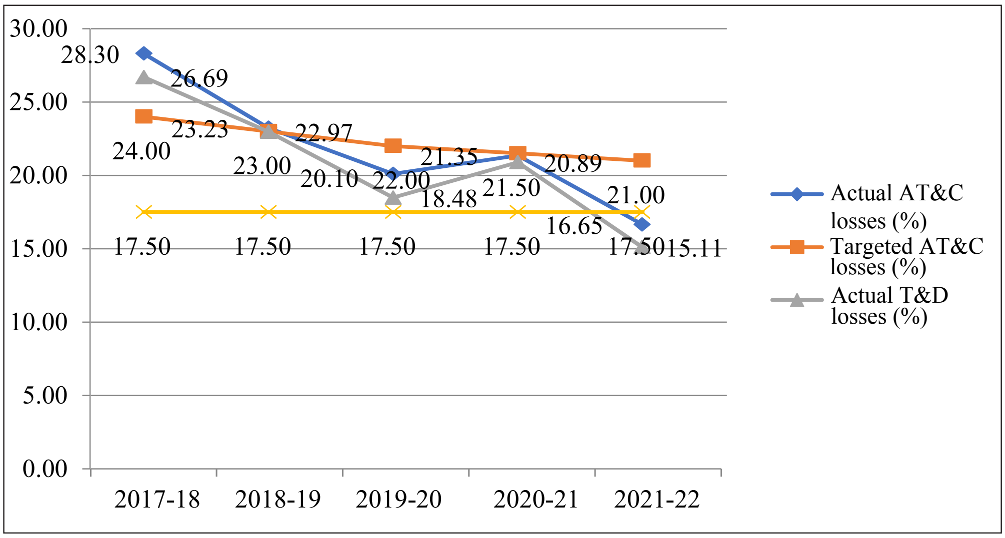
(B) Operational Performance

WBERC had fixed various norms in its Tariff Regulation to determine the tariff. These norms varied according to the activities of SPSEs. In case of DISCOMs (here WBSEDCL and the erstwhile distribution portion of DPL), the main indicators are AT&C[223] losses and T&D[224] losses. In case of Transmission Licensee (here WBSETCL), the main indicator is Transformation Capacity, Transmission Line and Energy flow in grid. In case of Generating Utility (here WBPDCL and DPL) main indicators are PAF[225], PLF[226] and APC/AEC[227].

The operational performances of the SPSEs, for the last five financial years up to financial year 2021-22 has been given in **Chart 3.2.**

Chart 3.2: Operational Performance of SPSEs

(a) WBSEDCL



(Source: Tariff Regulation/ Tariff order/ Annual Reports)

[223] *Gap between the energy input and the energy for which revenue is actually realized from the consumers.*

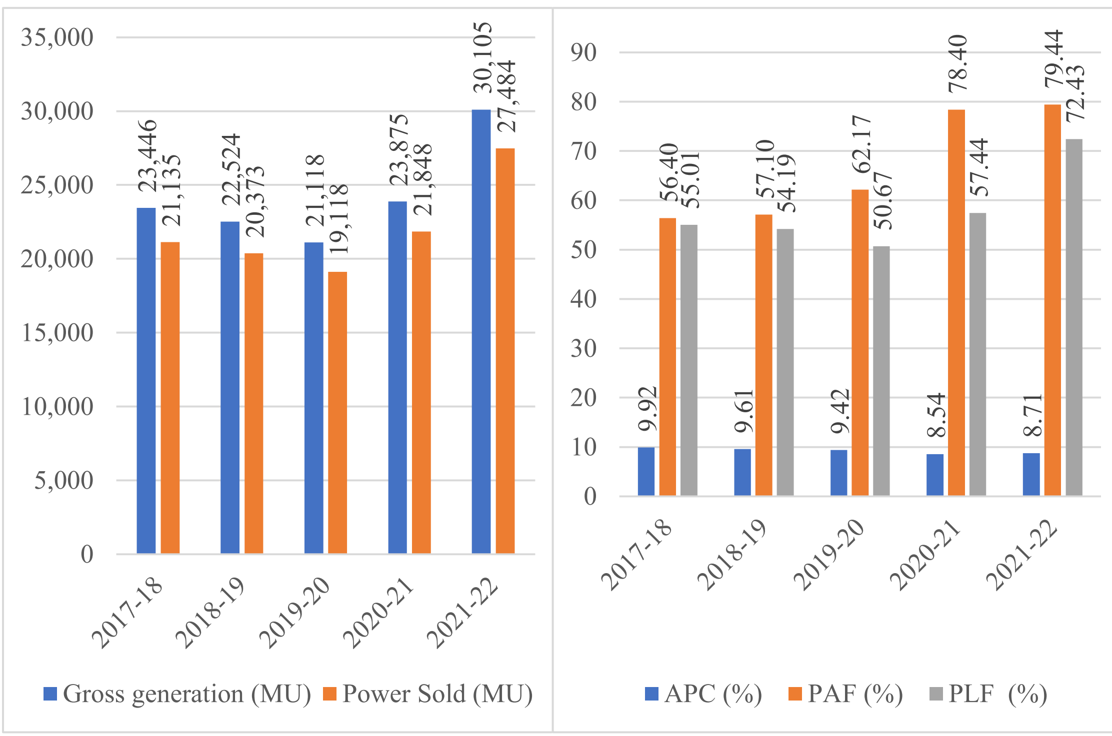
[224] *Gap between the energy input and the energy billed to the consumers.*

[225] *Plant Availability Factor (PAF) represents the availability of a generating station, to produce electricity in a given period.*

[226] *PLF means the total energy generated by a generating station, expressed as a percentage of energy, corresponding to the installed capacity of the station.*

[227] *Auxiliary Power/ Energy Consumption (APC/AEC) represents the power used internally by the generating station for running the equipment/common services.*

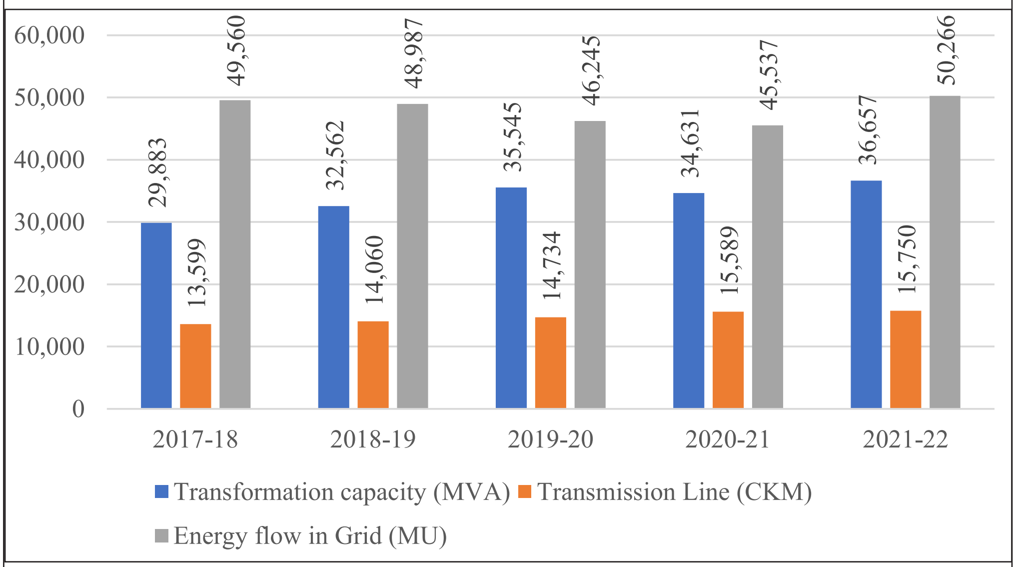
(b) WBPDCL



(c) DPL

(Source: Tariff Regulation/ Tariff order/ Annual Reports)

(d) WBSETCL



(Source: Tariff Regulation/ Tariff order/ Annual Reports)

It is evident from the above that:

- T&D losses have been higher than norms in four out of five years for WBSEDCL. As a result, WBSEDCL had to purchase power in excess of normative requirement to meet the losses arising from higher T&D losses. This had resulted in excess power purchase costs, which were disallowed by WBERC. AT&C losses were lowered during 2019-22.
- The APC/AEC of WBPDCL had reduced from 9.92 *per cent* (financial year 2017-18) to 8.71 *per cent* (financial year 2021-22), indicating improved performance.
- The PAF also had increased from 56.40 *per cent* (financial year 2017-18) to 79.44 *per cent* (financial year 2021-22) but remained lower than the normative performance (85 *per cent*) fixed by WBERC. The Plant Load Factor is the ratio of average energy supplied for a given time period, to the energy that could have been supplied at maximum loading condition, for the same time period. A generating plant, which runs on a low load factor, needs to burn more fuel, to maintain heat, to generate electricity at the rated voltage. The PLF had ranged between 50.67 *per cent* (financial year 2019-20) to 72.43 *per cent* (financial year 2021-22), indicating that the plants were running on partial load, leading to excess fuel consumption.
- The APC of DPL had reduced from 9.05 *per cent* (financial year 2017-18) to 8.95 *per cent* (financial year 2021-22), indicating improved performance. Further, lesser PAF (43 *per cent* to 71 *per cent*), resulted in under recovery of fixed costs. Again, poor PLF (41 *per cent* to 48 *per cent*) indicates that the plants were running on partial load, leading to excess fuel consumption.
- In case of WBSETCL, it was observed that the transformation capacity (MVA)[228] and transmission line (CKM)[229] had increased during 2017-22,

[228] *Mega Volt Amperes (1,000,000 volt amperes). It is the unit for measurement of transformation capacity.*

[229] *Circuit Kilometers (actual length of transmission lines). It is a unit for measurement of the length of transmission lines.*

while, the energy flow (Million Unit/MU) had marginally increased, from 2017-18 to 2021-22.

WBSETCL furnished (January 2024) figures for financial and operational performance based on its Annual Report for 2021-22, which have been incorporated.

The impact of under-performance of SPSEs is mentioned in ***Paragraph 3.10***.

3.8 Tariff policy and procedure

Government of India notified (January 2006) the National Tariff Policy (NTP), 2006, in compliance with Section 3 of the Electricity Act, 2003. A revised NTP was issued in January 2016. The objectives of the revised policy are, *inter alia*, to: (a) ensure availability of electricity to consumers at reasonable and competitive rates (b) ensure financial viability of the sector and attract investments (c) Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimise perceptions of regulatory risks and (d) Promote competition, efficiency in operations and improvement in quality of supply.

Para 8.2.2 of the National Tariff Policy (NTP), 2006, *inter alia*, mentioned that the facility of regulatory assets had been adopted to limit the tariff impact in a particular year and was to be resorted to only as an exception, under natural causes or *force majeure* conditions. Moreover, recovery of Regulatory Assets was to be time-bound and non-repetitive. Further, Para 8.2.2 of the NTP, 2016, stipulated that no creation of Regulatory Assets would be allowed under 'business as usual' conditions and recovery of outstanding Regulatory Assets, along with the carrying cost of Regulatory Assets, needed to be time-bound and within a period not exceeding seven years.

Meanwhile, WBERC introduced[230] the Multi Year Tariff (MYT) in February 2007, whereby every generating company and licensee was to file applications for approval of ARRs (Annual Revenue Requirements)[231], with the WBERC, under the MYT framework, for the control period commencing from the financial year 2007-08. After completion of each financial year, every generating company and licensee was to file its FPPCA, FCA and APR applications, before WBERC, which was to pass orders against the said applications, for being accordingly implemented, through the ensuing tariff orders.

However, if WBERC was satisfied that:

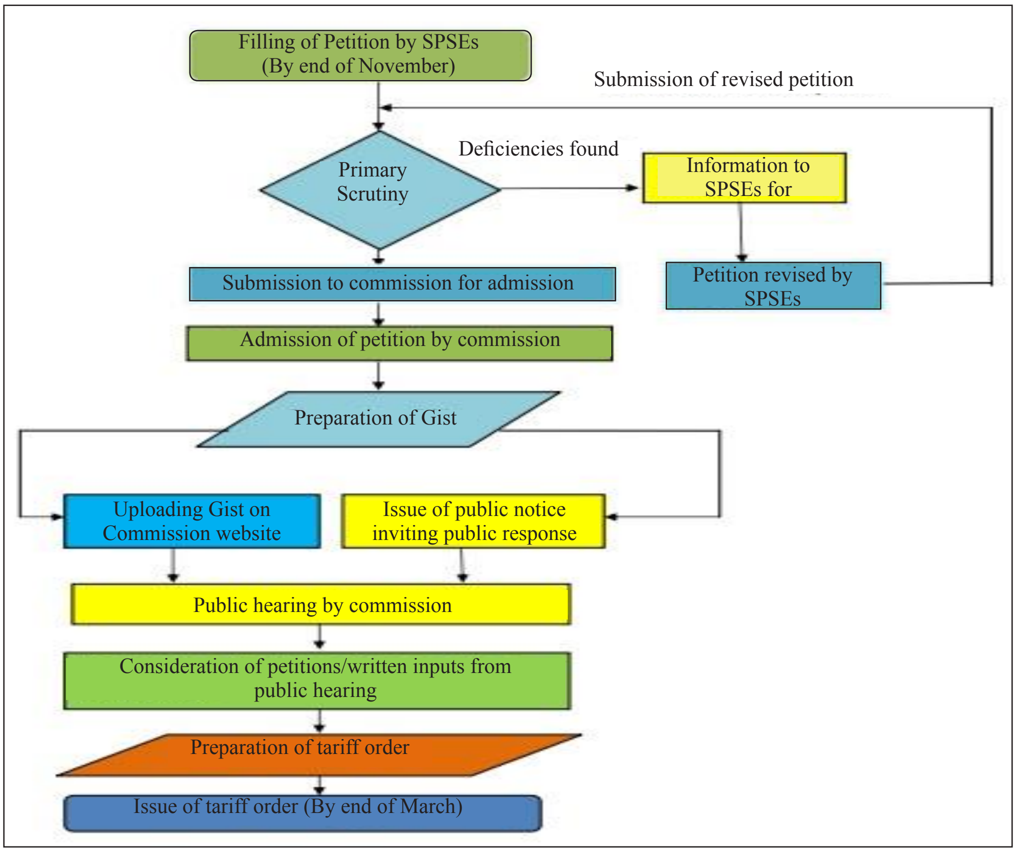
- a licensee would not be able to recover fully all the admissible costs at the tariff determined for a particular year(s) and
- one-time recovery of the entire revenue requirement of the licensee, in that particular year(s) for which tariff is being determined, will not be prudent, due to tariff shock to the consumers; then WBERC may make appropriate provisions in the tariff order, for regulatory assets, thereby allowing recovery of the shortfall through future tariffs. Where WBERC allows creation of a regulatory asset, it is required to reasonably stipulate the period of amortization and the specific roadmap of release of the said regulatory asset, along with the date by which the regulatory asset will be extinguished.

[230] *Para 2.5 of Regulation No. 31/WBERC dated 9 February 2007.*

[231] *ARR refers to the revenue required to be recovered by licensee, through tariff, from consumers.*

As per tariff regulation 2011, issued by WBERC, and Section 64(3) of the Electricity Act, 2003, there is a time schedule for submission of tariff proposals by SPSEs. A composite application, for determination of tariff under the Act, for the entire control period, is to be submitted 120 days in advance of the effective date of the start of the control period. Thus, the MYT applications for the control period are to be made before WBERC by the end of November of the base year of the control period. Further, APR applications are also to be submitted before WBERC, at the end of November of the succeeding financial year. A model time schedule, activities of SPSEs and WBERC relating to tariff proposals, and their rejection/acceptance, is shown in **Chart 3.3**.

Chart 3.3: Flow-chart of tariff/ APR proposals by SPSEs



(Source: Tariff regulations)

Flow chart above depicted the timeframe of tariff/APR application by SPSEs and order issued by WBERC. The delays in submission of APR application by SPSEs, reasons for delay and consequent delay in issue of APR orders of WBERC are discussed in ***Paragraph 3.9.2.***

Audit Findings

3.9 Audit Objective 1: Whether the creation and recognition of regulatory assets was in line with extant policy/ regulations, etc.

In compliance with the Electricity Act 2003, NTP 2006/2016 and WBERC's Terms of Tariff Regulations, 2011, SPSEs should file their tariff/APR/ FPPCA/ FCA applications, before WBERC, in time and exercise judgement in estimating such amounts, using past experience from the issued Tariff/APR orders, including interpretation of the regulations.

3.9.1 Accounting approach followed by SPSEs on creation and booking of regulatory assets

The Indian Accounting Standard (IND AS) 114 on 'Regulatory Deferral Accounts of rate regulated activities', stipulates the financial reporting requirements for regulatory deferral account balances[232]. Further, for Accounting Standards (AS) compliant entities, the Guidance Note on Accounting for Rate Regulated Activities, issued by the Institute of Chartered Accountants (ICAI) in February 2012, is to be followed.

Audit observed that the four SPSEs, *viz*. WBSEDCL, WBPDCL, DPL and WBSETCL, had adopted different accounting approaches, for dealing with regulatory assets & liabilities, in their books of accounts. The divergent approaches adopted by the SPSEs and their presentation in the annual accounts, are summarised below:

WBSEDCL	✓ WBSEDCL followed Ind AS 114, for accounting of RAs. ✓ RAs were shown under 'total assets', as debit balances under the 'Regulatory Deferral Account'. Net movement in the Regulatory Deferral Account Balance was shown in the profit & loss account. ✓ It booked 100% of its claim in the accounts and also claimed carrying-cost[233] on RAs.
WBPDCL	✓ WBPDCL followed Ind AS 114, for accounting of RAs. ✓ It showed receivables under 'Other Current Assets', as 'fuel cost recoverable' and 'fixed cost recoverable'. ✓ It booked 95% of its claim in the accounts and did not claim carrying cost on RAs.
WBSETCL	✓ WBSETCL followed Ind AS 114, for accounting of RAs. ✓ RAs were shown under 'Assets', as debit balances under the 'Regulatory Deferral Account'. Net movement in the Regulatory Deferral Account Balance was shown in the profit & loss account. ✓ It recognised RAs as and when APR orders were issued by WBERC and did not claim carrying cost on RAs.
DPL	✓ Ind AS is not applicable as the net worth is lower than ₹ 250 crore and DPL is not a listed company. Hence, Ind AS has not been adopted. In audited Accounts, DPL shows "Regulatory Assets" under "Other Current Assets" which include both fuel cost & fixed cost, but not shown separately.

Thus, there was an evident lack of uniformity, in the accounting approaches adopted by the SPSEs, in regard to creation and booking of RAs/RRs.

WBPDCL in its reply (November 2022) accepted the audit observation and stated that FCA and APR orders are yet to be passed by the WBERC for 2017-18 onwards. Further, the orders passed before 2017-18 were contested by WBPDCL so RAs were not recognised under regulatory deferral account balances of financial statements.

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[232] *The regulatory deferral account balances are the balances of regulatory assets or regulatory liabilities for an entity, as a result of the actual or expected actions of its regulator, under the applicable regulatory framework. While a regulatory asset is an entity's right to recover fixed or determinable amounts of money towards incurred costs, a regulatory liability is an entity's obligation to refund or adjust fixed or determinable amounts of money.*

[233] *Carrying cost means the interest cost on regulatory assets, to be recoverable from the date of recognition to the actual date of recovery, to avoid the problem of cash flow of DISCOMs.*

WBSEDCL stated that WBSEDCL had followed Ind AS-114 for accounting of Regulatory Assets.

3.9.2 Submission of applications to WBERC

As per Section 96(1) of the Companies Act, 2013, the financial statements of a Company, for every financial year, are required to be finalised within six months from the end of the relevant financial year *i.e.* by end of September. Thus, it is reasonably expected that a company would submit its financial statements positively by the end of June of the next financial year. Delay in submission of Annual Accounts affects submission of APR petitions.

Audit observed that, during 2017-22, all four SPSEs had submitted their annual accounts with delays ranging from 18 to 154 days ***(Appendix –20)***. Such delays affected submission of APR petitions and delayed submission of APR petitions could be expected to adversely affect the financial health of the Companies concerned.

As per tariff regulation 2011, issued by WBERC, and Section 64(3) of the Electricity Act, 2003, a composite application, for determination of tariff under the Act, for the entire control period, is to be submitted 120 days in advance of the effective date of the start of the control period. Further, WBERC directed (March 2015) that, in future, any delay in submission of applications beyond the scheduled period, would result in not providing any increase in tariff for an equal number of days and, thus, any under-recovery will not be passed, while truing up of APR and or FPPCA orders.

Audit also observed that the SPSEs had failed to adhere to the time schedule for filing the APRs before WBERC. Belated submission of APR applications ranged between 7[234] and 725[235] days ***(Appendix-21)***. These delays occurred mainly due to non-preparation of annual accounts in time.

WBPDCL in its reply (November 2022) accepted the audit observation and stated that there was teething problem faced during 2017-19 due to implementation of SAP_ERP. Further, due to pandemic COVID situation, there were delays in finalisation of accounts occurred during 2019-21. Delayed period for the year 2021-22 had been minimised and assured to complete the accounts for the year 2022-23 within time.

In reply (January 2023/ March 2024) WBSEDCL accepted that it had not submitted its' APR applications for the financial year 2017-18 to 2019-20 before 30 November of next financial year but the same were submitted within the extended time period allowed by WBERC.

In reply (April 2023) WBSETCL accepted that there was delay in submission of Annual Accounts and in filing of APR applications, mainly due to restriction imposed for COVID 19.

In further reply, WBSETCL accepted (January 2024) that APR application for the years 2017-18, 2018-19 and 2019-20 were not submitted within scheduled time i.e before 30 November of next financial year. It further stated that APR application for the year 2017-18 was submitted within the extended time period

[234] *APR application for the financial year 2017-18 was submitted by WBSEDCL on 7 December 2018.*

[235] *APR application for the financial year 2018-19 was submitted by WBPDCL on 24 November 2021.*

allowed by WBERC and with delay of five days for the years 2018-19 and 2019-20 from the extended time period.

The reply had to be seen in light of the fact that submission of APR petition beyond scheduled time affected timely issue of APR Order and Tariff Order by WBERC.

3.9.3 Treatment of regulatory assets in Accounts

As per para 3.11.2 of WBERC Tariff Regulation, 2011, the Commission must satisfy itself about necessity of creation of a regulatory asset on the basis of a prayer from a licensee before issuing any direction for creation of such an asset.

WBERC pointed out (September 2014) overstatement of regulatory assets, amounting to ₹ 3,143.34 crore[236], in the book of accounts of WBSEDCL, for the financial year 2012-13. Again, in financial year 2013-14, there was additional accumulation of regulatory assets, amounting to ₹ 2,762.67 crore[237]. WBERC also pointed out that it had not allowed any amount of regulatory assets, in respect of WBSEDCL, for the financial year 2013-14. WBERC also did not agree with the treatment of amount (₹ 5,906.01 crore) as regulatory assets reflected in annual accounts of WBSEDCL, for the financial years 2012-13 and 2013-14.

Further, against booking of regulatory assets amounting to ₹ 18,330.17 crore by WBSEDCL, as of 31 March 2022, WBERC admitted ₹ 4,021.74 crore[238] and adjusted the same with the ARR/Tariff orders for the financial years 2020-21 and 2021-22. Thereafter, APR orders of WBSEDCL, for the financial years 2018-19 and 2019-20, were issued by WBERC in July 2022. An amount of ₹ 3,219.37 crore[239] was also admitted by WBERC, out of which, ₹ 3,111.78 crore[240] was adjusted with the ARR/Tariff, for the financial year 2022-23, from the consumers. Thus, according to WBERC, a balance amount of ₹ 107.59 crore[241], of regulatory assets as on 28 July 2022, was to be recovered/ adjusted from consumers, in the ensuing tariff years.

Para 8.2.2 of NTP, 2016, stipulates that creation of regulatory assets would not be allowed under 'business as usual' conditions. Despite this, WBSEDCL continuously booked regulatory assets in its annual accounts, without approval of WBERC, with the amount of regulatory assets standing at ₹ 18,330.17 crore, as on 31 March 2022, shown as being recoverable since financial year 2013-14 onwards.

In reply (January 2023), WBSEDCL stated that as per their accounting policy, it had recognised income realisable through regulatory mechanism in absence

[236] *Total regulatory assets were shown as ₹ 6,132.65 crore, whereas the APR Order of WBERC, for the financial year 2012-13, had shown the same as ₹ 2,989.31 crore.*

[237] *Difference of regulatory assets between ₹ 8,895.32 crore (as on 31 March 2014) and ₹ 6,132.65 crore (as on 31 March 2013).*

[238] *₹ 1,696.02 crore in financial year 2020-21 and ₹ 2,325.70 crore in financial year 2021-22.*

[239] *₹ 61.83 crore as balance APR adjustment for financial year 2017-18, ₹ 1,256.19 crore as APR adjustment for financial year 2018-19 and ₹ 1,901.35 crore as APR adjustment for financial year 2019-20.*

[240] *₹ 61.83 crore as balance APR adjustment for financial year 2017-18, ₹ 1,256.19 crore as APR adjustment for financial year 2018-19 and ₹ 1,793.76 crore as part APR adjustment for financial year 2019-20.*

[241] *₹ 3,219.37 crore – ₹ 3,111.78 crore.*

of any guideline, issued by WBERC. Moreover, the amounts for each financial year would not match as there was difference in timing recognition of RAs between WBSEDCL and WBERC.

The reply is not acceptable on the ground that as per tariff regulations 2011/2013 of WBERC, until and unless regulatory assets were recognised by WBERC, they cannot be accounted for.

3.9.4 Timeliness in issue of APR Orders

As per the Electricity Act, 2003 and tariff regulations, WBERC is required to issue the APR applicable to one financial year, by 31 March of the subsequent financial year. DoP, GoWB, reviewed (July 2021) the performance of SPSEs and noticed that there were various APR applications pending before WBERC. Due to this, the RAs/RRs of SPSEs were mounting up. Thus, DoP, GoWB, had directed (July 2021) WBERC, under section 108 of the Electricity Act, 2003, to dispose the pending tariff, APR, FPPCA and FCA applications, within a period of three months and thereby complete the truing up process.

Audit observed that, consequent to directions received by WBERC, from GoWB, out of 23, fifteen APR Orders, for the financial years 2014-15 to 2019-20, of different SPSEs were issued between February and July 2022, with significant delays, ranging between 125 days and 2,253 days ***(Appendix-22)*.**

In reply (July 2022/January 2023), WBERC admitted the delay and stated that the settlement of applications of SPSEs is a long drawn procedure, requiring several clarifications. It also stated that the pandemic situation, over the last two years, had also resulted in delays in issuance of orders, adding that WBERC had taken special efforts to clear the backlog applications of SPSEs.

WBERC's reply is not tenable, in view of the fact that the pandemic situation had commenced in India from March 2020 onwards. Out of 15 APR orders issued by WBERC as stated above, applications for 11 APRs had been received before the commencement of the pandemic (***Appendix-22***). These 11 APR applications of SPSEs, pertaining to the financial years 2014-15 to 2017-18, were issued with delays ranging between 1,075 to 2,253 days.

3.9.5 Updation of tariff regulations in line with CERC

CERC frames tariff regulations, in pursuance of Section 3(1) of the Electricity Act, 2003. Further, State Electricity Regulatory Commissions (SERC, herein WBERC) are to be guided by the principles and methodologies specified by CERC, in determination of tariffs applicable to generating and transmission companies. Accordingly, in exercise of the power conferred under Section 178 of the Electricity Act, 2003, CERC framed tariff regulations, which came into force for five years from the date of their commencement. The present tariff regulations of CERC are valid for the period 2019-2024. However, WBERC had framed its tariff regulations in 2007, which were substituted in 2011. Thereafter, new/modified tariff regulations were not issued by WBERC. Instead, amendments[242] were made, from time to time.

[242] *Modified in August 2012 (Regulation 49), July 2013 (Regulation 54) and January 2020 (Regulation 65).*

CERC, in its tariff regulation 2014 (February 2014), introduced the methodology of calculation of energy charges of a generating company, by adopting the gross calorific value (GCV)[243] of coal on receipt basis, *i.e.* after joint sampling by the coal supplier and the generating company, for declaring the actual grade of coal receipt, at the thermal generating station. WBERC, however, determined the energy charges by using the heat value of coal on Useful Heat Value (UHV)[244] basis, *i.e.* the minimum UHV of each notified grade of coal. On scrutiny of the FCA claim, coal bill register and FCA order of the WBERC, it was observed that the UHV values of all grades of coal, were less than the GCV of coal. WBERC adopted the methodology[245] of determination of energy charges (by using GCV of coal on receipt basis, as adopted by CERC) after six years and amended[246] the tariff regulation accordingly. Since GCV is higher than the UHV of coal, adoption of the formula based on GCV implies that lesser quantity coal[247] is required to generate the same quantum of energy. The impact of belated implementation of CERC's methodology by WBERC led to burden of excess fuel cost of ₹ 815.78 crore on consumers for 2016-17 i.e. 34 *paise*/unit as follows in **Table 3.1** below:

Table 3.1: Extra coal cost passed on to consumers

Generating station	Calorific value of coal, in terms of UHV, as determined by WBERC (kCal/kg)	Calorific value of coal, in terms of GCV, as calculated by Audit (kCal/kg)	Coal required to produce the annual generation determined by WBERC (MT)	Coal required on the basis of GCV, as determined by Audit (MT)	Excess coal allowed (MT)	Average price of coal (₹ /MT)	Extra cost passed on to consumers (₹ in crore)
(1)	(2)	(3)	(4)	(5)	6 =(4-5)	(7)	8 = (6 x 7)/ 1,00,00,000
KTPS	3,193.70	3,957.58	50,07,274	40,40,785	9,66,489	3,314.24	320.32
BkTPS	3,880.03	4,419.33	44,54,160	39,10,610	5,43,548	3,658.76	198.87
BTPS	3,802.13	4,512.67	13,26,860	11,17,940	2,08,920	4,246.24	88.71
STPS	3,902.68	4,051.69	23,01,746	22,17,095	84,652	3,378.19	28.60
SgTPS-I	3,889.89	4,583.00	22,07,116	18,73,323	3,33,793	4,278.01	142.80
SgTPS-II	4,098.76	4,737.90	6,13,468	5,30,711	82,756	4,408.47	36.48
Total			**1,59,10,625**	**1,36,90,464**	**22,20,160**		**815.78**

(Source: Annual Accounts, APR Application and APR order)

Thus, by not amending the tariff regulation, in line with CERC's tariff regulations, in time, as stipulated in the Electricity Act, 2003, WBERC allowed excess coal cost of ₹ 815.78 crore, to WBPDCL, for the financial year 2016-17, which, in turn, led to additional tariff burden to consumers.

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[243] *The heat produced in kilocalories (kCal) by complete combustion of one kilogram of coal.*

[244] *Established heat value of fuel, based on the weighted average of the actual quantum of fuel received.*

[245] *GCV for computation of energy charges should be done considering the weighted average 'GCV of coal as received basis', less 120 kCal, on account of variation during storage at generating stations.*

[246] *Vide Regulation 65 dated 21 January 2020 and effected from 1 April 2020 onwards.*

[247] *Total heat (kCal) required from coal to generate energy /weighted average heat value of coal (kCal).*

WBERC, in reply (January 2023) stated that as per Tariff Regulations, 2011, the calculation of fuel cost was on UHV basis. This was amended to GCV in January 2020 in line with CERC Tariff Regulations 2014 (February 2014) wherein calculation of fuel cost was on GCV of coal on receipt basis.

The reply of WBERC was an admission of the undue time taken to amend the regulations. Had the amendment been effected timely, tariff burden on consumers would have decreased by 34 paise/unit[248] in 2016-17.

WBPDCL stated (December 2023) that the State Commission has all the powers and authority to determine the tariff and govern other businesses of WBPDCL as laid down in the said Act.

Reply of WBPDCL did not address the issue of lack of timeliness in amending the tariff regulations by WBERC. Further, WBERC is to be guided by the principles and methodologies specified by CERC, in determination of tariffs applicable to generating and transmission companies. However, with respect to the CERC Tariff Regulations 2014 issued/notified in February 2014, WBERC had belatedly amended its Regulations in January 2020 for calculation of fuel cost, resulting in excess coal cost being allowed by WBERC.

Recommendation 1:

SPSEs should assess the quantum of regulatory assets strictly in line with applicable regulations and recognise them in their books of accounts in accordance with the relevant accounting standards.

3.10 Audit Objective 2: Whether the gap between tariff and costs was being minimised, leading to reduction of regulatory assets.

As per the report of NITI Aayog, GoI (August 2021), most of the power distribution companies in India (DISCOMs) were incurring losses every year, with the quantum of losses having risen to ₹ 90,000 crore in 2021. Due to these accumulated losses, DISCOMS were unable to: (a) pay for generators on time (b) supply high quality uninterrupted power to their consumers (c) build infrastructure, due to lack of funds and (d) meet renewable power obligations, for supplying pollution free renewable energy (since the initial cost of setting up of renewable generating stations and rate of power is high).

Towards improving the situation, a number of Central Government schemes, *viz*. Ujwal DISCOM Assurance Yojana (UDAY), Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY) and Integrated Power Development Scheme (IPDS), had been launched over the years, to: (a) provide electricity 24 x 7, (b) reduce AT&C losses up to 15 *per cent* (c) increase the collection and billing efficiency of the DISCOMS (d) build infrastructure for supplying quality power, in the rural and urban areas in the country and (e) reduce the gap (zero) between the average cost of supply and the average tariff of electricity per unit.

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[248] *(₹ 815.78 crore/24,290.287 MU) x 10.*

3.10.1 Decisions affecting efficiency parameters

(A) Excess power purchase cost allowed by WBERC

Para 5.11 of NTP, 2016[249] *inter alia*, lays down the framework for performance based cost of service regulation, with regard to aspects common to generation, transmission and distribution. Except for the cases referred to in para 5.11(h)(2)[250], the operating parameters in tariffs should be at "normative levels".

As per Schedule 9J of WBERC Tariff Regulations, 2011, the norm for distribution losses is 17.50 *per cent*. As per amendment (July 2013) to the tariff regulations, for excess distribution losses beyond the normative distribution losses, the disallowance on account of excess power purchase costs, due to distribution losses exceeding the norms for distribution losses will be limited to an amount equal to the sum of return on equity (ROE) and the net UI[251] (unscheduled interchange) receivable amount.

As observed from the FPPCA order for WBSEDCL, for the financial year 2017-18, issued by WBERC on 16 March 2022, the actual distribution loss of WBSEDCL, for the financial year 2017-18 was 26.69 *per cent,* against the normative distribution loss of 17.50 *per cent*. The excess power purchase cost, due to excess distribution loss, was ₹ 1,451.33 crore. However, WBERC restricted the disallowance to ₹ 372.36 crore, which was equal to the ROE of financial year 2017-18. This action was not in consonance, with NTP, 2016, which aimed at progressively reflecting increased efficiencies. Similarly, in the APR Order of WBSEDCL, for the financial year 2018-19, against the excess power purchase cost of ₹ 982.23 crore, WBERC restricted the disallowance to ₹ 372.36 crore, which was equal to the ROE of financial year 2018-19.

As per NTP 2016, the amount of disallowance due to T&D loss in excess of norms, for the years 2017-18 and 2018-19, should be ₹ 2,433.56 crore (₹ 1,451.33 crore + ₹ 982.23 crore). However, as per the WBERC tariff regulations 2011/2013, WBERC disallowed only ₹ 744.72 crore (₹ 372.36 crore + ₹ 372.36 crore). Thus, the amount disallowed fell short by ₹ 1,688.84 crore (₹ 2,433.56 crore – ₹ 744.72 crore), and an amount of ₹ 1,688.84 crore[252], representing excess power purchase costs, was passed on to consumers, by not adhering to NTP 2016.

WBERC, in reply (January 2023) stated that excess power purchase cost was disallowed over normative distribution loss, as per provision in the Tariff Regulations, 2011, as amended in July 2013.

The reply of WBERC did not address the fact that WBERC had benchmarked (April 2011) distribution losses at 17.50 *per cent*. Moreover, according to NTP 2016, where prevailing operations were much below the norms, initially the revenue requirement should be determined at "relaxed" levels, but WBERC had continued with the existing norm for distribution losses. Besides, WBERC's

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249 *Para 5.3 (f) of the erstwhile National Tariff Policy, 2006.*

250 *Para 5.3 (h)(2) of the erstwhile National Tariff Policy, 2006.*

251 *UI is the mechanism developed to improve grid efficiency, grid discipline, accountability and responsibility, by imposing charges on those who defer from their scheduled generation or drawal.*

252 ₹ *{(1,451.33 + 982.23) – (372.36+372.36)}.*

regulation was in deviation of the NTP 2016, which stated that proven inefficiency needed to be penalised. However, WBERC restricted disallowance of excess power purchase cost (₹ 744.72 crore) to the aggregate of RoE and net UI charges, instead of the entire amount (₹ 2,433.56 crore)[253] arising from distribution loss in excess of 17.50 *per cent*. Consequently, WBERC had burdened consumers with ₹ 1,688.84 crore, by admitting WBSEDCL's inefficiency, contrary to the NTP 2016.

(B) Injudicious fixation of operating norms for SgTPS Stage-II units

CERC frames tariff regulations, in pursuance of Section 3(1) of the Electricity Act, 2003. Further, State Electricity Regulatory Commissions (SERC, herein WBERC) are to be guided by the principles and methodologies specified by CERC, in determination of tariffs applicable to generating and transmission companies.

Audit observed that while fixing the operating norms of Sagardighi Thermal Power Station (SgTPS), units III and IV (SgTPS stage-II) by WBERC, different norms were applicable for varying periods of time. The details are shown in **Table 3.2** below:

Table 3.2: Operating norms for Sagardighi TPS

Operating Norms	Fixed by WBERC in July 2013	Fixed by WBERC in July 2017 (on the basis of CERC Tariff regulations, 2014)	Fixed by WBERC in July 2021(on the basis of review applications of WBPDCL)
AEC (in percentage)	9.00	5.25	9.00
Station Heat Rate[254] SHR (kCal/kwh)	2,276	2,276	2,424

(Source: Tariff Regulation, Tariff order, APR order and other order)

It is evident from the above that-

- Based on the amended (July 2013) tariff regulations, WBERC had fixed the operating norms (AEC – 9 *per cent* and SHR – 2,276 kCal/kwh) of the Sagardighi Thermal Power Station (SgTPS), units III and IV (SgTPS stage-II). These two units, with a capacity of 500 MW each, had commenced commercial operations from July 2016 and December 2016 onwards, respectively.
- WBERC fixed (July 2017) the operating norms of SgTPS Stage II, *viz*. AEC and SHR were fixed as 5.25 *per cent* and 2,276 kCal/kwh, respectively. This was at par with the CERC Tariff Regulations, 2014, issued in February 2014.
- WBPDCL submitted a review application (February 2021) before WBERC, to fix an appropriate SHR for SgTPS Stage II. WBERC thereafter altered (July 2021) the AEC norms to 9 *per cent*. In its subsequent order (April 2022), WBERC reduced the SHR from 2,276 kCal/kwh to 2,424 kCal/kwh.

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[253] *(₹ 1,451.33 crore + ₹ 982.23 crore).*

[254] *The heat energy input required at a TPS in Kilo Calorie (Kcal) to generate one kilo watt hour (kwh) of electrical energy.*

- o WBERC issued (July 2022) the APR and FCA orders, for the financial year 2016-17, on the basis of the revised operating norms (AEC & SHR).

In this regard, Audit observed the following:

- o In its review application (February 2021), WBPDCL had only prayed for a higher SHR, for SgTPS Stage II. The application had not made any mention of AEC norms, implying that WBPDCL had accepted the AEC norm of 5.25 *per cent* fixed by WBERC in July 2017. However, in July 2021, WBERC fixed the AEC norm at 9 *per cent,* unilaterally.
- o SgTPS stage-II had not crossed the AEC norm of 9 *per cent* since inception of its commercial operations, with the AEC having ranged from 5.75 to 7.38 *per cent*[255], during financial years 2017-18 to 2020-21. Being a new unit, having capacity of 500 MW, its AEC should have been fixed considering its design specifications and as per the norms stipulated by CERC in its tariff regulation, 2014.

Thus, WBERC had amended the AEC and SHR norms, to the benefit of WBPDCL. The higher norms of AEC and SHR had resulted in excess fuel cost of ₹ 367.98 crore being allowed by WBERC, which eventually increased the tariff burden on consumers, during the financial years 2016-17 to 2020-21.

WBERC, in reply (January 2023), stated that, as per its order dated April 2022, the operating norms of SgTPS Stage II are fixed in the tariff regulations and any gains arising from better performance over applicable norms, are shared with the beneficiaries.

However, WBERC had fixed the operating norms for SgTPS stage II units on the lower side, as compared to the CERC Tariff Regulation, 2014 (issued in February 2014) and WBERC's earlier order (July 2017). Thus, WBERC had burdened consumers with additional tariffs, amounting to ₹ 367.98 crore.

(C) Non-consideration of actual transmission loss by WBERC

Para 5.11 of NTP, 2016[256], *inter alia, lays* down the framework for performance-based cost of service regulation, in respect of aspects common to generation, transmission and distribution. The norms are referred to be efficient, relatable to past performance, capable of achievement and are to progressively reflect increased efficiencies. Further, the operating parameters in tariffs should be at "normative levels" only and not at "lower of normative and actuals", with appropriate arrangement for sharing the gains of efficient operations with the consumers.

As per Schedule 9K of the WBERC Tariff Regulations, 2011, the norm of transmission loss (TL), for transmission licensees (here, WBSETCL), is 3.40 *per cent*. Against these norms, WBSETCL achieved transmission loss of 2.29 to 2.76 *per cent,* during 2017-21. However, WBSEDCL calculated its T&D losses after deducting the normative TL (3.40 *per cent*), which was admitted by WBERC, while issuing the FPPCA orders of WBSEDCL. Since, actual T&D losses were more than the T&D losses admitted by WBERC as shown below, the T&D losses, as well as the excess power purchase costs were under reported.

[255] *7.38 per cent (2017-18), 6.42 per cent (2018-19), 6.69 per cent (2019-20) and 5.75 per cent (2020-21).*

[256] *Para 5.3 (f) of the erstwhile National Tariff Policy, 2006.*

Table 3.3 shows the T&D losses of WBSEDCL, calculated and admitted by WBERC, in its orders up to financial year 2019-20, *vis-à-vis* the actual T&D losses, after considering the actual TL losses incurred by WBSETCL, during 2017-21.

Table 3.3: TL and T&D losses, considered by WBERC, *vis-à-vis* the actual TL and T&D losses

Financial year	Transmission Loss (TL) and Transmission and Distribution loss (T&D), considered by WBSEDCL & WBERC (in *per cent*)		Actual TL and T&D loss (in *per cent*)		Under/(Over) reported TL and T&D loss (in *per cent*)	
	TL	T&D	TL	T&D	TL	T&D
(1)	(2)	(3)	(4)	5=(3+2-4)	6 =(4-2)	7= (5-3)
2017-18	3.40	26.69	2.76	27.33	(0.64)	0.64
2018-19	3.40	23.00	2.48	23.92	(0.92)	0.92
2019-20	3.40	18.56	2.61	19.35	(0.79)	0.79
2020-21*	3.40	20.89	2.29	22.00	(1.11)	1.11

(Source: Secure meter data and Annual Reports of WBSEDCL, figures in brackets showing over reported loss)

**Order by WBERC is yet to be issued*

Thus, WBERC failed to adhere to NTP 2016, by considering the actual operating performance, instead of past performance, allowing WBSEDCL to show lower T&D loss. As a result, there was under reporting of the energy available for sale by WBSEDCL. The under reporting of energy available had implications on the per unit energy cost, as shown in **Table 3.4**.

Table 3.4: Energy (MU) under reported by WBERC during financial years 2017-18 to 2019-20

Financial year	Net purchased energy available with WBSEDCL for distribution, calculated by WBERC (MU)	Net purchased energy available with WBSEDCL for distribution, calculated by Audit (MU)	Energy under reported (MU)
(1)	(2)	(3)	4 = (3-2)
2017-18	33,592.048	33,843.922	251.874
2018-19	34,525.990	34,900.275	374.285
2019-20	36,741.960	37,082.405	340.445

(Source: WBERC's tariff orders)

This resulted in under-reporting of excess power purchase cost of ₹ 387.72 crore[257] during 2017-2020, thereby increasing the tariff burden of consumers to the same extent.

WBERC, in reply (January 2023), stated that it had allowed normative transmission loss, since WBSETCL failed to provide actual transmission loss, duly certified by SLDC.

[257] ***2017-18**: 251.874 MU x 373.32 paise; **2018-19**: 374.285 MU x 408.65 paise; **2019-20**: 340.445 MU x 413.39 paise*

The reply of WBERC shows that the actual TL loss which is available at SLDC, and which, in turn, is under the administrative control of WBSETCL, could have been easily made available. Moreover, the reported T&D loss of WBSEDCL, mentioned in **Table 3.3**, will increase, if the actual transmission loss of WBSETCL is considered.

In reply (January 2023), WBSEDCL stated that, as a Distribution Licensee, WBSEDCL is paying the power purchase cost based on the implemented schedule and, subsequently, deviation from the implemented schedule is trued up, based on the meter reading of interface meter of transmission system. Hence, there is no scope of passing excess power purchase costs.

The reply of WBSEDCL overlooks the issue that had the actual TL loss been taken into account, the T&D loss would increase. Moreover, WBSETCL has been efficient in performance, but WBERC had not revised the norms to progressively reflect the increased efficiencies in transmission losses. Besides, WBERC has not prescribed the gain-sharing ratio between WBSETCL and consumers. Consequently, better performance of WBSETCL (transmission licensee), by achieving lower TL losses (ranging between 2.29 *per cent* and 2.76 *per cent* during 2017-21), as compared to norms (3.40 *per cent*), was neither reflected in WBSEDCL's account, nor admitted by WBERC. Thus, the excess power purchase cost was allowed by WBERC. This under-reporting of T&D losses resulted in avoidable purchase of power to meet the demand of consumers, leading to extra power purchase costs with no benefit accruing to the consumers.

3.10.2 Reduction in Transmission and Distribution (T&D) losses

The Aggregate Technical and Commercial (AT&C)[258] loss and Transmission and Distribution (T&D) loss[259] act as yardsticks for measurement of performance of DISCOMs. In October 2002, the Hon'ble Supreme Court[260] of India had upheld that it was the duty of a licensee to reduce T&D losses. Further, WBERC had fixed 17.50 *per cent* as the normative T&D loss for WBSEDCL, in its tariff regulation and tariff orders for the period 2017-22.

Against this, T&D losses considered by WBSEDCL & WBERC were 26.69, 23.00, 18.56, 20.89 and 15.11 *per cent*, during the respective years of the period 2017-22. Thus, WBSEDCL failed to achieve the targeted T&D loss fixed by WBERC, in four out of five years covered by Audit. Non-achievement of the targeted T&D loss resulted in: (a) excess power being required to meet the demand of consumers (b) extra costs being incurred for additional power purchase, affecting the financial health of WBSEDCL and (c) extra power purchase costs being disallowed by WBERC, in line with the tariff regulations. Thus, an amount of ₹ 1,688.84 crore, representing excess power purchase costs, was passed on to consumers, due to higher T&D losses as indicated in ***Paragraph 3.10.1(A)***.

GoWB had participated in Central sponsored schemes, *viz*. DDUGJY, SAUBHAGYA and Integrated Power Development Scheme (IPDS) aimed at

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[258] *AT&C loss means gap between energy input and the energy for which revenue is actually realised from the consumers.*

[259] *T&D loss means gap between energy input and energy billed to the consumers.*

[260] *Vide a case between WBERC and CESC, a private DISCOM in West Bengal.*

creating infrastructure in urban and rural areas and providing last mile connectivity to power for all. The funding patterns were 60, 30 and 10 *per cent* from Central, State and own fund. Audit observed that, in spite of considerable funds, amounting to ₹ 5,004.59 crore[261], having been received from GoI under these schemes, and an amount of ₹ 6,705.42 crore[262] {balance amount (₹ 1700.83 crore) received from GoWB and own funds} having been expended there-against, to strengthen the distribution infrastructure in urban and rural areas, till 2020-21, the T&D losses remained higher than the norms fixed by WBERC. Further, in 32, out of 77 divisional offices, the AT&C losses were more than 30 *per cent*. The higher AT&C and T&D losses had occurred mainly due to: (a) poor billing efficiency[263] (b) defective meters, for which average bills were raised (c) failure of Distribution Transformers (DTRs) and overloaded DTRs and (d) long feeders & lines and overloaded feeders/lines.

In reply (January 2023) WBSEDCL stated that various steps were taken to reduce the T&D and AT&C losses which ultimately came down from 30.78 *per cent* and 35.98 *per cent* from 2015-16 to 15.11 *per cent* and 16.65 *per cent* in 2021-22 respectively.

3.10.3 Effect of operational performance on Regulatory Assets

MoP, GoI, had announced (December 2014) a Comprehensive Award Scheme for Meritorious Performance in the Power Sector, for thermal power stations, with a view to according recognition to power stations, based on their all-round performance, by integrating the four operational parameters, *viz*. Station Heat Rate (SHR)[264], Auxiliary Power Consumption (APC), Specific Secondary Fuel Oil Consumption (SOC)[265] and peaking Plant Load Factor (PLF). WBERC also fixed operating norms for generating stations, through its tariff regulations. Generating Companies claimed fixed costs as per their actual expenditure in the APR application. WBERC by applying prudence check with its applicable tariff regulations, first determined the amount to be receivable by the entity. Thereafter, WBERC determined the admitted amount as per actual PAF achieved against normative PAF. Non-achievement of the targeted operational norms resulted in: (a) excess fuel[266] being required to produce power (b) extra costs being incurred for procuring excess fuel, affecting the financial health of WBPDCL and DPL and (c) extra fuel costs being disallowed by WBERC, in line with tariff regulations.

(A) WBPDCL

WBERC issued FCA and APR orders, for the period from financial year 2013-14 to financial year 2016-17, in regard to WBPDCL, between

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261 *DDUGJY – ₹3,061.70 crore, Saubhagya –₹187.87 crore; IPDS – ₹1,755.02 crore.*

262 *DDUGJY – ₹3,565.95 crore, Saubhagya –₹246.25 crore; IPDS – ₹2,893.22 crore.*

263 *Billing efficiency is an indicator of the proportion of energy that has been billed to consumers, in comparison to the energy supplied in that area.*

264 *SHR is a parameter to assess the efficiency of a thermal power station. It represents the heat energy required in Kilo Calories (Kcal) to generate one kilo watt hour (kwh) of electrical energy.*

265 *SOC represents the consumption of fuel oil (in ml) required to generate one kilo watt hour (kwh) of electrical energy.*

266 *Coal and oil.*

August 2017 and July 2022. Scrutiny of records pertaining to the Annual Accounts of WBPDCL, the FCA and APR applications for the financial years 2013-17 and WBERC's orders, indicated the following:

(a) Excess consumption of fuel

The operational performance of the generating stations of WBPDCL, for the period 2013-17, is shown in **Table 3.5** below:

Table 3.5: Operational performance of generating stations of WBPDCL

Generating Station	Operational parameter	Norm	Actual			
			2013-14	2014-15	2015-16	2016-17
KTPS	APC	9.60	11.21	10.40	11.13	10.85
	SOC	2.00	2.36	1.09	2.72	2.02
	SHR	2,700.00	2,752.53	2,995.00	2,757.00	2,735.00
BkTPS	APC	9.00	10.18	9.34	10.19	9.95
	SOC	1.30	2.13	1.01	2.15	0.76
	SHR	2,470.00	2,514.70	2,494.00	2,509.00	2,489.00
BTPS-I	APC	10.40	12.85	11.91	14.53	11.48
	SOC	2.50	12.65	8.69	11.94	6.66
	SHR	3,050.00	3,173.55	3,174.00	3,077.00	3,013.00
BTPS-II	APC	9.00	Not Applicable		14.53	No separate order was issued and claim made
	SOC	1.75			11.94	
	SHR	2,430.00			3,077.00	
STPS	APC	9.00	9.85	9.09	8.66	8.26
	SOC	1.00	1.61	1.74	0.69	0.26
	SHR	2,425.00	2,445.64	2,465.00	2,594.00	2,496.00
SgTPS-I	APC	9.00	12.51	10.85	13.39	12.77
	SOC	1.00	1.32	0.90	2.03	1.01
	SHR	2,345.00	2,376.70	2,956.00	2,580.00	2,375.00
SgTPS-II	APC	9.00	Not Applicable			6.94
	SOC	1.00				10.44
	SHR	2,424.00				2,491.00

(Source: FCA/ APR orders)

Note: Norms unit APC in per cent, SOC in ml/kWh and SHR in Kcal/kWh

SgTPS-II operating norms in Tariff order 2016-17 were APC-5.25 and SHR- 2,276. APC was later revised to 9 per cent in tariff order 2018-20 (July 2021) and SHR was revised to 2424 in April 2022 and while determining FCA for the year 2016-17, revised norms were considered by WBERC

It is evident from the above that:

- ✓ Auxiliary Power Consumption (APC) of all generating stations was higher than the norms fixed by WBERC, except in STPS (2015-16 and 2016-17) and SgTPS-II (2016-17).
- ✓ Specific Oil Consumption (SOC) of all generating stations was higher than the norms fixed by WBERC, except in KTPS (2014-15), BkTPS (2014-15 and 2016-17), STPS (2015-16 and 2016-17), and SgTPS-I (2014-15).
- ✓ Station Heat Rate (SHR) of all generating stations was higher than the norms fixed by WBERC.

Non-achievement of the targeted operational norms, fixed by WBERC, resulted in consumption of excess fuel[267] by WBPDCL, during 2013-17 (as tabulated in **Table 3.6**).

Table 3.6: Excess fuel cost disallowed by WBERC

Particulars	2013-14	2014-15	2015-16	2016-17
Excess consumption of coal (MT)	17,83,328.20	14,20,930.56	6,38,840.20	7,83,065.39
Excess cost on coal disallowed (₹ in crore)	553.83	383.76	216.51	295.13
Excess consumption of oil (KL)	25,438.83	321.24	18,492.58	11,766.91
Excess cost on oil disallowed (₹ in crore)	145.78	1.05	102.41	42.64
Total fuel cost disallowed (₹ in crore)	699.61	384.81	318.92	337.77

(Source: FCA/ APR orders)

Thus, non-achievement of targeted norms resulted in incurring of extra cost by WBPDCL, on account of excess fuel, which was also disallowed by WBERC to the extent of ₹ 1,741.11 crore.

WBPDCL in its reply (November 2022) stated that an amount of ₹ 757.35 crore was disallowed by WBERC. However, orders of WBERC for the period 2013-17 had been challenged by WBPDCL and applications filed before APTEL.

The audit observation was based on the actual consumption of fuel incurred by WBPDCL, whereas WBPDCL had restricted its claim to fuel consumption, based on the norms in the FCA application submitted to WBERC. Thus, while WBERC had disallowed claim of ₹ 757.35 crore, WBPDCL had not claimed ₹ 983.76 crore, adding up inadmissible fuel costs of ₹ 1,741.11 crore, for the period from 2013-14 to 2016-17.

(b) Non-recovery due to poor Plant Availability Factor

The Plant Availability Factor (PAF) of a power plant is the amount of time that it is able to produce electricity over a certain period. WBERC, in its Tariff Regulation (April 2011), *vide* Schedule 9A, fixed the PAF of each generating station. **Table 3.7** shows the normative and actual PAF, as well as the fixed costs claimed and allowed by WBERC, during 2013-17.

Table 3.7: Year-wise fixed costs of WBPDCL admitted by WBERC

Financial Year*	Normative PAF (*per cent*)	Actual PAF (*per cent*)	Fixed costs claimed by WBPDCL	Fixed costs considered by WBERC, based on the normative PAF	Fixed costs admitted by WBERC, considering the actual PAF	Fixed costs disallowed due to poor PAF
			(₹ in crore)			
(1)	(2)	(3)	(4)	(5)	(6)	7=(5-6)
2013-14	85.00	70.50	2,412.42	2,232.57	2,044.26	188.31
2014-15	85.00	71.85	2,553.56	2,197.31	2,065.55	131.76
2015-16	85.00	60.62	2,557.43	2,077.85	1,687.01	390.84
2016-17	85.00	67.54	3,180.64	2,918.20	2,411.65	506.55
Total			**10,704.05**	**9,425.93**	**8,208.47**	**1,217.46**

(Source: FCA/ APR orders)
**APR orders issued up to September, 2022.*

[267] *Excess consumption of **coal** – 46,26,160.50 MT and **oil** – 60,788.09 KL.*

Audit observed that, due to the poor PAF of the generating stations of WBPDCL, out of the total fixed cost of ₹ 10,704.05 crore, claimed by WBPDCL, WBERC considered ₹ 9,425.93 crore as the claim, based on normative costs, in the APR orders of 2013-17. Due to non-achieving of the normative PAF by WBPDCL, WBERC admitted ₹ 8,208.47 crore only. Thus, due to non-achieving of the normative PAF, ₹ 1,217.46 crore was disallowed.

Scrutiny of records showed that WBPDCL attributed the poor performance of the generating stations, in its APR applications before WBERC, mainly to: (a) ageing effect of the generating stations of KTPS[268] and BTPS[269] (b) poor coal quality and (c) frequent forced outages.

WBPDCL in its reply (November 2022) accepted the audit observation and stated that due to shortage of coal received from coal companies during 2013-15 and post de-allocation of coal blocks (April 2015), WBPDCL was entirely dependent on the supplies of coal from Coal India Limited, hence it failed to attain the normative PAF. However, after receipt of captive coal mines and starting of coal extraction from mines, their PAF had improved to 86 *per cent* during 2021-22.

WBPDCL in its latest reply (December 2023), reiterated that deallocation of mines led to scarcity in availability of coal and issues in quality of coal supplied by Coal India Limited (CIL) resulted in excess consumption of coal.

On the issue of quality of coal supplied by CIL, the Performance Audit on Fuel Management in Thermal Power Stations of West Bengal which was incorporated in Audit Report of the C&AG (Performance and Compliance Audit) for the year ended 31 March 2019-20, had already covered issues/findings in this regard.

(B) DPL

WBERC issued FCA and APR orders, for the period from financial year 2013-14 to financial year 2015-16, in regard to DPL between February 2017 and July 2022. Scrutiny of records pertaining to the Annual Accounts of DPL, FCA and APR applications for the financial years 2013-16 and WBERC's orders, indicated the following:

(a) Excess consumption of fuel

The operational performance of the distribution functions of DPL, for the period 2013-16, is tabulated in **Table 3.8**.

Table 3.8: Operational performance of DPL

Sl. No.	Particulars	Financial year		
		2013-14	2014-15	2015-16
1	Normative T&D loss (*per cent*)	5.20	5.20	5.20
2	Actual T&D loss (*per cent*)	5.33	5.72	5.21
3	Normative APC (*per cent*)	9.30	8.61	8.73
4	Actual APC (*per cent*)	11.47	13.35	10.75
5	Normative SHR (kCal/Kwh)	2,747.00	2,425.00	2,425.00
6	Actual SHR(kCal/Kwh)	3,273.18	3,098.84	2,534.96
7	Excess quantum of energy purchased (MU)	36.73	10.60	1.01

[268] *Six units of 210 MW each were commissioned between 1984 and 1993.*

[269] *Four units of 60 MW each and one unit of 210 MW, were commissioned in 1965-66 and 1982, respectively.*

Sl. No.	Particulars	Financial year		
		2013-14	2014-15	2015-16
8	**Excess cost of power purchased, disallowed by WBERC (₹ in crore)**	**12.10**	**5.13**	**0.44**
9	Actual coal consumption (₹ in crore)	400.44	284.30	440.84
10	Normative coal consumption (₹ in crore)	304.70	207.40	369.25
11	**Excess coal consumption disallowed (₹ in crore)**	**95.74**	**76.90**	**71.59**
12	Actual oil consumption (₹ in crore)	61.51	22.72	25.43
13	Normative oil consumption (₹ in crore)	15.97	7.29	9.66
14	**Excess oil consumption disallowed (₹ in crore)**	**45.54**	**15.43**	**15.77**
15	Total fuel and power purchase cost disallowed (₹ in crore) (8+11+14)	153.38	97.46	87.80

(Source: FCA/ APR orders)

Thus, against the targeted 5.20 *per cent* of T&D loss, fixed by WBERC, DPL achieved a marginally higher T&D loss (ranging between 5.21 to 5.72 *per cent*), which resulted in excess power purchase cost of ₹ 17.67 crore. Further, due to non-achievement of the operational norms fixed by WBERC (*viz*. SHR and APC), extra fuel cost of ₹ 320.97 crore was not recovered.

DPL in its reply (November 2022) accepted the audit observation and stated that action had been taken to reduce the T&D loss from 5.33 *per cent* (2013-14) to 4.32 *per cent* (2016-17). Further, during 2013-16, SHR and APC were in excess of norms due to low station PLF, low load factor, frequent tripping, insufficient coal supply, etc that were beyond their control.

(b) Non-recovery due to poor PAF

In terms of regulation 6.4.2 of the tariff regulations of WBERC (April 2011), the recovery of fixed costs, for the generating stations of DPL, is to be made against the targeted availability. Schedule 9A of the tariff regulations sets the PAF of DPL at 79 *per cent* in 2013-14 and 85 *per cent* during 2014-16. **Table 3.9** shows the normative and actual PAF, as also the fixed costs claimed and allowed by WBERC, during 2013-16.

Table 3.9: Year-wise fixed costs of DPL, admitted by WBERC

Financial Year*	Normative PAF *(per cent)*	Actual PAF *(per cent)*	Fixed costs claimed by WBPDCL	Fixed costs considered by WBERC, based on the normative PAF	Fixed costs admitted by WBERC, considering the actual PAF	Fixed costs disallowed, due to poor PAF
			(₹ in crore)			
(1)	(2)	(3)	(4)	(5)	(6)	7=(5-6)
2013-14	79.00	56.18	609.16	539.44	419.43	120.01
2014-15	85.00	29.33	675.96	526.40	273.74	252.66
2015-16	85.00	37.49	877.61	689.83	401.29	288.54
Total			**2,162.73**	**1,755.67**	**1,094.46**	**661.21**

(Source: FCA/ APR orders)
**APR orders issued up to September, 2022.*
Note: For 2013-14, WBERC had fixed the normative PAF at 79.00 per cent, based on the age profile of the generating units of DPL.

Audit observed that, due to the poor PAF of the generating stations, out of the total fixed costs of ₹ 2,162.73 crore, claimed by DPL, WBERC considered ₹ 1,755.67 crore only as the claim, in its APR orders of 2013-16. Due to non-achievement of the targeted PAF by DPL, WBERC admitted ₹ 1,094.46 crore. Thus, non-achievement of the targeted PAF, led to an amount of ₹ 661.21 crore[270] having been disallowed.

Scrutiny of records showed that the DPL had attributed the poor performance of its generating stations, in its APR applications before WBERC, mainly to: (a) the ageing effect of Unit-7[271] and (b) poor coal quality, containing higher ash, causing frequent outages.

While accepting audit observation, the DPL stated (November 2022) that running old generating units, non-availability of coal, delay in undertaking overhauling and frequent outages resulted in achieving of poor PAF when compared to norms fixed by WBERC.

3.10.4 Carrying cost of Regulatory Assets

As per Section 110 of the Electricity Act, 2003, the Central Government shall, by notification, establish an Appellate Tribunal, to be known as the Appellate Tribunal for Electricity (APTEL), to hear appeals against the orders of the adjudicating officer or the Appropriate Commission under the Act. APTEL directed (November 2011) all State Electricity Regulatory Commissions to allow the carrying cost[272] of regulatory assets to the utilities, in the ARR of the year in which the regulatory assets are created, to avoid the problem of cash flow to the distribution licensees.

Since, DISCOMs face cash flow problems for procuring power and to meet their day to day operations, early order for recovery of regulatory assets would help to reduce the cash burden. Accordingly, due to delays in recovery of regulatory assets, DISCOMs were compelled to take short/long term loans, which attract interest. Regulation 5.6.5.4 of the Tariff Regulations 2011 provides that WBERC may allow, if considered necessary, interest on temporary financial accommodation taken by the generating company/licensee from any source to a reasonable extent of unrealised arrears from the consumers/beneficiaries.

For financial year 2017-18, WBSEDCL had claimed carrying cost of ₹ 2,158.51 crore, on its regulatory assets. However, WBERC decided not to consider this carrying cost, on the ground that there was no provision for allowing carrying cost, in the tariff regulations made by WBERC. Further, WBERC, in its letter (October 2019) to the Forum of Regulators (FOR)[273], stated that, for WBSEDCL, no regulatory assets had been created for the period 2015-16 to 2017-18. Since regulatory assets were not created by WBERC for the given period, thus, carrying costs on them were also not allowed.

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[270] *₹ 1,755.67 crore minus ₹ 1,094.46 crore.*

[271] *Unit-7 of 300 MW was commissioned in 2008.*

[272] *The interest expenses, on regulatory assets, from the date of their recognition by WBERC, to the date of the recovery order issued thereagainst.*

[273] *As per the NTP 2006/2016, the FOR had been constituted by the Central Government, under the provisions of the Act, which would, inter alia, facilitate consistency in approach, specially in the area of distribution.*

Despite the above directions, WBSEDCL contested the APR order (which had disallowed ₹ 2,158.51 crore) of WBERC for the financial year 2017-18 and preferred an appeal before APTEL[274]. As per records made available to Audit, the petition was pending as of October 2022 before APTEL. Further, WBSEDCL had claimed an amount of ₹ 1,787.19 crore[275], as carrying cost on regulatory assets, through its APR applications for the subsequent financial years 2018-19 and 2019-20. WBERC in its APR orders (July 2022), for the financial years 2018-19 and 2019-20, again disallowed carrying costs, on grounds that: (a) WBSEDCL had not resorted to additional borrowings, to meet the gap, in the absence of release of the regulatory assets claimed and (b) WBSEDCL had not claimed interest on temporary accommodation[276], as laid down in the regulation 5.6.5.4 of tariff regulations 2011.

In reply (January 2023), WBSEDCL stated that, in the financial years 2011-12 and 2012-13, WBERC had allowed the carrying costs on regulatory assets. However, the carrying costs on regulatory assets were not allowed by WBERC, for which WBSEDCL preferred a petition before APTEL. The matter is pending.

The reply, however, did not consider that regulatory assets for the period 2015-16 to 2019-20 were required to be created by WBSEDCL, with prior approval of WBERC. The regulatory assets created in 2011-12 and 2012-13, were approved by WBERC in September 2013 and June 2014, respectively. Consequently, WBERC had admitted carrying costs. Moreover, WBSEDCL had not been able to substantiate that it had resorted to additional borrowings or temporary accommodation on account of regulatory assets, during 2018-19 and 2019-20. Hence, the possibility of interest on regulatory assets being admitted, was remote.

3.10.5 Partial recovery of costs relating to controllable items

WBERC, in its tariff regulations[277], segregated the items of Annual Revenue Requirement (ARR), into two categories i.e. ‘controllable[278]’ and ‘uncontrollable[279]’. The chances of recovery of actual expenditure, through tariff, is remote, if the excess expenditure incurred falls under ‘controllable’ items. On scrutiny of the APR applications and annual accounts of WBSEDCL and WBSETCL, along with the APR orders of WBERC, Audit observed that, failure of these SPSEs, to control the admitted controllable fixed charges (as defined in the tariff orders of WBERC), had resulted in incurring of excess expenditure, which was ultimately disallowed by WBERC, through its APR orders.

[274] *Vide DFR No. 148 of 2022 dated 28 April 2022.*

[275] *₹ 784.74 crore in financial year 2018-19 and ₹ 1,002.45 crore in financial year 2019-20.*

[276] *Temporary accommodation means temporary/short term financial loan, taken from a lending agency, to a reasonable extent of the arrears unrealised from the consumers / beneficiaries.*

[277] *Amended on 25 April 2011, vide Regulation 48/WBERC.*

[278] *Controllable items means those elements of ARR for which the entitlement is controllable or the expenditure can be controlled by the concerned licensee or generating company for whom ARR is determined at the amount for such element permitted by WBERC in the tariff order, subject to specific conditions, as permitted under tariff regulations.*

[279] *Uncontrollable items means those elements of ARR for which expenditure depends on certain external factors and which are not fully controllable by the licensee or generating company.*

Table 3.10 along with ***Appendix-23*** shows the year-wise excess fixed charges of SPSEs, disallowed by WBERC and the reasons thereof.

Table 3.10: Year-wise excess fixed charges of SPSEs

<table>
<tr><th>SPSE</th><th>APR Order of WBERC for the financial year</th><th>Particulars</th><th>Cost disallowed (₹ in crore)</th><th>Reasons</th></tr>
<tr><td rowspan="3">WBSEDCL</td><td rowspan="3">2017-20</td><td>Meter reading & billing distribution costs</td><td>64.00</td><td rowspan="2">These are controllable items. WBERC disallowed the expenditure which was in excess of allowed costs in the tariff orders.</td></tr>
<tr><td>Collection franchisee and franchisee costs</td><td>17.86</td></tr>
<tr><td>LT maintenance & mobile service costs</td><td>2.30</td><td>This is an uncontrollable item. WBSEDCL failed to justify the excess expenditure to WBERC.</td></tr>
<tr><td>Total (A)</td><td></td><td></td><td>84.16</td><td></td></tr>
<tr><td rowspan="4">WBPDCL</td><td rowspan="2">2016-17</td><td>Coal & ash handling charges</td><td>22.47</td><td rowspan="2">These are controllable items. They were disallowed by WBERC on the basis of actual generation of power, proportionate to the targeted generation.</td></tr>
<tr><td>Operation & Maintenance charges</td><td>7.96</td></tr>
<tr><td rowspan="2">2017-20 (APR orders yet to be issued by WBERC)</td><td>Coal & ash handling charges</td><td>65.55</td><td rowspan="2">In the past, such costs, incurred in excess of the amounts allowed in the applicable tariff orders, had been disallowed by WBERC</td></tr>
<tr><td>Operation & Maintenance charges</td><td>242.37</td></tr>
<tr><td>Total (B)</td><td></td><td></td><td>338.35</td><td></td></tr>
<tr><td rowspan="2">WBSETCL</td><td rowspan="2">2015-20</td><td>Repair & Maintenance charges</td><td>31.48</td><td rowspan="2">These are controllable items. WBERC disallowed the expenditure which was in excess of the expenditure allowed in the tariff orders.</td></tr>
<tr><td>Administrative & General charges</td><td>8.57</td></tr>
<tr><td>Total (C)</td><td></td><td></td><td>40.05</td><td></td></tr>
<tr><td>Grand Total (A+B+C)</td><td></td><td></td><td>462.56</td><td></td></tr>
</table>

(Source: APR order)

Thus, failure of the SPSEs, to control their fixed charges, had resulted in disallowance of excess expenditure incurred, amounting to ₹ 462.57 crore, by WBERC. As a result, these SPSEs had to absorb the extra expenditure of ₹ 462.57 crore.

WBPDCL, in its reply (November 2022), accepted the audit observation and stated that WBERC, without asking to produce additional documents in respect of C&A expenses, disallowed the excess costs incurred over and above the expenses allowed in its tariff orders. Further, since WBPDCL considered normative O&M expenses while booking RA, thus excess O&M expenditure disallowed by WBERC had no impact on the books of accounts.

Audit observed that books of accounts of WBPDCL show the actual cost incurred during the year. Thus, the gap between actual and allowed expenditure would be mitigated through own fund management, mainly from working capital loans, affecting the company's financial health. Interest costs, if any, are also to be passed on to consumers, increasing the tariff burden.

WBPDCL in its latest reply stated (December 2023) that WBERC has restricted the expenditure incurred by it to the amount proportionate to the actual generation as compared with the cost allowed in the tariff order based on normative target generation instead of actual expenses incurred, the decision of WBERC was challenged before APTEL.

The reply of WBPDCL is not acceptable since WBERC allowed expenditure on C&A and O&M considering the actual generation with respect to the targets set for generation. Moreover, outcome of the petition at APTEL is still pending (January 2024).

WBSETCL, in its reply (December 2022), stated that R&M expenses have been going up due to climatic extremities in the Bay of Bengal and coastal region which are beyond WBSETCL's control. Further, after disallowance of R&M expenditure by WBERC, in 2017-18, WBSETCL submitted a review application (June 2022) to WBERC.

Audit observed that since R&M expenses are controllable items, thus claiming excess expenditure than that allowed in the tariff order is not acceptable. Further, climatic extremities were not specified in APR applications made to WBERC upto 2020-21.

WBSETCL in its latest reply stated (January 2024) that while determining the tariff WBERC has on its own applied certain change in principles for finalizing the ARR by considering only the Transmission line length (CkM) as the sole parameter of Business Volume and ignored the Sub-station Capacity Addition as parameter of Business Volume Growth. WBSETCL also replied that they had filed review petitions before WBERC, contending these grounds, on which revision orders were awaited (January 2024). WBSETCL further stated that during 2015-20, new substations were commissioned or came under their administrative control, thereby there was increase in A&G charges.

Reply of WBSETCL needs to be viewed in light of the fact that WBERC determined the R&M and A&G according to their Tariff Regulations and did not admit the excess cost incurred by WBSETCL.

In reply (January 2023), WBSEDCL stated that the orders of WBERC, for the financial year 2017-18, disallowing fixed costs, have been challenged in APTEL. The matter is pending at APTEL.

3.10.6 Sale of surplus power to those other than licensee or any consumer

The Tariff Regulations of WBERC[280] indicate the methodology of "***sharing of benefit from selling of power to those other than licensee or any consumer".*** Under the applicable regulation, income from the selling of surplus power, reduced by the expenses relating to such activity, is to be shared equally (50:50) between the consumers and the power selling company (herein, WBSEDCL).

[280] *Vide Regulation 5.15.2(iv) of Tariff Regulation, 2011 read with Schedule-5 on tariff for retail sale of electricity.*

Further, to work out the net aggregate revenue requirement for determination of tariff for retail sale of electricity by a distribution licensee, the permitted benefit from such sale of power was, *inter alia*, required to be deducted from the gross sale of power.

In this regard, Audit observed that:

- WBSEDCL had sold surplus power, amounting to 15,655.22 MU[281], during 2017-22, to consumers other than its own consumers and licensees.
- WBERC in its APR orders, computes the total revenue requirement for the financial year, by considering the allowable fuel and power purchase costs and fixed costs. Thereafter, by deducting the other income[282] and revenue already realised during the year, through energy bills raised on consumers, WBERC finally determines the balance revenue recoverable from consumers.
- WBERC had not mentioned the components of expenses relating to sale of power in the extant tariff regulations. Instead, WBSEDCL considered the average pool power purchase cost[283] and related transmission charges, for expenses incurred on the sale of surplus power and accordingly, calculated the benefit arising out of sale of surplus power during 2017-22.
- Subsequently, the methodology of calculation of average pool power purchase cost had been modified by WBERC, in its APR orders for the financial years 2018-19 and 2019-20 (issued in July 2022), by excluding the cost of power purchased from hydro, renewable and co-generation sources. APR orders from financial year 2020-21 onwards were yet to be issued by WBERC (as of October 2022). Since, the costs of power purchased from hydro, renewable and co-generation sources are higher than the costs of purchase from thermal sources, the methodology adopted by WBERC ultimately reduced the average pool power purchase cost[284].
- During 2017-20, WBSEDCL computed benefit amounting to ₹ 656.46 crore, on sale of surplus power. WBERC, in its APR orders for the period 2017-20, allowed an equal share of benefit, amounting to ₹ 328.23 crore (50 *per cent* of ₹ 656.46 crore), on sale of surplus power to consumers.
- WBSEDCL and WBERC should have determined the cost of sale of surplus electricity by taking into account the fixed and variable costs. However, WBSEDCL and WBERC were only considering the cost of power purchase from thermal stations and adding the associated transmission charges only. Had the total costs (fixed and variable) of surplus power been considered, the cost of the surplus electricity sold would be in excess of revenue from

281 *2,121.35 MU, 1,857.60 MU, 1,253.00 MU, 2,735.19 MU and 7,688.07 MU during financial years 2017-18 to 2021-22, respectively.*

282 *Includes benefit on sale of surplus power, interest credit, non-tariff income and withheld amount on un-deposited terminal benefits.*

283 *The average pool power purchase cost means the cost of procurement of power from different sources divided by the quantum of power procured.*

284 *In financial year 2018-19, the actual average pool power purchase cost per unit was 408.65 paise, whereas WBERC had considered 289.97 paise in its APR order. Similarly, in financial year 2019-20, it was considered as 289.46 paise against the actual cost of 413.39 paise.*

sale of this electricity. However, selling price was less than the cost of procurement. So, there was net loss and benefit sharing does not arise. Since WBSEDCL and WBERC did not consider the fixed costs incurred on sale of surplus power and the actual average power purchase costs, they allowed excess recovery from consumers, which, in turn, increased the tariff burden.

- It is evident from the statement (***Appendix-24***) that, against actual net revenue requirement of ₹ 64,821.02 crore during 2017-20, the revenue realised through energy bills was ₹ 62,023.84 crore. Thus, the actual balance revenue recoverable was ₹ 2,797.18 crore[285] during 2017-20. However, WBERC, in its APR orders for the period 2017-20, allowed WBSEDCL the balance revenue recoverable amount of ₹ 3,125.41 crore, after considering the benefit on sale of surplus power of ₹ 328.23 crore to consumers, as stated *ibid*. Thus, the excess revenue recoverable amount, allowed to WBSEDCL, by WBERC, was ₹ 328.23 crore[286], which in turn, increased the tariff burden on consumers (***Appendix-24***).

WBSEDCL replied (April 2023) that if it does not sell power above variable cost in power market to part recovery of the fixed/ capacity charge of the generators, consumers will be penalized more since they have to pay for the entire capacity charges due to back-down of generators.

In further reply, WBSEDCL stated (March 2024) that sale of excess power is done where recovery of full fuel cost (variable cost) of generation along with part of fixed cost (capacity charge) of power purchase is ensured. Such recovery of part fixed cost reduces the tariff of the consumers since such burden of full capacity charge of power station is payable by consumers in any case.

However, Audit observed that while computing amount of benefit (from sale of power to others) to be shared with consumers, the fixed costs incurred to supply power to consumers were not considered. Audit observed that instead of sharing profit with consumers, tariff burden was passed on to them.

3.10.7 Power purchase cost by WBSEDCL

The costs of power purchase contributed nearly 80 *per cent* of the total costs of WBSEDCL. Audit observed that:

- The cost of power purchase from CESC (Calcutta Electric Supply Corporation), a private company, in radial mode[287], was higher than the cost of average power purchase from other power producers or suppliers. The rate was higher, on an average, at ₹ 3.61 per unit[288], during 2017-22, for which an amount of ₹ 31.06 crore[289] was paid in excess.

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[285] *₹ 64,821.02 crore minus ₹ 62,023.84 crore.*

[286] *₹ 3,125.41 crore minus ₹ 2,797.18 crore.*

[287] *Different feeders radiate from a sub-station or a generating station and feed the distributors at one end.*

[288] *Average Power Purchase Cost/per unit of WBSEDCL during 2017-20 was ₹ {(2.75 + 3.03 + 3.00)/3} = ₹ 2.93, whereas the actual power purchase cost/per unit from CESC was ₹ 6.54.*

[289] *Total power purchase from CESC: 2017-22: {(37.71 MU + 12.68 MU + 8.47 MU + 12.99 MU + 14.20 MU) x ₹ 3.61 per unit}/10.*

While accepting audit observation, WBSEDCL stated (January 2023) that due to unavailable network in some areas, power was taken from CESC to supply power to the consumers. However, in some such areas, WBSEDCL is now developing their network.

- A Power Sale Agreement (PSA) had been executed (October 2011), to purchase power of 100 MW, between WBSEDCL and PTC (Power Trading Corporation), on Round The Clock (RTC) basis, from Baglihar Hydro Electric Project (BHEP), located at the Doda district of Jammu & Kashmir, for 10 years, up to June 2021. The rate of power was fixed as ₹ 3.72 per unit. However, WBSEDCL decided[290] (September 2020) to terminate this PSA on the ground that: (a) the market available rate was lower than the tariff of BHEP, (*i.e.*₹ 3.72/unit) and (b) it would not fulfill the HPO[291] and RPO[292], in the near future.

In this regard, Audit observed that WBSEDCL had started purchasing (September 2019) power of 607 MU, annually, from *Manngdechhu* Hydro Electric Project (MHEP), of Bhutan, at ₹ 4.19 per unit. WBSEDCL had projected the procurement of power, from BHEP, as being 1,712.42 MU[293] @ ₹ 3.72 per unit. Since the tariff rate of BHEP was lower than the tariff of the MHEP of Bhutan, by ₹ 0.47/unit, termination of the agreement with Baglihar involved extra avoidable expenditure of ₹ 27.13 crore[294], annually.

WBSEDCL stated (January 2023) that since power from BHEP did not fulfill the HPO and RPO obligation in future, the agreement was not executed further after its expiry (June 2021). However, PPA was made with *Manngdechhu* HEP of Bhutan in December 2018 and without consent of GoI, the agreement cannot be terminated.

The reply, however, had not considered the fact that WBSEDCL had entered into PPA with PTC for purchase of power from MHEP to meet the shortfall in peak demand during the summer and monsoon seasons. But, as discussed in ***Paragraph 3.10.9***, the peak demand in 2019-20 as per Load Generation Balance Report (LGBR) was 6,777 MW, against which WBSEDCL had PPAs aggregating to 9,153 MW and own generation capacity of 1,176 MW. The PPAs included BHEP (100 MW) and MHEP (231 MW).

WBSEDCL in its latest reply (March 2024) stated that fixation of tariff and terms & conditions for sale of power in respect of MHEP was mutually determined by GoI and Royal Govt. of Bhutan at the time of commissioning of the project. Further, there is no provision of unilateral withdrawal from the allocation of Mangdechhu power from WBSEDCL side without consent of MoP, GoI.

[290] *Agenda No. 25 of 93 BoM dated 25.09.2020.*

[291] *Hydro Power Obligation (the Quantum of power required to be supplied by a Distribution licensee). GoI (March 2019) directed that Hydro Power Projects, having more than 25 MW capacity and whose commercial operation started on or after 08 March 2019, will be treated as HPO, under Non-solar RPO.*

[292] *Renewable Power Obligation is the quantum of power required to be supplied by a Distribution licensee these includes power source from hydel, solar, wind etc. which are renewable in nature.*

[293] *For **2020-21**: 596.54 MU, **2021-22**: 557.94 MU and **2022-23**: 557.94 MU.*

[294] *Working out to an average of 577.24 MU (for the financial years 2020-21 and 2021-22) x ₹ 0.47/unit (₹ 4.19 per unit minus ₹ 3.72 per unit) i.e. ₹ 27.13 crore.*

The reply had to be seen in light of the fact that WBSEDCL decided (25 September 2020) to treat the agreement with PTC as null and void stating that the replacement of Baglihar power with market available rate would be cheaper. However, as per the APR order of WBERC (dated 29.03.23) for the financial year 2020-21, it was observed that the average power purchase cost of WBSEDCL was ₹ 4.24/unit.

Hence, the decision to purchase power at higher cost from MHEP instead of extending the agreement for purchase of power from BHEP, led to higher power purchase cost.

3.10.8 Computation of monthly variable cost adjustment

Accumulation of regulatory assets, to obviate tariff shock on consumers, was likely to have an adverse impact on the sustainability of the licensees. In this regard, WBERC introduced MVCA[295] (Monthly Variable Cost Adjustment), in April 2011[296], recoverable on monthly sales by the licensee (herein, WBSEDCL), from its consumers, in order to avoid accumulation of regulatory assets and ensure reasonable cash flow to the distribution licensees. However, from April to December 2011, WBSEDCL had kept the recovery of MVCA in abeyance, at the behest of the State Government[297]. Further, WBERC directed (July 2014) the distribution licensees to compute MVCA, taking into consideration the related costs, failing which, WBERC would not allow such adjustment, in full, in future, during truing-up in APR. Contrary to WBERC's directions, WBSEDCL had not revised the MVCA of 23 paise per unit, since July 2016.

The process of submission of tariff petitions by each licensee, forecasting their net aggregate revenue requirement, and subsequent issue of tariff orders by WBERC, based on these petitions, is required to be completed before the start of the financial year for which the tariffs would be applicable. APR/ FPPCA petitions are, however, to be filed after the close of a financial year and are to be based on the actual expenditure incurred by the licensee. Orders are issued thereon by WBERC, after review of actual performance to the norms and adjusting the costs already recovered through the tariff order. This difference is realised/adjusted through the subsequent tariff order.

Scrutiny of the tariff and APR applications submitted by WBSEDCL and the tariff and APR orders issued there-against by WBERC, for the financial years 2017-18 to 2019-20, showed the following:

- In the tariff order for WBSEDCL, pertaining to the financial year 2017-18, WBERC had allowed power purchase of 39,798.83 MU (excluding the central and state transmission losses) at a cost of ₹ 13,51,278.40 lakh, *i.e.* at 339.53 paise per unit. However, in its FPPCA application, WBSEDCL claimed purchase of 37,916.755 MU, at the cost of ₹ 14,05,952 lakh (including rebate for timely payment), which was finally admitted by WBERC, in its APR order for the financial year 2017-18. Thus, the

[295] *Computed on the basis of fuel and power purchase cost of the preceding month of the month for which electricity bills are to be issued.*

[296] *Vide regulation 5.8.9 of tariff regulation 48 of 2011.*

[297] *As observed by the Committee on Public Undertakings in November 2014.*

average power purchase cost (PPC) per unit was 370.80 paise[298]. Hence, there was a gap of 31.27 paise per unit, which was to be recovered from the consumers, through MVCA.

- Against 31.27 paise/unit, recoverable from consumers, during financial year 2017-18, WBSEDCL calculated 23 paise/unit as the MVCA. GoWB, through subsidy, paid 23 paise/unit to those consumers who were consuming either, (i) not more than 300 units per month or (ii) below 900 units per quarter. This led to a short collection of 8.27 paise per unit on sale of 33,592.048 MU to consumers, with failure to collect revenue amounting to ₹ 277.89 crore[299].
- As per the Electricity Act, 2003, the tariff orders for the financial years 2018-19 and 2019-20 were to be fixed by WBERC, on or before 31 March 2018/2019. To this end, WBSEDCL had to submit tariff petition in November 2017 and November 2018. However, WBSEDCL submitted the petitions in July 2019, with delays of 21 months and 9 months. Consequently, the tariff orders, for the financial years 2018-19 and 2019-20, were issued belatedly, by WBERC, in August 2021. Due to delay in issue of tariff orders for the financial years 2018-20, WBSEDCL continued to raise bills on consumers at the rates mentioned in the existing tariff order, as applicable for financial year 2017-18, *i.e* the average PPC per unit continued to be treated as 339.53 paise/unit.
- The actual PPC per unit under the FPPCA order, of the financial years 2018-20, increased to 402.99 paise and 412.50 paise per unit, which resulted in short collection[300] of 63.46 paise and 72.97 paise per unit. GoWB allowed recovery of the subsidy amount of 23 paise per unit, through MVCA, as stated *ibid*. Thus, short collection of PPC per unit, for the financial years 2018-20, was 40.47 paise and 49.97 paise per unit, respectively.
- Thus, due to consideration of the MVCA at 23 paise per unit, arising from the failure to revise the MVCA in each month, consistent with actual costs, delays in submission of tariff applications and subsequent delays in issue of tariff orders for the years 2017-20, by WBERC, there was short collection of PPC, amounting to ₹ 3,511.04 crore **(*Appendix-25*).**

In reply (January 2023), WBSEDCL stated that it was not a fact that the difference between average power purchase cost (PPC) as per tariff order and average PPC, as per the annual FPPCA application, becomes the realisable MVCA for the whole year.

However, the reply does not respond to the observation that the MVCA was to be calculated based on the data of the previous month, mainly to ensure timely recovery of fuel and power purchase costs. Moreover, if the MVCA had been revised monthly, the amount recoverable through FPPCA, would have reduced significantly. This would have improved the liquidity position and reduced the amount of RAs.

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[298] *{(14,05,952 lakh/37,916.755 MU) x 10)}.*

[299] *(33,592.048 MU x 8.27 paise)/1000.*

[300] *Financial year 2018-19: 402.99 paise per unit minus 339.53 paise per unit; financial year 2019-20: 412.50 paise per unit minus 339.53 paise per unit.*

3.10.9 Sale of surplus power through IEX

WBSEDCL, in its perspective plan for the financial years 2018-19 and 2019-20, forecasted the unconstrained peak demand and energy demand, for the summer, monsoon and winter seasons, as shown in **Tables 3.11(A)** and **3.11(B)**.

Table 3.11 (A): Forecasted peak demand (MW) during financial years 2018-19 and 2019-2020

Period	2018-19			2019-20		
	Summer	Monsoon	Winter	Summer	Monsoon	Winter
Normal (06.00 hrs to 17.00 hrs)	3,725	3,829	3,262	4,296	4,567	3,636
Peak (17.00 hrs to 23.00 hrs)	6,370	6,719	4,485	6,588	6,777	4,705
Off-peak (23.00 hrs to 06.00 hrs	4,853	5,092	3,101	5,064	5,386	3,524

Table 3.11 (B): Forecasted energy demand (MU) during financial years 2018-19 and 2019-2020

Period	2018-19				2019-20			
	Summer	Monsoon	Winter	Total	Summer	Monsoon	Winter	Total
Normal (06.00 hrs to 17.00 hrs)	4,926	5,104	4,169	14,199	5,702	6,071	4,682	16,455
Peak (17.00 hrs to 23.00 hrs)	4,140	4,664	2,991	11,795	4,294	4,464	3,136	11,894
Off-peak (23.00 hrs to 06.00 hrs	3,304	3,461	2,563	9,328	3,728	3,981	2,846	10,555
	12,370	**13,229**	**9,723**	**35,322**	**13,724**	**14,516**	**10,664**	**38,904**

(Source: LGBR)
{(Conversion of MW to MU =(MW x 24 hours x 365 days)/1000}

Thus, the maximum load, projected for financial year 2018-19 and 2019-20, was 6,719 and 6,777 MW, respectively. However, the actual peak load, achieved during the same period, was 6,677 and 7,181 MW. Against these, WBSEDCL has 9,153.33 MW of PPA, in addition to its own generation capacity of 1,175.920 MW.

In order to ensure uninterrupted power supply to consumers, WBSEDCL was required to arrange power to meet the demand. Accordingly, the Area Load Despatch Centre (ALDC)[301] reviewed, in advance of each financial year, the Load Generation Balance Report (LGBR)[302], in line with the anticipated enhanced system demand which could arise due to various reasons, such as enhanced load due to on account of the harvesting season, board exams, elections, etc.

After receipt of LGBR from ALDC, the Power Trading & Procurement (PT&P) wing of WBSEDCL prepared a conservative procurement plan ahead of the following financial year, under the short-term mode, to procure power to meet

[301] *The ALDC was formed in compliance the regulatory guidelines and was entrusted with the procurement of power, through spot, short-term and long-term perspectives.*

[302] *LGBR comprises of anticipated power supply from own generation, procurement through power purchase agreement and short-term power purchases and systems demand i.e. consumption of power in the system.*

the shortfall for different time blocks of a specific period not exceeding one year, based on the LGBR prepared by ALDC. As seen from tariff applications of WBSEDCL for the financial years 2018-19 and 2019-20, any incidental surplus energy, mainly during the off-peak and normal periods, was to be sold to different entities, after ensuring recovery of the power purchase costs.

In absence of data, Audit test-check of records of short-term power purchases and sales, through the Indian Energy Exchange (IEX)[303], during financial years 2018-19 and 2019-20, showed the following:

- The LGBR, prepared by the ALDC, for the financial years 2018-19 and 2019-20, showed that there was a need for short-term purchases of power, from IEX, amounting to 2,612 and 2,002 MU, respectively.
- Accordingly, WBSEDCL purchased short-term power amounting to 2,631 and 2,020 MU, from IEX, at an average rate of ₹ 4.93 and ₹ 4.03 per unit, for the financial years 2018-19 and 2019-20, respectively.
- Usually, short-term power is purchased for the peak period only. It was, however, observed that only 885 MU (34 *per cent*) and 547 MU (27 *per cent*) had been procured for the peak period, during the financial years 2018-19 and 2019-20. WBSEDCL had procured off-peak short-term power (23 hrs to 6 am of a day), amounting to 1,097.973 MU (42 *per cent* of the total purchases) and 708.537 MU (35 *per cent* of the total purchases), during the financial years 2018-19 and 2019-20, respectively.

It was an indication of inefficiency of WBSEDCL to forecast its short-term power purchase and its utilisation. Further, loss on sale of surplus power adversely impacted the financial health of WBSEDCL, which contributes to the growth of regulatory assets. The surplus power, mainly off-peak, sold through IEX, during the financial years 2018-19 and 2019-20, was 344 and 250 MU, respectively. The average rate for sale of surplus power was ₹ 2.99 and ₹ 3.71 per unit, which resulted in loss of sale of surplus power, amounting to ₹ 66.37 crore[304] and ₹ 7.99 crore[305], respectively. Consequently, it was seen that WBSEDCL's average selling price on IEX, was below the purchase price, leading to non-recovery of power purchase costs in deviation of the requirements.

While accepting the audit observation, WBSEDCL stated (January 2023) that, due to the volatility of power position in West Bengal, power was procured through IEX, and surplus power, if any, sold through IEX.

WBSEDCL further replied (March 2024) that it procures power from exchanges whenever there has been a shortfall of the same due to unit outage, sudden surge in demand due to weather conditions, etc. and sells power on exchanges whenever there is surplus of the same due to weather conditions and other factors.

However, the fact remained that surplus power was sold through IEX at a price lower than its purchase cost, which resulted in loss in sale of surplus power.

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303 *IEX is India's premier energy marketplace, providing nationwide automated trading platform for the physical delivery of electricity. IEX is approved and regulated by the CERC and has been operating since 27 June 2008.*

304 *{(₹ 4.93 – ₹ 2.99) x 342.13 MU}/10.*

305 *{(₹ 4.03 – ₹ 3.71) x 249.64 MU}/10.*

3.10.10 Non-participation in UDAY scheme

MoP, GoI, had issued (November 2015) guidelines for the UDAY (Ujwal DISCOM Assurance Yojana) Scheme, for operational and financial turnaround of Power Distribution Companies (DISCOMS), with the aim of reducing AT&C losses to 15 *per cent,* in financial year 2018-19 and reducing the gap between the Average Cost of Supply (ACS) and the Average Revenue Realised (AvRR) to zero, by financial year 2018-19. A review meeting (July 2017) of the UDAY scheme revealed that due to participation in UDAY scheme, the savings realised at National level were: (a) reduction in power purchase costs of ₹ 1,800 crore (b) decrease in AT&C losses: ₹ 3,800 crore (c) reduction in interest cost of ₹ 15,086 crore and (d) reduction in booked losses of ₹ 11,045 crore.

To ensure uniformity in the calculation of ACS and AvRR, of each unit of power, the Central Electricity Authority (CEA), under MoP, GoI, had circulated (August 2017) the methodology for calculation of the gap between the ACS[306] and the AvRR[307].

The scheme was optional for the States to accept. It provided that 50 *per cent* of the DISCOM's debt be taken over by the State in financial year 2015-16 and 25 *per cent* in financial year 2016-17. Further, the State could take over the future losses of the DISCOM, in a graded manner[308].

However, after discussion with the DISCOM, GoWB decided not to take part in the scheme, on the grounds that:

- the DISCOM had been making profits since its inception.
- the scheme only considered the outstanding debts of the utility, without considering the regulatory receivables.
- GoWB had formulated a scheme entitled the West Bengal Power Financial Restructuring Scheme (WBPSFRS), with similar objectives.

However, the Ministry of Power, Government of India, did not approve the WBPSFRS scheme. Audit observed that the profitability of the DISCOM, as depicted was largely dependent upon the inclusion of regulatory income. Audit observed that non-participation in the UDAY scheme had the following impact:

- Against the ACS of ₹ 5.17, ₹ 5.50, ₹ 5.82, ₹ 6.12 and ₹ 5.22 per unit, for the respective years, during the period 2017-18 to 2021-22, the AvRR per unit was ₹ 4.93, ₹ 5.19, ₹ 5.41, ₹ 5.16 and ₹ 5.42. This resulted in a gap of ₹ (-)0.24, ₹ (-) 0.31, ₹ (-) 0.41, ₹ (-) 0.96 and ₹ (+) 0.20 per unit. Thus, the gap between ACS and AvRR had reduced to 0.20 in financial year 2021-22, whereas the UDAY scheme had aimed to reduce the gap by zero in financial year 2018-19 itself. Moreover, the 10th Annual Integrated Rating

[306] *Includes costs/ other charges of the railway staff posted at the power stations, de-railment and re-railment charges, ash evacuation etc., as per railway regulations.*

[307] *AvRR = (Revenue from sale of power +other income +subsidy received – subsidy booked)/ Total input energy.*

[308] *Financial year 2017-18: 5 per cent loss of financial year 2016-17; financial year 2018-19: 10 per cent loss of financial year 2017-18; financial year 2019-20: 25 per cent loss of financial year 2018-19; and financial year 2020-21: 50 per cent of the previous years loss.*

& Ranking: Power Distribution Utilities of August 2022, observed that the WBSEDCL's metrics on the ACS-ARR gap trajectory was declining.

- The AT&C losses for the period 2017-22 were 27.33, 22.97, 20.10, 21.35 and 16.65 *per cent,* against 15 *per cent* targeted by the UDAY Scheme, by financial year 2018-19.
- WBSEDCL had projected that participation in the UDAY scheme would lead to saving of interest cost of ₹ 732 crore[309], from financial institutions, from the financial year 2017-18 onwards. However, due to non-participation in the UDAY scheme, debt (both short and long term) had increased from ₹ 11,705.99 crore in financial year 2017-18 to ₹ 16,452.12 crore in financial year 2021-22 (increase of 40.54 *per cent*). Accordingly, interest expenses had also increased, from ₹ 1,394.22 crore in financial year 2017-18 to ₹ 1,584.76 crore in financial year 2021-22 (increase of 13.67 *per cent*).
- The opportunity to reduce AT&C losses through UDAY was not utilised, preventing reduction in power purchase costs, which, in turn, had increased by 10.52 *per cent* (i.e. by ₹ 1,915.81 crore[310]).

In reply (January 2023) WBSEDCL stated that the non-participation in UDAY scheme was a decision of the State Government.

3.10.11 Release of electricity subsidy

To reduce the tariff burden on consumers, GoWB released upfront subsidy to Domestic (Rural & Urban) consumers having electricity consumption less than 300 units per month, *i.e.* below 900 units in a quarter. Further, on inauguration of the '*Hasir Alo*' Scheme[311] (April 2020), DoP, GoWB, decided to provide free electricity to poor Life Line Domestic Consumers, having electricity consumption less than 25 units per month or 75 units in a quarter, provided that the consumers had connected load less than 0.3 KW.

According to the Electricity Act, 2003[312] and Tariff Regulations of WBERC[313], the amount of subsidy is to be paid, by the State Government, in advance, to the licensee. Audit observed that the State Government had failed to: (a) allocate the proper subsidy amounts in the budget (b) pay the subsidy amounts in advance and (c) released amounts higher than the budget allocation, after receipt of actual demands from the licensee.

Table 3.12 shows the year-wise budget sanction and release of subsidy amount to WBSEDCL.

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309 *Taking over of 75 per cent of WBSEDCL's loan of ₹ 8,128 crore (i.e. ₹ 6,096 crore), by GoWB.*

310 *Power purchase cost in financial year 2018-19 was ₹ 18,206.55 crore and in financial year 2021-22 its was ₹ 20,122.36 crore.*

311 *GoWB had announced (March 2020), a new scheme called 'Hasir Alo', providing free electricity to the poor of the state. Under this scheme, no electricity charges would be levied on all poor Life Line Domestic Consumers having connected load upto 0.3 KW (300 watt), having quarterly consumption of electricity upto 75 units or monthly consumption upto 25 units.*

312 *Under Section 62.*

313 *Clause 2.3 of Regulation 48 of WBERC dated 25 April 2011.*

Table 3.12: Year-wise budget sanction and release of subsidy to WBSEDCL

Name of the scheme	Financial Year	Initial budget allocation (₹ in crore)	Release of subsidy amount (₹ in crore)	Subsidy booked by WBSEDCL (₹ in crore)
Upfront subsidy	2017-18	600.00	1,023.49	1,055[314]
	2018-19	600.00	1,087.26	982.00
	2019-20	600.00	1,018.80	1,084.00
	2020-21	600.00	1,105.51	1,114.00
	2021-22	600.00	1,206.82	1,207.00
Total (A)		**3,000.00**	**5,441.88**	**5,442.00**
Hasir Alo	2020-21	0.00	260.10	260.00
	2021-22	138.75	323.71	324.00
Total (B)		**138.75**	**583.81**	**584.00**
Grand Total		**3,138.75**	**6,025.69**	**6,026.00**

(Source: Year-wise budget sanction and release)

The above table indicates that, against ₹ 3,138.75 crore initially sanctioned in budget, the actual subsidy released to WBSEDCL amounted to ₹ 6,025.69 crore, against which WBSEDCL booked subsidy amounting to ₹ 6,026 crore, in its accounts.

Further, the subsidy amount was to be received in advance, *i.e.* on or before the first day of any financial year. However, Audit observed that the subsidy for the financial year 2021-22, amounting to ₹ 1,530.53 crore[315], was received in a staggered manner, during the financial year 2021-22. Thus, WBSEDCL was forced to subsidize the consumers from its own funds. Had DoP, GoWB, released the subsidy amount in advance, as stipulated in the Act and Regulation, WBSEDCL could have saved loss of interest, amounting to ₹ 88.06 crore (considering cash credit interest of 8 *per cent*) (***Appendix –26***).

While accepting the audit observation, WBSEDCL stated (January 2023) that the subsidy for the full financial year is not supposed to be received on or before the first day of any financial year.

The reply of the management is not acceptable on the ground that, as per Schedule 6 of Tariff Regulations, 2011, the amount of subsidy so agreed by the state government, is to be paid in advance directly to the licensee, in full, at the beginning of each financial year, or before implementation of any decision for which such grant of subsidy is decided.

Recommendation :

2. ***SPSEs should strive to strengthen its operational performance, to meet the laid down norms.***
3. ***WBERC should ensure that the provisions of the National Tariff Policy are followed, for fixing norms and finalising tariff/APR orders, to regulate the tariff properly and enable recovery of justifiable costs incurred by SPSEs.***

314 *Includes of ₹ 143 crore as opening balance receivable from GoWB.*

315 *₹ 1,206.82 crore for upfront subsidy and ₹ 323.71 crore for Hasir Alo.*

3.11 Audit Objective 3: Whether the creation and recognition of regulatory assets had impacted the performance of SPSEs

The impact of creations and recognition of regulatory assets, on the performance of SPSEs, is discussed in the succeeding paragraphs.

3.11.1 Enhancement of borrowing limits

To meet the system demand and to ensure continuous supply to different categories of consumers in the state, WBSEDCL procures power from various[316] power supply agencies. WBPDCL supplied its entire generation to WBSEDCL, with the quantum of power supplied by WBPDCL, against the total requirement of WBSEDCL, for the period 2017-2022, ranging between 45 and 60 *per cent*. The remaining requirements were met through long/medium term power purchase agreements (PPAs) and procurement of short term power from the market. Between financial years 2017-18 and 2021-22, for WBSEDCL, the year-wise power purchase costs, as a percentage of the total costs, ranged between 75 *per cent* and 80 *per cent*. For procurement of power and to meet its working capital needs, WBSEDCL had enhanced its borrowing limit, of cash credit (CC) and short/ medium term loans, from ₹ 12,000 crore[317] to ₹ 15,000 crore[318], indicating the need to control the power purchase costs of WBSEDCL.

3.11.2 Excess interest burden

Cash is essential for the financial stability of a Company and its cash inflows and outflows need to be managed satisfactorily in order to meet payment obligations, plan for future payments and maintain adequate business stability.

Scrutiny of the cash flow statements, annual accounts, loan files, budget and expenditure etc., of the SPSEs covered in this report, revealed that there were wide changes in the financial health of the SPSEs, which ultimately increased their interest burden. **Table 3.13** indicates the changes in the financial health of the SPSEs, during 2017-22.

Table 3.13: Impact on financial health of SPSEs

SPSE	Impact on financial health
WBSEDCL	Negative working capital rose by 53 *per cent.*
	Interest expenses rose by 14 *per cent.*
	Revenue deficit rose by 69 *per cent.*
WBPDCL	Short term borrowings rose by 69 *per cent.*
	Prolonged period, allowed by WBERC for recovery of arrear dues, resulted in taking of temporary accommodation.
	Interest of ₹ 180.97 crore was claimed on temporary accommodation, which carries the potential of increasing the tariff burden. Interest expenses rose by 92 *per cent.*

[316] *WBPDCL, DPL, NTPC (National Thermal Power Corporation Limited), NHPC (National Hydroelectric Power Corporation Limited), DVC (Damodar Valley Corporation), PTC (Power Trading Corporation of India Limited), etc.*

[317] *Approved by BoD dated 13 November 2017.*

[318] *Approved by BoD dated 24 July 2020.*

SPSE	Impact on financial health
WBSETCL	Negative working capital rose by 25 *per cent.*
	Borrowings rose by 8 *per cent.*
	Interest expenses rose by 8 *per cent.*
DPL	To liquidate the high-cost term loan of ₹ 2,690 crore for 10 years, taken from PFCL @11.15 *per cent* per annum, BoD of DPL approved[319] taking of loan, amounting to ₹ 2,675 crore at 8.65 *per cent per annum,* upto 15 years, from WBIDFC Limited. There would be saving in interest of ₹ 8 crore (₹ 27 crore – ₹ 19 crore) per month, amounting to ₹ 96 crore per annum, which would improve the cash flow of DPL. While this could assist DPL in improving its cash flow in the short term, in the long-term DPL will pay excess avoidable interest of ₹ 5.76 crore[320]. Thus, the decision to liquidate the high cost loan, by taking another loan over a longer tenure, would increase the interest burden of the Company and affect the financial health of the Company as well.

(Source: Annual Reports/APR/Minutes of BoD)
Notes: Temporary accommodation means a temporary/ short term financial loan, taken from lending agencies.

DPL, in its reply (November 2022), stated that, due to loan swapping, it had saved monthly interest of ₹ 8.00 crore. Further, considering the present value factor of 7.10 *per cent* of cash out-flow of interest, DPL had saved ₹ 26.17 crore.

However, examination of DPL's calculation by Audit showed that there was avoidable excess interest outflow of ₹ 5.76 crore.

WBSETCL, in its reply (December 2022), accepted the audit observation and stated that it was presently utilising the loan capital within the prescribed limits, and, to mitigate the interest burden, it had taken the initiative to swap high interest bearing loans, to rationalise the interest costs. WBSETCL further replied (April 2023) that the main reason for the increase in internal borrowing was due to increase in capital expenditure. Every year the company has incurred capital expenditure to the extent of ₹ 800-₹1000 crore.

While accepting the audit observation, WBSEDCL stated (January 2023) that the Company has tried to optimise the interest burden by means of loan swapping *etc.*

3.11.3 Effect on the credit rating of the SPSEs

The distribution function is a crucial link in the electricity chain, as it provides the last mile connectivity in the Electricity sector. With most of the country's distribution business coming under the state distribution sector, achieving improvements in the financial and operational performance of the State Power Distribution Utilities, is of paramount importance for the robust overall development of the Indian Power Sector. MoP, GoI, initiated (October 2019) action for development of an Integrated Rating Methodology, covering the State Power Distribution Utilities, keeping in view their poor financial health, due to multifarious factors. The credit rating was to be based on the following parameters: (a) Operational and reform parameter (52 score) (b) External parameters (15 score) and (c) Financial parameters (33 score). The 10th Annual Integrated Rating and Ranking of Power Distribution Utilities published

[319] *Vide Agenda No. 4 of 625 BoM dated 22 February 2021.*

[320] *Excess interest paid of ₹ 14.04 crore minus saving of interest on cash outflow of ₹ 8.28 crore.*

(August 2022) by MoP, GoI, evaluates DISCOMs' performance against three main parameters, *viz*.: (a) financial sustainability (75 *per cent* weightage) (b) Performance excellence (13 *per cent* weightage) and (c) external environment (12 *per cent* weightage). Most of the central and state government schemes are funded through PFC and REC loans. The loan policy circulars of PFC and REC dated 1 September 2022 and 19 January 2022, respectively, envisaged that the interest rates of loans taken by SPSEs, having credit rating B and C, shall be higher by 25 bps and 50 bps, respectively, than the interest rates of loan applicable to SPSEs of rating A.

As per the report (October 2019) of MoP, GoI, the rating of WBSEDCL (state owned distribution company) was B^+ (score between 50 and 65), which indicated moderate operational and financial performance capability. The key concern areas were identified as: (a) T&D and AT&C losses remaining higher than the trajectory fixed (b) Tariff order, APR & FPPCA orders and trueing-up[321] not having been done by WBERC, for the last five years (c) the Debt-Equity ratio (5.17:1) of WBSEDCL being very skewed, which affected credit ratings. Poor credit rating was also adversely affecting the Company's borrowing profile. However, as per the 10th Integrated Ratings and Rankings of MoP, GoI (August 2022), WBSEDCL has been assigned grade 'C', having declined from the earlier B^+ grade. The downward credit rating occurred due to: (i) holding of 25 *per cent* of the total regulatory assets of DISCOMs in India by WBSEDCL (b) failure to file tariff and APR applications in time (c) delay in issue of tariff and APR orders by WBERC. Out of the project loans of ₹ 5,544 crore, loans amounting to ₹ 3,918.77 crore (71 *per cent*) had been taken from REC and PFC, with a repayment period of 12 to 20 years. Due to the decrease in its credit rating, from B to C grade, the Company would be paying higher interest, in future.

The SPSEs had also engaged a Credit Rating Agency (CRA), to rate their long term and short term loans. **Table 3.14** shows the present rating of SPSEs by CRA.

Table 3.14: Present rating of SPSEs by CRA

SPSE	Name of rating agency	Rating of long term loans	Rating of short term loans	Remarks by CRA	Impact
WBSEDCL	Acuite Credit Rating Agency (ACRA)	BBB^+	A2	Pending confirmation of huge regulatory assets by WBERC, short term borrowings had increased.	The total borrowings (31 March 2022) stood at ₹ 16,454.15 crore, of which, project loans constituted ₹ 5,544 crore (34 *per cent*); Long term working capital loan and others stood at ₹ 4,106 crore (25 *per cent*); Short term loans amounted to ₹ 1,145 crore (7 *per cent*) and Cash Credit loans were ₹ 5,659 crore (34 *per cent*).

[321] *Process of reconciliation of actual expenditure during the Annual Performance Review (APR), with the amount admitted in tariff order.*

SPSE	Name of rating agency	Rating of long term loans	Rating of short term loans	Remarks by CRA	Impact
WBPDCL	ACRA	A	A2	It was stated in the report that: (a) there was moderate financial risk (b) the liquidity profile was adequate and (c) outlook of the company was stable.	WBPDCL had availed the moratorium granted, in view of COVID-19 pandemic situation, in regard to payment of instalment and interest of loans, amounting to ₹ 536.42 crore.
WBSETCL	ACRA	A	A	A stable outlook.	
DPL	ACRA	BBB^{+}	A2	Weak financial risk profile of DPL, marked by reducing net worth and weak debt protection metrics.	Had not availed any loan moratorium or additional COVID loans.

(Source: Credit Ratings Reports)

WBSETCL in its reply (December 2022) stated that current rating of WBSETCL was upgraded to A^{+} with stable outlook from 2022.

While accepting the audit observation, WBSEDCL stated (January 2023) that the rating may improve in future.

3.11.4 Government's initiative to liquidate regulatory assets

To liquidate regulatory assets/receivables and arrear power purchase costs, the State Finance Department had released ₹ 4,563.16 crore as grants-in-aid, between October 2016 to May 2017, of which WBSEDCL received ₹ 2,647.09 crore and WBPDCL received ₹ 1,916.07 crore. GoWB had again formulated (2016) a scheme, entitled the 'West Bengal Power Financial Restructuring Scheme (WBPSFRS)', to liquidate borrowings and regulatory assets. However, MoP, GoI, had not approved (July 2018) the WBPSFRS scheme. Thus, the earlier initiative of GoWB, for liquidation of the regulatory assets/receivables, did not yield the desired results and the RAs have increased (as of 31 March 2022) to ₹ 18,330.17 crore and ₹ 7,764.48 crore, for WBSEDCL and WBPDCL, respectively. In the meanwhile, DoP, GoWB, communicated (July 2021) to WBERC that release of the accumulated regulatory assets/receivables, in one go, would have a catastrophic impact on the tariff bills, leading to tariff shock to the consumers. GoWB also stated that the current scale of regulatory receivables was so large that it was beyond their means to liquidate the regulatory assets, as they had done before. Consequently, GoWB directed WBERC to dispose of the pending APRs and FPPCAs within October 2021 under Section 108[322] of the Electricity Act, 2003.

WBSEDCL accepted the audit observation (January 2023).

3.11.5 Incentives under scheme for restructuring

MoP, GoI, had launched (July 2021) the Revamped Distribution Sector Scheme (RDSS), which aims to reduce the AT&C losses to pan-India levels of

[322] *The State Commission shall be guided by such directions in matters of policy involving public interest as the State Government may give to it in writing. (2) If any question arises as to whether any such direction relates to a matter of policy involving public interest, the decision of the State Government thereon shall be final.*

12-15 *per cent* and the ACS-AvRR gap to zero, by financial year 2024-25. All state-owned DISCOMs and State/UT Power Departments will be eligible for financial assistance under the scheme. Under this scheme, a state level Distribution Reform Committee (DRC) was to be constituted, for implementation of the scheme. The proposal was discussed in DoP, GoWB and a DRC was formed (November 2021) to implement the scheme in the state. According to the pre-qualification criteria of the scheme: (a) WBSEDCL will have to ensure that no new regulatory assets have been created in the latest tariff determination cycle (b) the State Government has to ensure 100 *per cent* payment of subsidy for the previous year and advance payment of subsidy upto the current period and (c) tariff orders should have been implemented *w.e.f.* from 1 April 2022, for the year 2022-23 and true-up should have been done for the financial year 2020-21.

In this regard, Audit observed that: (a) the true-up of WBSEDCL had been done by WBERC, up to the financial year 2019-20. Further, due to delay in finalisation of annual accounts for the financial year 2020-21, WBSEDCL had belatedly submitted (June 2022) its APR application for the financial year 2020-21, order on which was yet to be issued by WBERC (as of October 2022) (b) WBSEDCL had *suo moto* created regulatory assets and booked them in its accounts, for the financial year 2021-22 (c) GoWB failed to release subsidy in advance, for the financial year 2021-22, as brought out in ***Paragraph 3.10.11*** (d) the tariff order for the financial year 2022-23 had been issued by WBERC in July 2022, instead of being issued before commencement of financial year 2022-23.

In reply WBSEDCL stated (January 2023) that Monitoring Committee has approved WBSEDCL's proposal of RDSS in November 2022.

Recommendation 4:

SPSEs should make efforts to improve their liquidity position, borrowing and credit profile.

Chapter IV

Performance Audit on Solid Waste Management in Urban Local Bodies

CHAPTER - IV

URBAN DEVELOPMENT & MUNICIPAL AFFAIRS DEPARTMENT

4. Performance Audit on Solid Waste Management in Urban Local Bodies

Executive Summary

With growing urbanization, waste generation and its appropriate disposal have become a challenge for the State. The 74th Constitutional Amendment Act, 1992, entrusted Urban Local Bodies (ULBs) with the management of solid waste, and made scientific processing and disposal of waste an obligatory duty of the ULBs.

In West Bengal, the Department of Urban Development & Municipal Affairs (the Department) is the nodal Department for the governance of all ULBs. There are 125 Urban Local Bodies (Seven Municipal Corporations, 115 Municipalities and three Notified Area Authorities) in West Bengal, which are involved in Solid Waste Management, in their respective jurisdictions.

A performance audit was carried out on 'Solid Waste Management in Urban Local Bodies', for the period 2017-18 to 2021-22, to assess the status of management of municipal solid waste (MSW) in the State, covering 26 selected ULBs.

The Performance audit showed that the State Level Advisory Body (SLAB), constituted in November 2016, had not been functioning since 2017. The Department had not notified its policy for Construction and Demolition (C&D) waste management (as of December 2022). There were delays in the preparation of Solid Waste Management Plans/ DPRs for ULBs and the same had not been placed before the elected body of ULBs for approval. Prescribed procedures had not been followed for assessment of solid waste generated in the ULBs.

In West Bengal, 13,709 metric tons (MT) of solid waste had been generated per day, during 2021-22, in 125 ULBs. Of this, 13,687 tons per day (TPD) (99.84 *per cent*) of waste had been collected. Only 3,047 TPD (*i.e.* 22.26 *per cent* of the collected waste) had been treated and the remaining 10,640 TPD of waste had been unscientifically disposed of. There were only two Sanitary Landfills, in the State. However, there were 123 dumpsites, with legacy waste of 123.87 lakh MT. Bio-mining and bio-remediation of the legacy waste was substantially low. The extent of segregation, recovery of MSW, scientific disposal and cost recovery of MSW, were significantly low, as opposed to the Service Level Benchmark targets set in the Handbook of Service Level Benchmarking of the Ministry of Urban Development, Government of India.

The budgetary provisions of the Department for Solid Waste Management were inadequate *vis-a-vis* the approved project cost for SWM. Further, the expenditure on SWM was not commensurate with the funds available, resulting in accumulation of balance in the bank account of State Urban Development Agency (SUDA). None of the test-checked ULBs had made specific provisions

for 'solid waste management' in their budgets and were dependent on Government grants to defray their SWM schemes. Only the Kolkata Municipal Corporation (KMC) and the New Town Kolkata Development Authority (NKDA) had framed by-laws, while the remaining 24 test-checked ULBs had not framed by-laws, incorporating the provisions of the SWM Rules, 2016.

Door-to-door collection of waste had not commenced in 85 *per cent* of the test-checked ULBs. More than 50 *per cent* of the bins purchased for disbursement were lying idle with the test-checked Municipalities. Domestic hazardous waste was getting mixed with other solid waste and reaching the landfills. In all the test-checked ULBs, the open vat system was still operational, for temporary storage of municipal solid waste, involving biodegradable and non-biodegradable waste.

In 10 out of the 26 test-checked ULBs, it was noticed that 29 SWM vehicles, costing ₹ 5.45 crore, purchased between March 2016 and July 2021, had been lying idle for one to four years, exposing them to the risk of being rendered unusable in future.

Of the 123 dumpsites in the State, with an aggregated legacy waste of 123.87 lakh MT, on 838.09 acres of land, bio-remediation work had been taken up for 90 dumpsites, in 78 ULBs. Though the statutory time limit for completing bio-remediation of all legacy waste dumpsites had ended in April 2021, only six dumpsites had been cleared, as of September 2022. Joint Physical Verification of 31 dumpsites revealed that 29 dumpsites had continued to receive fresh waste, which had, in turn, hampered the process of bio-mining of legacy waste.

Only 38 ULBs had sufficient land for setting up of solid waste processing and disposal facilities, while the remaining 87 ULBs either had no land or insufficient land. There were only two Sanitary Landfills in the State.

Owing to acute shortage of waste processing facilities and sanitary landfills in the State, the untreated solid waste was either being dumped in the dumping grounds, or strewn at the road side, in water bodies, drains, canals *etc.* Traces of burning of mixed waste had been noticed in dumpsites.

Observing the slow progress in implementation of the SWM Rules, 2016, NGT imposed environmental compensation of ₹ 32.91 crore, for the period July 2020 to May 2021, out of which ₹ 25.62 crore was paid from the interest accrued from SBM fund. The remaining environmental compensation of ₹ 6.49 crore had not been paid, as of October 2022.

Recommendations:

1. ***The Department should design the capacity of SWM based on sufficient and relevant data for the quantity of the waste to be processed.***
2. ***The Government should notify its policy for scientific management of C&D Waste.***
3. ***The Department should provide budget for SWM commensurate with the approved SWM action plans and ensure its proper usage.***
4. ***The Government should levy, collect sanitation and conservancy charges, as provided in the State Policy on SWM.***

5. ***The Government should assess the quantity of solid waste generated as per MSWM Manual, 2016 for effective management of waste. ULBs should strictly ensure maximisation of the segregation of waste at source.***
6. ***The Government should incentivise segregation of waste at source and effective system should be put in place for collection, transportation and disposal of the segregated waste.***
7. ***Procurement of SWM vehicles should be done only after realistic assessment of the requirement and utility. The vehicles already procured should be gainfully deployed.***
8. ***The Department should set up required infrastructure for Solid waste processing including early completion of bio-mining and bio-remediation of legacy waste.***
9. ***The Department should provide sufficient and suitable land for setting up of waste processing and disposal facilities in ULBs on priority to minimize adverse impact of untreated waste on public health and environment.***
10. ***The Department should ensure that burning of solid waste, in landfills/ dumping sites, is stopped and the violators, if any, are mandatorily and swiftly penalised.***
11. ***The Department should draw up a time-bound plan for ULBs, for achieving the Service Level Benchmark targets.***
12. ***WBPCB should ensure strict monitoring of SWM facilities through regular inspections and ensure that its Annual Report on SWM should reflect the actual position.***

4.1 Introduction

4.1.1 Solid Waste

Waste is generally classified into Municipal Solid Waste (MSW), Bio-Medical Waste (BMW), Construction and Demolition (C&D) waste, e-waste, plastic waste, slaughterhouse waste, industrial waste and hazardous waste, by virtue of its nature. It is also classified as biodegradable, non-biodegradable, combustible, dry and inert, based on its characteristics.

As per the Solid Waste Management Rules, 2016, ‘Solid Waste’ includes solid or semi-solid domestic waste, sanitary waste, commercial waste, institutional waste, catering and market waste, other non-residential waste, street sweepings, silt removed or collected from the surface drains, horticulture waste, agriculture and dairy waste, treated bio-medical waste (excluding industrial waste, bio-medical waste, e-waste, battery waste, radio-active waste) *etc*.

Municipal Solid Waste Management in urban areas, has emerged as a major challenge and the situation has been further aggravated by rapid urbanisation. Inadequate management of waste has significant negative externalities, in terms of public health and environmental outcomes, in addition to its having an adverse impact on the aesthetic appearance of the surroundings. Therefore, solid waste management is a major environmental concern that need to be addressed effectively.

As per the Central Pollution Control Board (CPCB), Annual Report 2020-21, the total quantity of solid waste generated in the country is 1,60,038.90 tons per day (TPD), of which 1,52,749.50 TPD of waste is collected, with a collection efficiency of 95.40 *per cent*. 79,956.30 TPD (50 *per cent*) of waste is treated and 29,427.20 TPD (18.40 *per cent*) is landfilled. 50,655.40 TPD of waste, which is 31.60 *per cent* of the total waste generated, remains unaccounted for.

4.1.2 Solid Waste Management and the Sustainable Development Goals

The Sustainable Development Goals (SDGs) are a collection of 17 global goals with 169 associated targets, set by the United Nations, to be achieved by 2030, SDGs related to waste management are:

- ***SDG 3: Good Health and Well-Being:-***Target 3.9 of SDG 3 aims to reduce substantially the number of deaths and illnesses from hazardous chemicals; air, water and soil pollution; as also contamination by 2030.
- ***SDG 6: Clean Water and sanitation:-*** Target 6.3 of SDG 6 aims to improve water quality, by reducing pollution; eliminating dumping; minimising release of hazardous chemicals and materials; halving the proportion of untreated wastewater; and substantially increasing recycling as well as safe reuse, globally.
- ***SDG 11: Sustainable Cities and Community:-*** Target 11.6 of SDG 11, aims to reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management.
- ***SDG 12: Responsible Consumption and Production***:- SDG 12 includes targets focused on environmentally sound management of all wastes, through prevention, reduction, recycling and reuse (targets 12.4 and 12.5) and reduction of food waste and food losses (target 12.3).

4.1.3 Regulatory framework governing management of solid waste

The Central Government has the power to take necessary measures, for protecting and improving the quality of the environment, subject to the provisions of the Environment (Protection) Act, 1986. Judicial interventions had also a significant impact on Solid Waste Management in the country. The Ministry of Environment, Forests and Climate Change (MoEF&CC) notified (April 2016) the Solid Waste Management Rules, 2016 (SWM Rules, 2016). The SWM Rules, 2016 provide a legal framework for disposal and management of solid waste (except industrial waste, hazardous chemicals, bio-medical waste, e-waste, lead acid batteries and radioactive waste) in all Urban Local Bodies. Industrial waste, hazardous chemicals, bio-medical waste, e-waste, lead acid batteries and radio-active waste are covered under separate rules, framed under the Environment (Protection) Act, 1986.

4.1.4 Entities involved in Solid Waste Management

With growing urbanization and changing lifestyle, generation of waste and its appropriate disposal has become a challenge for the State. The 74th Constitutional Amendment Act, 1992, made provisions for the establishment of ULBs as the third tier of governance, with the objective of empowering the ULBs to perform functions and implement schemes in relation to the 18 subjects specified in the 12th Schedule of the Constitution of India, which *inter alia* included urban planning, regulation of land use, public health, sanitation, conservancy and solid waste management. Scientific processing and disposal of waste is an obligatory duty of the ULBs. There are 125 Urban Local Bodies (7 Municipal Corporations, 115 Municipalities and 3 Notified Area Authorities) in West Bengal, which are involved in Solid Waste Management, in their respective jurisdictions.

The Department of Urban Development & Municipal Affairs, headed by the Principal Secretary is the nodal Department for the governance of all ULBs, in West Bengal. The Municipal Commissioner is the administrative head of a Municipal Corporation and the Executive Officer is the administrative head of each Municipality/ Notified Area Authority.

The roles of various authorities, in the planning, execution and monitoring of municipal solid waste management in the State, are depicted in **Table 4.1**.

Table 4.1: Roles of various authorities in the planning, execution and monitoring of municipal solid waste management

State	**Urban Development & Municipal Affairs Department**	Nodal Department, formulation of State Policy on SWM, approval of Plans/DPR, watch over compliance of SWM Rules, Capacity building of ULBs *etc*.
	State Urban Development Agency	Nodal Agency for SWM in the State and provides funds to the ULBs.
	State Advisory Committee	A Committee, chaired by Additional Chief Secretary, UD Department and represented by the WB Finance Dept, WB Environment Dept, WBPCB, CPCB, MoEF&CC, Ministry of Urban Development, *et al.,* for implementation of the SWM Rules, 2016.
	State Level Advisory Body for the SWM Rules, 2016	A body, chaired by the Principal Secretary of the Department, for reviewing implementation of SWM Rules, State Policy & Strategy on SWM and rendering advice to the State Government.
	State High Powered Committee under Swachh Bharat Mission (Urban)	A Committee, chaired by the Chief Secretary of the State, for preparation, approval and publishing of the Sanitation Strategy, empanelment of consultants for preparation of DPRs, sanction of SWM Projects, conducting independent review and monitoring *etc*.
	State Level Task Force	Headed by the Director, SUDA for evaluation of DPRs, finalisation of tender documents, selection of bidders, monitoring and supervision of cluster and standalone SWM projects.
	West Bengal Pollution Control Board	Local authorities are required to obtain Authorisation from the WBPCB for MSW management. Operators selected by municipal authorities to carry out MSW management are also required to obtain authorisation. The local bodies are also required to submit Annual Report in **Form-IV** to WBPCB on or before the 30th day of June every year. The WBPCB has also been entrusted with the duty of monitoring the compliance of MSW management facilities w.r.t. groundwater, ambient air, leachate quality and compost quality including incineration standards as specified in the Rules.

District	**Regional Pollution Control Board Offices**	Monitoring & Evaluation.
	District Magistrate/ District Collector/ Deputy Commissioner	Identification and allocation of suitable land to ULBs for setting up Solid Waste processing and disposal facilities and review performance of ULBs.
Urban Local Bodies	**Municipal Corporation/ Municipalities/ Notified Area Authorities**	Implementation.

As per census-2011, the population of West Bengal was 9.13 crore (including 2.91 crore urban population). In West Bengal 13,709 metric ton of solid waste was generated per day during 2021-22, in 125 ULBs. Of this, 13,687 TPD (99.84 *per cent*) of waste was collected. Only 3,047 TPD (*i.e.* 22.26 *per cent* of the collected waste) was treated and the remaining 10,640 TPD of waste was unscientifically disposed. There were only two Sanitary Landfills in the State. However, there were 123 dumpsites, with legacy waste[323] of 123.87 lakh MT. Bio-mining and bio-remediation[324] of the legacy waste was substantially low, even after the lapse of prescribed[325] time limit of five years in the SWM Rules, 2016. The extent of segregation[326], extent of recovery[327] of MSW, extent of scientific disposal[328] and extent of cost recovery[329] of MSW, were significantly low, as opposed to the Service Level Benchmark targets set in the Handbook of Service Level Benchmarking of the Ministry of Urban Development, GoI. During 2021-22, only 5,916 TPD of waste could be segregated in the State. The Performance Audit attempted to obtain assurance on the performance of the State Government and ULBs, regarding solid waste management and compliance of the SWM Rules, 2016, and National Green Tribunal (NGT) orders.

4.2 Audit Objectives

The objectives of the Performance Audit were to ascertain whether the:

- Strategy and planning of solid waste management in the ULBs was commensurate with the types and quantum of waste generated and was concurrent with the prevailing legal framework.

323 *The waste that has been collected and kept for years at some barren land or a place dedicated for Landfill.*

324 *Bio-mining and bio-remediation refer to excavation of old dumped wastes and make windrow of legacy waste, thereafter stabilisation of wastes through exposure of wastes to air along with use of composting bio-culture.*

325 *Rule 22 Sl. No. 11 of SWM Rules, 2016, stipulates time period of five years for bio-remediation.*

326 *Percentage of waste from households and establishments that is segregated.*

327 *This is an indication of the quantum of waste collected, which is either recycled or processed. This is expressed in terms of percentage of waste collected.*

328 *The amount of waste that is disposed in landfills that have been designed, built, operated and maintained as per standards.*

329 *This indicator denotes the extent to which the ULB is able to recover all operating expenses relating to SWM services from operating revenues of sources related exclusively to SWM.*

- municipal tasks associated with solid waste management, including collection, segregation, storage, transportation, disposal and social inclusion of informal waste workers, were effective, efficient and economical.
- planning, construction, commissioning, operation and maintenance of solid waste management projects in ULBs, was effective, efficient and financially sustainable.
- Monitoring and evaluation of the solid waste management system, including adequacy of awareness creation, citizen engagement for effecting behavioral change, complaint redressal mechanism for citizens, assessment of environmental impact and implementation of the internal control and monitoring mechanism, was adequate and effective.

4.3 Audit Criteria

The criteria for evaluating the performance of SWM were derived mainly from:

- The Environment (Protection) Act and Rules, 1986
- The Solid Waste Management Rules, 2016
- Manual of Municipal Solid Waste Management, 2016, issued by GoI
- The West Bengal Municipal Act, 1993
- State Policy and Strategy on Solid Waste Management in Urban Areas, Government of West Bengal
- Construction and Demolition Waste Management Rules, 2016
- Performance parameters set out in the Service Level Benchmarking (SLB) guidelines
- Instructions, guidelines, policies, issued by the Central Pollution Control Board, West Bengal Pollution Control Board and Government of India/ State Government, on solid waste management
- Detailed Project Reports and/or Solid Waste Management Plans, prepared by the State Government/ULBs.

4.4 Audit Scope and Methodology

The Performance Audit on 'Solid Waste Management in Urban Local Bodies', was conducted during July to November 2022. The Performance Audit covered the management of Municipal Solid Waste during the FYs 2017-18 to 2021-22. The audit methodology involved scrutiny of records of the Department of Urban Development & Municipal Affairs (Department); State Urban Development Agency (SUDA); Kolkata Metropolitan Development Authority (KMDA); Chief Engineer, Municipal Engineering Directorate; West Bengal Pollution Control Board (WBPCB); and 26 selected Urban Local Bodies/ Development Authorities. Joint Physical Verifications (JPVs) of municipal waste disposal facilities, including treatment plants, composting plants, biogas plants, landfills sites, dumpsites *etc*., (both completed and under construction), in the selected ULBs, along with the officials of ULBs and collection of photographic evidence, to assess the level of services provided in those ULBs, were also used carried out.

Out of the 125 ULBs in the State, 25 ULBs ***(Appendix-27)*** were selected, through stratified random sampling, using IDEA application software. Further, the NKDA, was also selected for test-check, as it was providing municipal services, including SWM, in New Town Kolkata area. The coverage of population of the sampled units was 29.28 *per cent* (85.17 lakh) of the entire urban population (290.93 lakh).

An Entry Conference, with the Department and the representatives of WBPCB, was held on 2 August 2022, in which the audit objectives, criteria, scope and methodology, were discussed. The draft Report was issued to the Department on 28 December 2022. The Exit Conference with the Department and other representatives was held on 27 January 2023, to discuss the Audit findings and recommendations and the responses furnished therein were considered while finalising the Performance Audit Report. The revised draft report was issued (December 2023) to the Department for their reply. The Department accepted (January 2024) the audit observations.

Audit acknowledges the cooperation and assistance extended by the State Government in the Urban Development & Municipal Affairs Department, State Urban Development Agency, Kolkata Metropolitan Development Authority, all the test-checked ULBs and the West Bengal Pollution Control Board, in the conduct of the Performance Audit.

Audit Findings

The audit findings emerging from the Performance Audit, are discussed in the succeeding paragraphs.

4.5 Planning

4.5.1 Constitution of Committees

Rule 23(1) of the SWM Rules, 2016, stated that a State Level Advisory Body (SLAB) was to be constituted within six months from the date of notification (April 2016) of the Rules. The Body was required to meet at least once in every six months, to review matters related to the implementation of these rules, State policy and strategy on solid waste management and to give advice to the State Government for taking necessary measures for expeditious and appropriate implementation of these Rules. The copies of the review report were to be forwarded to the State Pollution Control Board or Pollution Control Committee, for necessary action.

Accordingly, a SLAB was constituted in November 2016, in the State, including one representative each from IIT, Kharagpur; NGO/civil society working for waste pickers or informal recycler on solid waste management; the Indian Chamber of Commerce; the waste recycling industry; and two subject experts.

Scrutiny of records, revealed that a meeting of the SLAB had been scheduled on 17 May 2017. However, the agenda notes and minutes of the said meeting were not available on record. Further, no information was available regarding, total number of meetings of the SLAB held till November 2022, to review the implementation of the SWM Rules, 2016. Thus, the efficacy of functioning of the stipulated mechanism, to review matters related to implementation of the

SWM Rules and the State Policy and Strategy on solid waste management, could not be ascertained in audit.

In reply, the Department remained silent on the issue of conducting regular SLAB meeting.

As per section 11.2.1 of the Guidelines for the Swachh Bharat Mission-Urban (SBM-U), 2014, a State High Powered Committee (SHPC), under the chairmanship of the Chief Secretary, GoWB, and with members drawn from concerned departments was to be constituted. Accordingly, SHPC was constituted (April 2016) for management of the SBM-U. The functions of SHPC included preparation and approval of the State Sanitation Strategy as well as approval of the City Sanitation Plans for all the cities covered under the SBM-U. The committee held three meetings on 5 January 2017, 28 March 2018 and 23 July 2021, to discuss the concept, plans and process of the proposed SWM projects and to review the projects. However, the fact remains that the monitoring mechanism as prescribed under Rule 23(1) of the SWM Rule, 2016 was not being adhered to.

4.5.2 State Policy and Strategy on Solid Waste Management for Urban Areas

In terms of clause (a) of sub rule (1) of Rule 11 of the SWM Rules, 2016, the State, was to prepare a State Policy and Solid Waste Management Strategy, for the State, in consultation with stakeholders, including representatives of waste pickers, self-help groups and similar groups working in the field of waste management, within a period of one year from the date of notification (April 2016) of the SWM Rules, 2016. The policy should be consistent with the SWM Rules, 2016, National Policy on Solid Waste Management and National Urban Sanitation Policy of the Ministry of Urban Development.

Audit observed that a Drafting Committee, for preparation of the Policy and Strategy Plan had been constituted[330] in the first meeting (November 2016) of the State Advisory Committee and it had been resolved that the Plan to SLAB within three months. Further, the State Policy and Strategy on Solid Waste Management, for the Urban Areas of West Bengal, was taken up (May 2017) for approval by SLAB. The Department, GoWB, notified (January 2018) the State Policy and Strategy on Solid Waste Management for the Urban Areas of West Bengal (State Policy on SWM), after the expiry of the stipulated period of one year.

Audit observed that, prior to finalisation of the State Policy, surveys had not been conducted for estimating the solid waste generation and its composition in the State. In the absence of comprehensive data on the emanation of solid waste, reliance was placed on national averages for population growth and on Central Public Health & Environmental Engineering Organisation (CPHEEO) guidelines, 1996, for waste generation.

Thus, the State Policy and Strategy on SWM, which provided a framework for the management of solid waste, is based on time-lagged data and sparse information. This led to a number of SWM projects being put on hold, in

[330] *Members are Director SUDA, Special Secretary, Chief Engineer, Municipal Engineering Directorate etc.*

the absence of proper information. As per minutes of 3rd SHPC (July 2021), 13 SWM projects of 13 ULBs [331] costing ₹ 316.46 crore put on hold as the projects had not been designed in conformity with the SWM Rules, 2016 and their design capacity was less than the quantity of municipal solid waste to be processed.

4.5.3 Policy for Construction and Demolition Waste Management

The Ministry of Environment, Forest & Climate Change, Govt. of India, notified (March 2016) the Construction and Demolition (C&D) Waste Management Rules, 2016. The rules apply to all waste generated from construction, remodeling, repair and demolition of any civil structure.

Clause 1 of Rule 9 of the C&D Waste Management Rules, 2016, required that the Secretary in-charge of development in the State Government or Union territory administration, prepare policy documents in regard to the management of C&D waste, in accordance with the provisions of these rules, within one year from the date of final notification of these rules.

Even though the statutory timeline for preparation of policy documents, in regard to management of C&D waste, had lapsed in March 2017, the Department, GoWB, had not notified its policy for C&D waste management (as of December 2022). The State policy on C&D waste was to be notified and made public, in absence of which the mechanism for collection, processing and disposal of C&D waste was not standardised.

The Department in Exit Conference (January 2023) stated that the State Policy on C&D waste was notified in October 2022, however, could not provide a copy of the same.

4.5.4 State Policy and strategy on Plastic waste management

The Plastic Waste Management Rules, 2016, were notified by MoEF&CC in March 2016. The State Policy and Strategy on Plastic Waste Management, in the Urban areas of West Bengal, was notified in January 2018, which stipulates establishment of plastic waste management system in all the 125 ULBs by March 2030.

As per the Annual Report of WBPCB on the Plastic Waste Management Rules, 2016, for 2020-21 the State generated 2,08,880 MT of plastic waste during 2020-21, and there were 128 plastic recycling units and 11 manufacturing units of plastic sachets, pouches *etc*. registered in the State. Of the 125 ULBs in the State, only two ULBs (Uttarpara-Kotrung Municipality and Konnagar Municipality) had been disposing plastic waste by engaging a private agency for processing.

However, the status of utilization of plastic waste, such as the quantity of plastic waste recycled/used for road construction or cement manufacturing/ production *etc*., was not available. Data was also not available for the number of unregistered plastic manufacturing/recycling units, in the State. Therefore, the unregistered plastic manufacturing/recycling units could not be brought under the legal framework.

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[331] *Arambagh, Asansol MC (Ph-II), Bankura, Baruipur, Bardhaman, Coochbehar, Durgapur MC, Garulia, Kanchrapara, Kharagpur, Panihati, Purulia and Raghunathpur.*

The Department stated (February 2023) that 425 manufacturing/recycling units have been identified and the list of such units was sent to WBPCB to check their registration status. After establishing the registration status, the details of the units would be shared with ULBs so that ULBs could engage them for disposal of plastic waste.

4.5.5 Preparation of cluster based plans for SWM

Municipal Solid Waste Management (MSWM) is essentially a municipal function, and it is mandatory for all the municipal authorities to provide this service efficiently, to keep the cities and towns clean, process the waste, and dispose of the residual MSW, in an environmentally acceptable manner.

The MSWM Manual, 2016 (Section 1.4.5 and 1.4.6) emphasised the need for ULBs, to prepare a detailed SWM plan, with short term (5 years) and long-term (20-25 years) actions. The short-term plans were to lead to the achievement of the long-term plans. Each short-term plan was to be reviewed in every 2-3 years, to ensure higher chances of success in implementing all the planned activities. Further, the short-term plans were to cover aspects of institutional strengthening, community mobilisation, waste minimisation initiatives, waste collection and transportation, treatment and disposal and financial outlay.

Clause (a) of Rule 15 of the SWM Rules, 2016, required every local authority to prepare a Solid Waste Management Plan, as per State policy and strategy on solid waste management, within six months from the date of notification of State policy and strategy, and submit a copy to the respective department of the State Government or Union Territory Administration or agency authorised by the State Government or Union Territory Administration.

Further, the Government of India launched its flagship scheme of 'Swachh Bharat Mission-Urban' (SBM-U) in October 2014 with SWM as one of its six components. As per Paragraph 7.2 of the SBM-U Guidelines, ULBs were to prepare Detailed Project Reports (DPRs) for SWM of their city, in consultation with the State Government. The SBM-U Guidelines also stipulated that the State Government may handhold ULBs, in quickly preparing DPRs for SWM, by shortlisting/identifying private or government agencies.

As per Para 2.3 of the MSWM Manual, 2016 (Part-I), preparation of a Municipal Solid Waste Management Plan should follow a seven-step[332] approach.

Audit observed, that during 2017-18 to 2021-22, none of the 25 test-checked ULBs, as also the NKDA, had prepared either short-term or long-term plans. However, the State Urban Development Agency (SUDA), the nodal agency for SWM in the State, had engaged Transaction Advisors/Micro Planning organisations[333], for preparation of the SWM Plans of 124 ULBs (except for KMC) for 10 years.

[332] *Step 1: Policies, Programmes & Legal Framework, Step 2: Assessment of Current Situation and Gap Analysis, Step 3: Stakeholder Consultation for MSWM Planning, Step 4: Preparation of Draft MSWM Plan, Step 5: Schedule for Implementation, Step 6: Stakeholder Consultation for MSWM Plan Validation and Step 7: Municipal Council Approval for MSWM Plan & Plan Implementation, including PPP.*

[333] *Private consultants referred to as Transaction Advisors and Micro Planning Organisations engaged for preparation of DPRs/ SWM Plans.*

SUDA engaged (February 2019 and August 2019) three Transaction Advisors, to assist the State Government in planning for scientific Solid Waste Management[334], through the cluster approach and management of the bidding process for selection of developers and operators, for ten clusters of 39 ULBs/ Development Authorities, as shown in ***Appendix-28***. The engagement was, however, made after one year of notification of State Policy and Strategy on SWM against the timeline of six months.

As per the work orders (issued in February 2019 and August 2019), the broad responsibilities of the Transaction Advisors, *inter alia*, included preparation of DPRs for Integrated SWM, for the clusters of ULBs involved in the project, drafting of Request of proposal, facilitate in bid process, drafting of agreements *etc*. related to selection of agency for SWM. Audit observed that the work was stopped midway. Out of the total contract cost of ₹ 2.89 crore, payment amounting to ₹ 75.12 lakh had been made (till November 2022) to the Transaction Advisors. The percentage of payment made to the Transaction Advisors in regard to seven clusters[335], was 11.80 *per cent* while, for the remaining three clusters[336], was 59 *per cent*. Reasons for non-preparation of DPRs were not provided by SUDA, though called for. The expenditure ₹ 75.12 lakh incurred on preparation of DPRs on cluster based approach become infructuous due to subsequent adoption of city based approach for preparation of DPRs as discussed in the following paragraph.

4.5.6 Preparation of City-wise Concept cum Actions Plans for SWM

The Department in March 2019 decided to develop city-wise Concept-cum-Action Plans, in place of cluster based approach, for proper management and scientific disposal of solid waste in ULBs. SUDA engaged six[337] Micro Planning Organisations (Micro Planners) for 124 ULBs (except KMC), in two phases, between September and December 2019 for this purpose. The Micro Planners had to prepare DPRs (SWM Plans) for the ULBs assigned to them within 75 days of the issue of work orders.

Scrutiny revealed that two Micro Planners[338] left (June 2021) the assignment, without submitting the final DPR for the 34 ULBs allotted to them. As a result, the pending work was subsequently (July 2021) assigned amongst other three[339] micro planners. Audit further observed that the final DPRs (*i.e.* SWM Plans) of all 124 ULBs were approved (May-December 2021) in three[340] meetings of the State Level Task Force on Solid Waste Management.

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334 *Is a systematic process that comprises of waste segregation and storage at source, primary collection, secondary storage, transportation, secondary segregation, resource recovery, processing, treatment, and final disposal of solid waste in a scientific manner.*

335 *Cluster-II, Cluster-V, Cluster-VI, Cluster-VII, Cluster-VIII, Cluster-IX and Cluster-X.*

336 *Cluster-I, Cluster-III and Cluster-IV.*

337 *BITAN, SIGMA Foundation, Digambarpur Angikar, PwC, We the People and Stesalit System Limited.*

338 *We the People and Stesalit System Limited.*

339 *BITAN, SIGMA Foundation, Digambarpur Angikar.*

340 *23rd meeting dated 12 May 2021, 25th meeting dated 4 June 2021 and 36th meeting dated 31 December 2021.*

Thus, there were delays, ranging from 2 years 10 months to 3 years 5 months, in the preparation of DPRs (SWM Plans), as the plans were supposed to have been prepared within six months (*i.e.*, by July 2018) of the notification (January 2018) for the State Policy and Strategy on SWM.

Preparation of the Master Plan for Solid Waste Management (SWM) in Kolkata was first initiated in 2005, under the Kolkata Environment Improvement Project[341]. However, the Master Plan had not been published in the final shape. Subsequent to the notification of the SWM Rules, 2016, KMC prepared a Master Plan for SWM in Kolkata and published in September 2019. Thus, there was a delay of one year and two months in preparation of the SWM Plan for Kolkata, following expiry of the stipulated six months after the date of notification of the State Policy on SWM, in January 2018.

As a result, the whole process of management and scientific disposal of solid waste in ULBs could not be completed within the timeline prescribed in the SWM Rule, 2016.

The SUDA stated (January 2023) that collection of both primary and secondary data together with multiple round of consultations from grassroots level to State level did take substantial time. It was added that subsequent validation and approval by the SLTF also took time.

The work orders of the Micro Planning organisations had provided a total of 75 days for submission of final DPRs (15 days for submission of the Inception Report, with plan of action; 45 days for submission of draft DPRs and 15 days for submission of final DPRs, from the date of approval of the draft DPRs) considering all the exercises to be perform and, therefore, the reasons furnished for delay in finalisation of DPRs, were not tenable.

4.5.7 Deficiencies in DPRs/Master Plan for SWM

Review of the final DPRs/Master Plans, of 25 test-checked ULBs (except NKDA) for which no DPR had been prepared (as of November 2022) revealed the following deficiencies:

- Section 1.4.4 of the MSWM Manual, 2016 (Part-II), provides for constitution of a core team or advisory team (internal stakeholders), involving all the departments concerned with SWM services, for developing MSWM Plan and involvement of community (external stakeholders, comprising households, informal sector, Non-Government Organisations (NGOs), Community Based Organisations (CBOs), Self Help Groups (SHGs), women's groups *etc.*), in MSWM planning and implementation.

- It was, however, observed that core teams/advisory teams (internal stakeholders), involving all the departments concerned with SWM services had not been constituted in any of the test-checked ULBs. Thus, internal stakeholders were not involved in the MSWM planning and implementation process as envisaged in the Manual.

[341] *An important environmental improvement programme of the Kolkata Municipal Corporation jointly funded by the Asian Development Bank, the Government of India and the Government of West Bengal.*

In reply, the SUDA stated (January 2023) that SWM task force has been constituted in 20 ULBs. However, the fact remains that the task force were yet to be formed in the remaining 105 ULBs.

- As per the MSWM Manual 2016, the development of a MSWM plan, follows a seven-step process and the seventh step involves approval of the MSWM Plan. The final MSWM plan is to be presented to the elected body of the local authority for approval and official formalization of the plan. Audit, however, found that the DPRs (Solid Waste Management Plan) of 24 out of 26 test-checked ULBs (*i.e.* except for KMC and NKDA), prepared by the Micro planners, had not been approved by the Boards of Councillors (BoCs)[342] of the concerned ULBs. The BoCs needed to be made aware of the short and long-term actions to be taken up, to enable them to consider and approve the financial and institutional strengthening plans for the implementation of these short/long-term actions. Similarly, the private operators, engaged by the ULBs, needed to be made aware of the MSWM plans of the ULBs. Non-involvement of internal stakeholders, in the preparation of the DPRs, as also the non-approval of the DPRs by the concerned BoCs, cast doubts over successful and sustainable project implementation of SWM plans. In reply, the SUDA stated (January 2023) that all ULBs have been advised to place the DPRs at the next meeting of the BoCs for approval.
- Different Micro Planning Organisations (*i.e.* Micro Planners) submitted DPRs (SWM Plans) under different names *e.g.*, 'Micro Plan', 'Scientific Plan' and 'Final DPR', and in different formats, as no common format had been issued to them by the SUDA. In reply, the SUDA accepted (January 2023) that no common format was shared by the Department.
- Clause 5.4 of the MSWM Manual, 2016 (Part-II), stipulated that ULBs have to prepare contingency plans, for appropriate storage of waste, to tide over situations of non-performance of processing/treatment/disposal facilities. Audit, however, observed that requirement of such contingency plans was not addressed in the DPRs of selected ULBs. However, the stipulated contingency plans were not in existence in any of the 25 test-checked ULBs. As a result, the ULBs were not prepared to tackle unforeseen situations that could result in piling up of waste on streets, instances of fire at landfill sites *etc*. The SUDA stated (January 2023) stated that though there are no contingency plans, all unforeseen and contingent situations are addressed promptly. However, the fact remains that there was no documented contingency plan as per provision of MSWM Manual.
- Clause 2.3.3.1 of the MSWM Manual, 2016 (Part-II), stipulates that, in hilly areas, many of the houses are accessible only by footpaths or steps, thus, restricting the use of handcarts and tricycles. Accordingly, segregated waste, from households in hilly areas, is to be collected by using backpacks, having small leak-proof containers, upto 50 L capacity, or by using local traditional load-bearing methods, such as pack animals, shoulder poles, headbands, wheeler bags *etc*. Further, the waste collectors have to ideally collect wet waste from each household, with a bag or basket on their back,

[342] *Body formed among the elected councillors of the ULBs.*

and with another bag for dry waste. They are also to be well equipped with personal protective equipment (PPE)[343] and be provided with whistles, to announce their arrival for waste collection. Audit, however, observed that, in two of the test-checked hilly ULBs (Mirik and Kurseong), that for the purpose of primary waste collection, provision of Pedal Tri-cycles (PTCs) had been made in their DPRs, instead of making provisions on the lines of the MSWM Manual, 2016. Owing to non-suitability of PTCs in the hilly areas, the PTCs had not been supplied to both the ULBs. Audit observed that in the Mirik Municipality there was no leakage proof DOKO[344] for collection of dry and wet waste against the requirement of 600. In absence of such specialised equipment for use in hilly areas the solid wastes are being collected in sacks. Thus, due to lack of suitable provision in the DPRs, strengthening of the existing primary waste collection system, both in these hilly ULBs, had remained unaddressed. The SUDA accepted (January 2023) the audit observation

4.5.8 Formulation of by-laws

Rule 15(e) of the SWM Rules, 2016, states that local authorities have to (i) frame by-laws, incorporating the provisions of the State Policy and Strategy on SWM, within one year from the date of notification of the strategy and (ii) ensure its timely implementation of the SWM Rules, 2016. Further, Rule 15(f) of the SWM Rules 2016, states that local authorities have to prescribe user fee, from time-to-time, as deemed appropriate and collect such fee from the waste generators, either on its own, or through an authorised agency. Moreover, Rule 15(ze) states that local authorities have to ensure that the provisions for setting up of centres for collection, segregation and storage of segregated waste, are duly incorporated in the building plans, while granting approval of building plans of group housing societies or market complexes. Rule 15(zf) states that local authorities have to frame by-laws and prescribe criteria for levying of spot fines for persons who litter or fail to comply with the provisions of this strategy.

Audit, however, noted that only KMC and NKDA had framed by-laws and the remaining 24 test-checked ULBs had not framed by-laws, incorporating the above mentioned provisions of the SWM Rules, 2016, till November 2022. Further user fee, to be collected from the waste generators, had also not been prescribed in any of the 26 test-checked ULBs. In reply the SUDA stated (January 2023) that SUDA along with the Department is following up with all the ULBs to finalise the by-laws in conformity with the SWM Rules, 2016.

Recommendations:

1. ***The Department should design the capacity of SWM based on sufficient and relevant data for the quantity of the waste to be processed.***
2. ***The Government should notify its policy for scientific management of C&D waste.***

[343] *Gumboots, Hand gloves, face masks, Aprons etc.*

[344] *Backpack made of bamboo to carry goods in tea gardens.*

4.6 Financial management

4.6.1 Budget Provisions *vis-a-vis* expenditure, on Solid Waste Management

The Department made budget provision (Demand No-72) of ₹ 730.00 crore, under the head 'Swachh Bharat Mission-Urban' (SBM-U) and ₹ 498.80 crore, under 'Solid Waste Mission' (SW Mission), during FYs 2017-18 to 2021-22, for management of solid waste in urban areas of the State, as shown in **Table 4.2**.

Table 4.2: Budget Provisions *vis-à-vis* expenditure incurred

(₹ in crore)

Purpose	Financial Year	Head of Account	Budget provisions	Revised Budget Provisions	Net Allotment	Actual Expenditure
SBM-U	2017-18	2215-02-789-003-00-35-00-V (State share)	80.00	184.49	184.49	184.49
		2215-02-789-002-00-35-00-V (Central share)	100.00	154.21	154.21	154.21
		Total	180.00	338.70	338.70	338.70
	2018-19	2215-02-789-003-00-35-00-V (State share)	130.00	160.00	150.06	150.06
		2215-02-789-002-00-35-00-V (Central share)	180.00	120.00	111.82	111.82
		Total	310.00	280.00	261.88	261.88
	2019-20	2215-02-789-003-00-35-00-V (State share)	90.00	1.00	9.46	9.46
		2215-02-789-002-00-35-00-V (Central share)	130.00	3.00	0	0
		Total	220.00	4.00	9.46	9.46
	2020-21	2215-02-789-003-00-35-00-V (State share)	5.00	0	0	0
		2215-02-789-002-00-35-00-V (Central share)	5.00	1.00	0	0
		Total	10.00	1.00	0	0
	2021-22	2215-02-789-00-003-35-00-V (State share)	5.00	200.00	200.00	200.00
		2215-02-789-00-002-35-00-V (Central share)	5.00	215.82	215.82	215.82
		Total	10.00	415.82	415.82	415.82
	SBM Total (A)		**730.00**	**1,039.52**	**1,025.86**	**1,025.86**
SW Mission	2017-18	2217-03-191-003-00-31-02-V	0.25	0.10	0	0
		2217-03-192-002-00-31-02-V	0.25	0.10	0	0
		Total	0.50	0.20	0	0
	2018-19	2217-03-191-003-00-31-02-V	0.50	0.05	0	0
		2217-03-192-002-00-31-02-V	0.50	0.05	0	0
		Total	1.00	0.10	0	0

Purpose	Financial Year	Head of Account	Budget provisions	Revised Budget Provisions	Net Allotment	Actual Expenditure
	2019-20	2217-03-191-003-00-31-02-V	0.15	20.00	0	0
		2217-03-192-002-00-31-02-V	0.15	30.00	0	0
		Total	0.30	50.00	0	0
	2020-21	2217-03-191-003-00-31-02-V	80.00	40.00	0	0
		2217-03-192-002-00-31-02-V	120.00	50.00	0	1.36
		Total	200.00	90.00	0	1.36
	2021-22	2217-03-191-00-003-31-02-V	120.00	30.00	0	0
		2217-03-192-00-002-31-02-V	177.00	45.00	6.66	6.66
		Total	297.00	75.00	6.66	6.66
	SW Mission Total (B)		**498.80**	**215.30**	**6.66**	**8.02**
Grand total (A + B)			**1,228.80**	**1,254.82**	**1,032.52**	**1,033.88**

(Source: Budget Publication Nos. 3 and 24)

From the above table, it may be seen that expenditure of ₹ 1,025.86 crore and ₹ 8.02 crore, was booked under the heads SBM-U and SW Mission, respectively. Thus, ₹ 1,033.88 crore was spent against the total revised budget provision of ₹ 1,254.82 crore, during the FYs 2017-18 to 2021-22.

The SUDA stated (January 2023) that the Department would initiate a proposal to the Finance Department for providing sufficient budget provision and it would ensure utilisation of the budget provision.

4.6.2 Budget Provisions *vis-à-vis* Requirement

As per the approved SWM Action Plans of 125 ULBs, one time aggregate capital expenditure of ₹ 5,763.01 crore, and aggregate operational expenditure of ₹ 19,641.42 crore, for 10 years was required for SWM.

Audit observed from the above table that an average annual budget provision of ₹ 250.96 crore had been made by the Department, during FYs 2017-18 to 2021-22, against which annual expenditure of ₹ 206.78 crore had been incurred. It was further observed that budget provision of ₹ 312.00 crore only had been made under the head 'Solid Waste Mission', for FY 2022-23. No budget provision under 'SBM-U' was made for the FY 2022-23. Thus, the average annual budget provisions of ₹ 250.96 crore was inadequate, in view of the estimated capital expenditure of ₹ 5,763.01 crore and annual operational expenditure of ₹ 19,641.42 crore for SWM processes in the State, as outlined in the approved action plans of the ULBs.

4.6.3 Utilisation of funds by SUDA

The State Urban Development Agency (SUDA) is the nodal agency for management of solid waste in the State. Audit observed that SUDA had received a total ₹ 998 crore, from the Department, during the period from FY 2015-16 to FY 2021-22 for the purpose of management of solid waste in urban areas and had incurred an expenditure of ₹ 497.19 crore, for procurement of SWM vehicles, bins, engagement of Micro Planners/Transaction Advisors and for funding

Municipal Corporations/Municipalities/KMDA, for operation and maintenance of vehicles, implementation of Integrated Solid Waste Management Projects *etc*.

Audit noted that, as on 31 March 2022, there was an unspent balance of ₹ 500.83 crore in the Bank account of SUDA. The main reasons for non-utilisation of funds were mid-way stoppage of three works and non-initiation of 13 works under integrated solid waste management projects, under the SBM-U, approved in the first (January 2017) and second (March 2018) meetings of the State Level High Powered Committee.

4.6.4 Assessment of requirement of funds for Solid Waste Management-ULBs

As per Rule 15(x) of the SWM Rules, 2016, is the duty and responsibility of ULBs to make adequate provision of funds for capital investments, as well as for operation and maintenance of SWM services, in the annual budgets.

Out of the 26 test-checked ULBs, two[345] ULBs had not prepared their budgets during FYs 2017-18 to 2021-22. Scrutiny of the approved budgets of 24 ULBs, revealed that specific provision for 'solid waste management' had not been made in the budgets of 13 ULBs[346]. However, in all these 13 ULBs, budget estimates for garbage expenses/conservancy[347] had been made during the years 2017-22. The budget estimates of only two[348] ULBs had estimated the likely receipt from user charges. In absence of such provision, the gap in requirement of fund for SWM could not be assessed by the ULBs.

As per information furnished by the 26 test-checked ULBs, for FYs 2017-18 to 2021-22, in 15 ULBs[349], more than 50 *per cent* of the expenditure on SWM works had been incurred from Government Grants which indicated that the ULBs had been unable to finance their obligatory functions[350] of SWM. In only four[351] ULBs, more than 50 *per cent* of the expenditure on SWM works had been met from the own resources of these ULBs. Seven[352] ULBs had not furnished information on source of their expenditure on SWM.

Thus, in absence of provision of funds for SWM in the budget of the ULBs, majority of the expenditure was incurred from Government grants.

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[345] *Kurseong Municipality and Mirik NAA.*

[346] *Asansol MC, Baidyabati, Balurghat, Baranagar, Budge Budge, Egra, Haldia, Haringhata, Kamarhati, Kandi, Panskura, Rampurhat and Titagarh.*

[347] *Services in connection with removal of solid waste.*

[348] *Balurghat Municipality and Budge Budge Municipality.*

[349] *Asansol MC, Baidyabati, Balurghat, Baranagar, Bardhaman, Budge-Budge, Egra, Haringhata, Jangipur, Kamarhati, Kandi, Kurseong, Mirik, Rampurhat and Titagarh.*

[350] *Sphere of public works (roads, sewerage and drainage etc.), Public Health & Sanitation, Town Planning and Development and Administration.*

[351] *Haldia Municipality, Siliguri MC, Pasnkura Municipality and NKDA.*

[352] *Kolkata MC and the Arambag, Old Malda, Jhargram, Chandrakona, Bongaon and Birnagar Municipalities.*

4.6.5 Levy and collection of different charges for management of solid waste

Section 95B of the W.B. Municipal Act, 1993, stipulates that the BoC may levy a special conservancy charge[353], for providing municipal services in connection with the removal of solid waste. Further, as per Clause 15(f) of the SWM Rules, 2016, the local authorities are to prescribe the user fee, as deemed appropriate, from time-to-time, and collect the fee from the waste generators, either on their own or through an authorised agency.

As per the proposed financial action plan, incorporated in the State Policy on SWM, municipalities may factor in an addition of sanitation charges[354], in the prevailing property tax rates, and may place the collected sanitation charges into a municipal sanitation fund. The action plan also proposed levy of conservancy service charges, at ₹ 0.50 per capita per day, by the municipalities.

Scrutiny of records of the 26 test-checked ULBs revealed that sanitation charges had not been levied and collected after introduction of the State Policy on SWM in January 2018 till March 2022, in any of the ULBs. Conservancy service charges had also not been levied and collected, resulting in loss of opportunity to earn additional revenue, amounting to ₹ 699.06 crore, during FYs 2018-19 to 2021-22[355], as shown in ***Appendix-29***.

As such, the test-checked ULBs had implemented the proposed action plans of levying fees for solid waste handling. Thus, at the implementation level, the proposed action plans, for financing the SWM plans, were not adhered to. This resulted in dependency on Government grants for execution of SWM works, as discussed in the preceding paragraph.

The SUDA stated (January 2023) that the Department in consultation with the Finance Department would try to ensure implementation of financial action plan as incorporated in the State policy on SWM.

4.6.6 Funds of Swachh Bharat Mission-Urban

Ten Integrated Solid Waste Management Projects (ISWMPs), of 14 ULBs[356], with an overall estimated cost of ₹ 421.69 crore, were approved (January 2017) by the State Level High Powered Committee, in its first meeting (January 2017) under SBM-U. The scope of work in the DPRs *inter-alia* included, primary (door-to-door) collection of waste, secondary operation, segregation and sorting, construction of bio-methanation/compost plants, development of Land fill sites *etc***.**

Out of 10 ISWMPs taken up, funds were lying unspent only in respect of three ISWMPs (consisting of four ULBs). Audit observed that SUDA released

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353 *Fee for the conservancy services termed as special conservancy charge.*

354 *Charges for sanitation services like desludging of septic tanks, treatment of collected sludge cleaning of drains etc.*

355 *The State Policy on SWM was notified in January 2018, as such, the calculation had been made for the last four complete years, from 2018-19 to 2021-22.*

356 *1 Cluster Mode: a) Dum Dum, North Dum Dum, South Dum Dum and Baranagar Municipalities and b) Ashoknagar-Kalyangar & Habra Municipality. 2 Standalone Mode: a) Jalpaiguri Municipality, b) Krishnagar Municipality, c) Santipur Municipality, d) Nabdwip Municipality, e) Bhatpara Municipality, f) Naihati Municipality, g) Kolkata Municipal Corporation and h) Asansol Municipal Corporation.*

(July 2017) 10 *per cent* of the project cost, amounting to ₹ 6.88 crore, to three implementing authorities, for execution of three projects costing ₹ 68.84 crore. The status of release of funds and expenditure incurred on these projects, is shown in **Table 4.3.**

Table 4.3: Status of release of funds and expenditure incurred on three ISWMP

Sl. No.	Project	Name of the implementing authority	Project Cost	Funds released	Expenditure incurred	Refund	Balance
			(₹ in Crore)				
1	Integrated SWM Project in Ashoknagar-Kalyangarh and Habra Municipalities (cluster)	EE, North 24 Pgs. (MED) Division,	32.32	3.23	2.19[359]	Nil	1.04
2	Integrated SWM Project in Krishnanagar Municipality	Krishnanagar Municipality	18.33	1.83	0.93[360]	Nil	0.90
3	Integrated SWM Project in Santipur Municipality	Santipur Municipality	18.19	1.82	0	Nil	1.82
	Total		**68.84**	**6.88**	**3.12**	**Nil**	**3.76**

(Source: Information furnished by SUDA and the Chief Engineer, Municipal Engineering Directorate)

Audit observed that, all the three projects remained incomplete (October 2022). The projects were put on hold mainly due to shift in policy (in December 2018) from execution of standalone mode[359] to cluster mode[360]. The policy was changed because construction of processing and disposal facility for each municipal body might not be technically and commercially viable. Formation of clusters of municipal bodies with common processing facilities would ensure a certain volume of solid waste, so Waste Processing Agencies would find such processing facilities viable to run. Expenditure of ₹ 3.12 crore had been incurred (as of November 2022) on these three projects, while the balance amount of ₹ 3.76 crore was lying with the implementing agencies/ ULBs. The entire fund of ₹ 1.82 crore, given to the Santipur Municipality, had remained idle, since its release in July 2017 in the bank account of this municipality. The projects could not be restarted even after four years. The SUDA admitted (January 2023) the audit observation.

Recommendations:

3. The Department should provide budget for SWM commensurate with the approved SWM action plans and ensure its proper usage.

4. The Government should levy, collect sanitation and conservancy charges, as provided in the State Policy on SWM.

[357] *Procurement of bins and battery operated tippers.*

[358] *On geotechnical investigation, construction of boundary walls and procurement of bins.*

[359] *For each ULB there will be a solid waste processing and disposal facility.*

[360] *Common solid waste processing and disposal facility for group of ULBs.*

4.7 Generation and Segregation of Waste

The quantum of MSW, generated by all ULBs in the State, for the period 2017-22, is given in **Table 4.4**.

Table 4.4: Quantity of solid waste generated in the State (125 ULBs)

Years	2017-18	2018-19	2019-20	2020-21	2021-22
Ton per Day (TPD)	14,000	14,613.30	13,980	13,709	13,709

(Source: Annual Reports of WBPCB on the SWM Rules, 2016)

4.7.1 Quantification of waste

Clause 1.4.3.3.1 of the MSWM Manual, 2016 (Part-II) stipulates that, for the purpose of long-term planning, the average amount of waste disposed by a specific class of generators, can be estimated only by averaging data from several samples collected continuously for seven days, at multiple representative locations, within the ULB's jurisdiction, in each of the three main seasons (*i.e.* the summer, winter and rainy seasons). The waste quantities are to be aggregated over the seven-day period, weighed, and averaged. These quantities can then be extrapolated to the entire urban local body (ULB) and the per capita generation assessed.

Para 1.4.3.3 of the MSWM Manual, 2016 (Part-II) states that: (i) per capita waste generation increases by about 1.3 *per cent* per year and (ii) with an urban growth rate of 3 to 3.5 *per cent* per year. Thus, the annual increase in quantity of waste may be considered at 5 *per cent* per year.

Scrutiny of the DPRs/Master Plans of the SWMs 25 of the test-checked ULBs (except NKDA[361]), revealed that the above mentioned methodology had not been adhered to, while assessing the quantity of solid waste generation, as detailed below:

- In the DPRs of 24 ULBs (except Haldia, where the projected rate was 5.12 *per cent*), the annual increase of waste generation quantity had been estimated as being in the range of 1.17 to 4.29 *per cent (*as shown in ***Appendix-30****),* while the MSWM Manual, 2016, provided for five *per cent* annual growth. Thus, estimation for waste generation, in the DPRs/SWM Plans, was not in consonance with the provisions of the MSWM Manual, 2016.
- In the SWM Master Plan for Kolkata (September 2019), the per capita residential solid waste generation of Kolkata, for the year 2018, had been assessed as 492 gram per day and the same had been extrapolated to project waste generation till the year 2048. A sample field survey had been conducted in the city, in March 2018 (*i.e.* only one season), to assess the source-wise waste generation, depending on the household income levels. Samples for only two days had been weighted and averaged, to arrive at the per capita waste generation of a particular class, based on the income level. Moreover, samples in respect of high income groups were taken only from one location *i.e.* Gariahat HIC Housing. Thus, the per capita waste

[361] *NKDA had not prepared DPR/SWM Plan (as of November 2022).*

generation, for the baseline year 2018, as calculated in the Master Plan, was not a true representative figure for the residential waste generation of Kolkata.

- The SWM Master Plan of Kolkata, had considered a population growth rate of 1.3 *per cent* annually, as per the Manual, while arriving at the projected per capita residential waste generation till the year 2048. Further, the floating population of Kolkata was considered to be 60 lakh, throughout the plan period (2018 to 2048). The per capita waste generation by this floating population was calculated at one-third of the per capita residential waste generation. The waste generation of the floating population, was kept constant (*i.e.* one-third of 492 gram per capita per day) throughout the plan period, without considering growth in the floating population. As a result, the total projected waste generation of Kolkata was understated throughout the plan period.
- In 12[362] of the test-checked ULBs, no surveys had been conducted, in order to assess the waste generation and, in nine[363] ULBs, surveys had been conducted for only two-three days, against the prescribed period of seven days, in each of the three main seasons. The days of survey had not been specified for the remaining five[364] ULBs.
- The SWM Master Plan for Kolkata and the Short Term Plans for FYs 2020-21 to 2025-26, did not take into account the seasonal variation in waste generation during Durga Puja, in arriving at the per capita waste generation (projected) till the year 2048.

The Department stated (January 2023) in the Exit Conference that assessment of waste generation was being made afresh through household surveys, and DPRs would be revised accordingly. The Department further added that KMC would be requested to factor in seasonal variations while estimating waste generation.

4.7.2 Segregation of Waste

As per Rule 3 of the SWM Rules, 2016, 'segregation' means sorting and separate storage of various components of solid waste, namely: (i) biodegradable waste, including agriculture and dairy waste; (ii) non-biodegradable waste, including recyclable waste; (iii) non-recyclable combustible waste; (iv) sanitary waste; (v) non-recyclable inert waste; (vi) domestic hazardous waste and (vii) construction and demolition waste. The State Policy on SWM (2018) set a time line of two years to implement segregation of waste at source, in line with Rule 22 of the SWM Rules, 2016.

The status of segregation of MSW, in the State, for the period 2017-22, is given in **Table 4.5**.

[362] *Asansol MC, Balurghat, Baranagar, Bongaon, Burdwan, Chandrakona, Egra, Haldia, Jhargram, NKDA, Pasnkura and Siliguri MC.*

[363] *Arambag, Budge Budge, Jangipur, Kandi, KMC, Kurseong, Mirik, Old Malda and Rampurhat.*

[364] *Baidyabati, Birnagar, Haringhata, Kamarhati and Titagarh.*

Table 4.5: MSW generated by all ULBs in the State

Years	2017-18	2018-19	2019-20	2020-21	2021-22
MSW generated (in TPD)	14,000	14,613.30	13,980	13,709	13,709
MSW segregated and transported (in TPD)	No information	No information	No information	No information	5,916
Percentage	-	-	-	-	43

(Source: Annual Reports of WBPCB on the SWM Rules, 2016)

From the above table, it is evident that, as of March 2022, only 43 *per cent* of the waste had been segregated and transported in the State. However, the figure of segregated waste in the WBPCB's Annual Report (2021-22) on the SWM Rules, 2016 appears to inflated as discussed in the subsequent paragraphs.

4.7.3 Segregation of waste at source/household level

Section 2.2.1 of the MSWM Manual, 2016 (Part-II), stipulates that ULBs must accord highest priority for segregation of waste at source. Audit observed that, in the 26 test-checked ULBs, out of 761 wards, the door-to-door collection of segregated solid waste had not been started in 647 wards (85.02 *per cent*).

Out of the three test-checked Municipal Corporations, door-to-door collection of segregated waste had not been started in any of 106 wards of the Asansol Municipal Corporation till October 2022. In the Siliguri and Kolkata Municipal Corporations, door-to-door collection of segregated waste ranged between 11 *per cent* and 19 *per cent*. In three[365] of the test-checked Municipalities, door-to-door collection of segregated waste had not been started till October 2022. This was attributed to shortage of vehicles, manpower *etc*.

The Department stated (January 2023) in the Exit Conference that non-availability of site for dumping/disposal of solid waste was one of the main reason for non-collection of the segregated waste in Haringhata. The Department added that in Asansol MC, collection of segregated waste has been started in few wards in January 2023.

4.7.4 Issue of bins for promoting segregation at source

SUDA/KMDA procured (in between September 2017 and June 2021) 89.75 lakh pair of bins, at a cost of ₹ 77.96 crore and supplied to all the ULBs, except KMC, for ultimate distribution to households and the community, to encourage segregation of waste at source. KMC separately procured 15.44 lakh pairs of bins, at a cost of ₹ 41.74 core, for distribution within its area.

Audit observed that in the 26 test-checked ULBs, against the requirement of 27.20 lakh pairs of bins, of 10 litre capacity each, 25.47 lakh pairs of bins were available, of which 12.67 lakh pairs of bins had been distributed to households (till November 2022). The remaining 12.80 lakh pairs of bins had been lying

[365] *Haringhata (17 wards), Mirik NAA (9 Wards) and Haldia (29 wards).*

with 14 ULBs[366]. Reasons for non-distribution of bins were not available on records.

During Joint Physical Verifications (JPVs), conducted (July 2022 to November 2022) along with the officials of the concerned ULBs, Audit found that segregation of waste had not been adopted in the Haringhata Municipality and Mirik NAA, despite the availability of 17,072 pairs of bins with them. In the Haldia Municipality and Asansol Municipal Corporation, segregation of waste at source, had not been started despite distribution of 2,75,287 pairs of bins having taken place. In remaining 22 ULBs, segregation of waste was collected in only selected/model wards. The JPV also showed that mixed waste was being handed over to waste collectors, by households, in these four ULBs, despite audio announcements regarding the importance of segregation into wet and dry waste.

The SUDA stated (January 2023) that collection of segregated waste is now being ramped up.

4.7.5 Segregation of domestic hazardous waste and sanitary waste

As per clause 7.1 of the MSWM Manual, 2016 (Part-II), special waste[367], including domestic hazardous waste, comprises of any solid waste, or a combination of solid wastes, that requires special handling and disposal, because of its quantity, concentration, physical and chemical characteristics, or biological properties, in order to protect human health, as well as the environment, and to exploit its potential for recycling. Further, Rule 15 of the SWM Rules, 2016, specifies the roles and responsibilities of ULBs in regard to domestic hazardous waste.

As per clause (j) of the Rule 15 of the SWM Rules, 2016, ULBs are to ensure safe storage and transportation of the domestic hazardous waste to the hazardous waste disposal facility. Further, clause (i) of the Rule 15 of the SWM Rules, 2016 stipulates establishment of waste deposition centres for domestic hazardous waste and to give direction for waste generators to deposit domestic hazardous wastes at this centre for its safe disposal and notify the timings of receiving domestic hazardous waste at such centres.

Audit observed that none of the 26 test-checked ULBs had notified the timings of receiving domestic hazardous waste[368], at the deposition centres. Consequently, domestic hazardous waste was getting mixed with other solid waste and reaching the landfills.

Further, as per clause 4 under Section 2.2.1 of the MSWM Manual, 2016, sanitary waste, generated by households, was to be wrapped in old newspapers/pouches provided by the manufacturers and handed over to the waste collectors separately. Audit, however, observed that none of the test-checked ULBs had emphasised segregation and disposal of sanitary waste, as required.

The SUDA stated (January 2023) that a central notification for domestic hazardous waste had been issued. However, the fact remains that ULBs had not streamlined the collection process for domestic hazardous waste.

[366] *Asansol MC, Balurghat, Bongaon, Egra, Haringhata, Jhargram, Kamarhati, Kandi, Kolkata MC, Mirik, Old Malda, Panskura, Rampurhat and Titagarh.*

[367] *Examples-Plastic waste, Bio-medical waste, Slaughterhouse waste, Electric and electronic waste (e-waste), Waste tyres, Battery waste etc.*

[368] *Examples- Paint and insecticides container, used CFLs, tube lights, chemical, batteries etc.*

4.7.6 Agreement for collection of mixed waste

Rule 15(b) of the SWM Rules, 2016, states that ULBs have to make arrangement for door-to-door collection of segregated solid waste, from all households, including slums and informal settlements, commercial, institutional and other non-residential premises.

Of the 26 test-checked ULBs, only the Haldia Municipality had engaged (September 2007) a private operator[369], for the development, operation and maintenance of an Integrated MSWM Project facility. The private operator had been entrusted with the management of household solid waste in the Haldia Municipality and the agreement with the said operator was valid for 30 years.

The private operator was conducting daily door-to-door collection of municipal solid waste, in all the 29 wards of the municipality without segregation**.** The unsegregated municipal waste, was then being transported to the processing plant.

Though the SWM Rules, 2016 came into force from April 2016, making segregation of solid waste imperative, the Haldia Municipality did not revise the existing agreement made with the private operator and continued with the unrevised agreement of collection of mixed waste and paid ₹ 20.22 crore, to the private operator, during 2017-2022, for its services.

The SUDA stated (January 2023) that the matter would be taken up with the private operator.

4.7.7 Open VAT system for temporary deposit of municipal solid waste

Rule 15(o) of the SWM Rules, 2016, states that the local authorities are to set up covered secondary storage facilities, for temporary storage of street sweepings and silt removed from surface drains, in cases where direct collection of such waste into transport vehicles is not convenient. Waste so collected is to be disposed, of at regular intervals.

During Joint Physical Verification, in all the 26 selected ULBs, it was, however, noticed that the open vat system was still operational, for temporary storage of municipal solid waste, involving biodegradable and non-biodegradable waste. Almost all such open vats were handling mixed solid waste, on a daily basis.

The SUDA stated (January 2023) that the ULBs had been advised regarding the requirement of open VAT free city as per the SWM Rule, 2016.

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[369] *West Bengal Waste Management Ltd. (WBWML), a subsidiary of Ramky Enviro Engineers Ltd, Hyderabad.*

Fig 4.1 & 4.2: Open VAT system for solid waste in Asansol Municipal Corporation

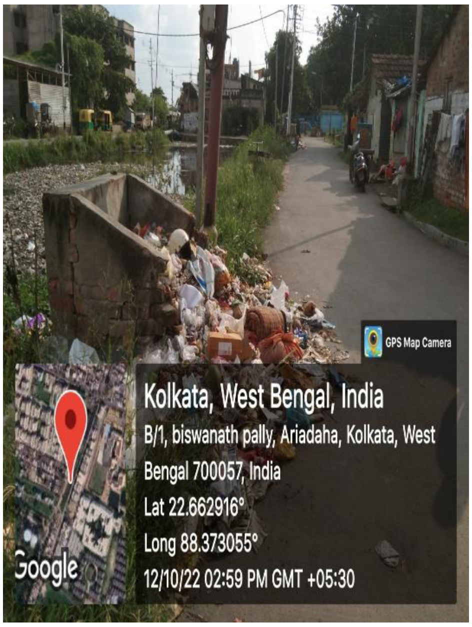

Fig 4.3: Open Vat in Kolkata Municipal Corporation

Fig 4.4: Open Vat in Balurghat Municipality

Recommendation 5:

The Government should assess the quantity of solid waste generated as per MSWM Manual, 2016 for effective management of waste. ULBs should strictly ensure maximisation of the segregation of waste at source.

4.8 Collection and Transportation of waste

4.8.1 Collection and transportation of solid waste

Rule 15(b) of the SWM Rules, 2016, regarding the duties and responsibilities of local authorities, stipulates that local authorities have to arrange for door-to-door collection of segregated solid waste, from all households, including slums and informal settlements, as well as commercial, institutional and other non-residential premises. In so far as multi-storey buildings, large commercial complexes, malls, housing complexes *etc*. are concerned, the segregated solid waste, is to be collected from the entry gate, or from any other designated location.

The quantum of waste generated and collected in the State, during FYs 2017-18 to 2021-22, is shown in **Table 4.6.**

Table 4.6: Gap in waste generation and collection

Financial Year	Generated	Collected	Gap (%)
	(in TPD)		
2017-18	14,000	11,900	2,100 (15%)
2018-19	14,613	13,065	1,548.67 (10.60%)
2019-20	13,980	12,062	1,918 (13.72%)
2020-21	13,709	13,356	353 (2.57%)
2021-22	13,709	13,687	22 (0.16%)

(Source: Annual Reports of WBPCB on the SWM Rules, 2016)

It can be seen that the gap in generation and collection of MSW, reduced from 15 *per* cent in FY 2017-18, to 0.16 *per cent* in FY 2021-22 As per the information furnished by the 26 test-checked ULBs, out of 761 wards, door-to-door collection of solid waste was totally absent in 116 wards (15.24 *per cent*), as of March 2022. In Haringhata Municipality, door-to-door collection was not being done in any of its 17 wards. Further, there was shortage of 71.33 *per cent* of tricycle vans for door-to-door collection of solid waste from households, in 12 ULBs[370], indicating inefficiencies in the waste collection system.

During Joint Physical Verification in all the 26 test-checked ULBs, municipal solid waste was found dumped at roadsides, canal banks, drains *etc*. which indicated inefficient waste collection. Thus, the claim of collection of approximately 100 *per cent* of MSW generated in the State, was not based on proper evidence.

Fig 4.5: Solid waste dumped on the roadside, in the Old Malda Municipality

Fig 4.6: Solid waste dumping in a water body, in the Egra Municipality

[370] *Asansol MC, Baidyabati, Balurghat, Budge Budge, Egra, Haringhata, Kamarhati, Kandi, Kolkata MC, Panskura, Rampurhat and Titagarh.*

Fig 4.7: Arambag Dumping Ground near Dwarekeswar River

4.8.2 Compactors for transportation of mixed solid waste

Compactors squeeze and compress the volume of waste, so that more waste can be carried per trip and transportation costs can, thereby, be reduced. Unsegregated MSW which include domestic hazardous waste when compressed in the compactors, chances of contamination of MSW by toxic waste such as batteries, glass pieces *etc*. is significant. Therefore, handling of such waste would not only be risky but quality of by-product would be adversely affected. The uses of compactors also go against the principle of aerobic composting[371], as mentioned in Clause 3.2.2 of the MSWM Manual, 2016 (Part-II).

Despite the above demerit, 218 movable compactors were procured by SUDA, KMDA and Jalpaiguri Municipality, between January 2016 to September 2018, at a cost of ₹ 94.76 crore**.** Further 23 stationary compactors were procured by SUDA and KMDA, at a cost of ₹ 13.16 crore (December 2015-March 2018). All the procured compactors were delivered to different ULBs.

Deficiencies in the segregation of waste at source, and the use of these compactors for compression and transportation of mixed waste to the dumping grounds, was not conducive to aerobic composting of organic waste as direct access to air is significantly reduced.

The matter was referred (December 2023) to the Department, however, reply has not been received (January 2024).

4.8.3 Utilisation of SWM vehicles

In 10[372] out of the 26 test-checked ULBs, it was noticed that 29 SWM vehicles[373], costing ₹ 5.45 crore, purchased between March 2016 and July 2021, had not

[371] *A biological process of stabilising the solid waste in presence of air.*

[372] *Birnagar, Chandrakona, Haldia, Haringhata, Jangipur, Kamarhati, Kurseong, Old Malda, Panskura and Titagarh.*

[373] *Movable Compactor, Dumper, Tipper etc.*

been used for different reasons, such as: (i) non-starting of SWM activities due to absence of dumping grounds, (ii) absence of JCBs for loading the waste into dumpers, (iii) absence of scope of utilization due to hilly area and (iv) topographical limitations *etc*. Joint Physical Verification corroborated the fact that these vehicles had either not been put to use at all, or they had rarely been used after their initial commissioning, and had been lying idle, for periods ranging from one year to four years, exposing them to the risk of being rendered unusable in future. Municipal Solid Waste was found dumped at roadsides, canal banks, drains *etc*. in all the test-checked ULBs, indicating inefficient waste collection.

Fig 4.8: Movable compactor lying idle in the Titagarh Municipality

Fig 4.9: Hydraulic Tipper lying idle in the Kurseong Municipality

The SUDA stated (January 2023) that after analysing the requirement, the vehicles will be re-distributed to different ULBs to ensure its proper utilisation.

Recommendations:

6. The Government should incentivise segregation of waste at source and effective system should be put in place for collection, transportation and disposal of the segregated waste.

7. Procurement of SWM vehicles should be done only after realistic assessment of the requirement and utility. The vehicles already procured should be gainfully deployed.

4.9 Processing of Municipal Solid waste

In accordance with Section 4.1 of the MSWM Manual, 2016 (Part-I), the selection and adoption of MSW processing technologies are to be based on defined selection criteria and they should also be subject to a detailed due diligence study, which ascertains the appropriateness of the technology, to the prevailing conditions of the respective ULBs. Treatment and processing of segregated waste streams not only reduces operational costs, but also increases the efficiency of the process. The waste processing technologies, available for ULBs, are composting[374], waste-to-energy[375],

[374] *Composting is an aerobic process in which organic materials present in wastes are broken down by microorganisms, generally bacteria and fungi.*

[375] *Waste-to-energy is the process of generating energy in the form of electricity and/or heat from the treatment of waste.*

bio-methanation[376] *etc*. The objectives of segregation of MSW can be achieved when there are facilities available for treatment/processing of segregated waste.

4.9.1 Status of waste processing in West Bengal

The status of waste collected and processed, in the 125 ULBs, in the State, during the FYs from 2017-18 to 2021-22, is given in **Table 4.7**.

Table 4.7: Status of waste processed, at the State level

(In TPD)

Financial Year	2017-18	2018-19	2019-20	2020-21	2021-22
MSW collected	11,900	13,064.63	12,062	13,356	13,687
Processed	830	916	916	667.60	3,047
Percentage	6.97	7.01	7.59	5.00	22.26

(Source: Annual Reports of WBPCB on the SWM Rules, 2016)

It can be seen from the table that, on an average, 6.61 *per cent* of the waste collected, was processed in the State, during the period 2017-21 in five ULBs. In the remaining 120 ULBs there were no waste treatment facilities and the untreated waste was being dumped in the dumping sites. The figures increased to 22.26 *per cent* in the financial year 2021-22, due to initiation of interim processing units[377] and the augmentation of the existing waste processing facilities.

In the 20 test-checked ULBs/Development Authorities, the average quantity of 1,253.189 MT of solid waste collected per day was being dumped at various dumpsites during FYs 2017-18 to 2021-22, without treatment/ processing. In the remaining six[378] ULBs, only 13.76 *per cent* of the average waste collected was processed. The low rate of processing, in the test-checked ULBs, was due to inadequate infrastructure, as explained in the subsequent paragraphs.

The SUDA admitted (January 2023) the fact about low percentage of processing of solid waste in the State and assured that steps would be taken up to improve the situation.

Case study: Kolkata Municipality Corporation (KMC)

During FYs 2017-18 to 2021-22, approximately, 4,500 TPD of solid waste[379] had been collected from KMC area, as against the generation of 4,590 TPD. The solid waste, so collected, consisted of bio-degradable wet waste (2,500 TPD), dry waste (1,200 TPD) and C&D waste (800 TPD). It was noticed that 500 TPD of the wet waste collected, had been processed in a compost plant at Dhapa (operational since 2010). In addition, 0.90 TPD waste had been processed in five organic waste composters, five TPD waste had been processed in a

[376] *Biomethanation is a process by which organic material is microbiologically converted under anaerobic conditions to biogas.*

[377] *Interim Processing Units are temporary structures, set up in the existing dumping grounds for processing of wet waste at low cost.*

[378] *Baidyabati, Haldia, Bongaon, Arambag, Siliguri MC and Kolkata MC.*

[379] *Consisted of bio-degradable wet waste (2,500 TPD), dry waste (1,200 TPD) and C&D waste (800 TPD).*

Bio CNG plant at Dhapa (inaugurated in September 2022) and two TPD waste had been processed at Plastic Processing facility at Dhapa. Further, 17 TPD dry waste had been segregated and channelized in the recovery chain[380] at Dhapa. Thus, a total of 524.90 TPD waste had been processed at Dhapa. The remaining 3,975.10 TPD waste had been dumped at the Dhapa and Gardenreach Dumpsites. The service level benchmark for the 'Extent of recovery[381] of Municipal Solid waste' collected had been prescribed as 80 *per cent* of the total waste collected. KMC could, however, achieve only 11.66 *per cent,* which was significantly below the benchmark.

4.9.2 Fresh waste processing facility and material recovery facility

Rule 22 (Sl. No. 8) of the SWM Rules, 2016 stipulates for setting up solid waste facilities by local bodies within three years from the date of notification (April 2016) of the Rules.

SUDA awarded (March 2022) 46 works **(***shown in* ***Appendix-31*****)** of " *Design, build, finance, operate and transfer of Municipal Wet waste processing facility based on composting and/or bio-methanation technology, setting up Semi-Automatic Material Recovery Facility for Dry Waste and construction of Sanitary landfill (as per required size) along with operation & maintenance for 10 years (renewable) under Swachh Bharat Mission-Urban for 46 Municipalities in West Bengal*", to five Agencies[382], for completion between six months and one year. All the 46 works were in progress, as of November 2022. The work of construction of solid waste processing facilities was taken up after nearly six years of the notification of the SWM Rules.

Audit observed that the processing units were to be constructed on the land reclaimed through bio-mining and bio-remediation[383] of the legacy waste dumpsites. However, due to non-completion of bio-mining and bio-remediation of the legacy dumpsites, (as mentioned in ***Paragraph 4.9.5***), the work of construction of processing units, for fresh waste, got delayed and could not be completed (till November 2022) within the stipulated time period of three years.

Thus, due to delay in setting up of fresh waste processing facilities, the untreated waste gets dumped at landfills or road side/bank of rivers which have the potential of causing damage to the environment.

4.9.3 Setting up of Interim Central Processing Units (CPU)

SUDA requested all ULBs (August/September 2021) to start segregation of waste at source, along with its collection and transportation, in a segregated manner, in at least two wards in each ULB, and to dispose of the same in the

[380] *Informal system of rag-pickers, waste recyclers etc. who collect useful materials from waste for recycling.*

[381] *This is an indication of the quantum of waste collected, which is either recycled or processed. This is expressed in terms of percentage of waste collected.*

[382] *Easter Organic Fertiliser Pvt. Ltd, National Fabrication of Farmers' Procurement Processing and Retailing Co-operatives of India Ltd., Parasmani Organic and Agri Products Pvt. Ltd, Simco telecommunications Ltd. and Tide Technocrates Pvt. Ltd.*

[383] *Bio-mining and bio-remediation of legacy waste means-excavation of old dumped wastes and make windrow of legacy waste, thereafter stabilisation of wastes through exposure of wastes to air along with use of composting bio-culture.*

existing dumping grounds, by: (i) preparing a temporary arrangement of two separate chambers, (ii) processing the wet waste in a low cost method and (iii) selling out the dry waste to the respective vendors within a specific date.

Further, the Department launched (April 2022), a special drive for the ULBs, in regard to scientific municipal solid waste management, to ensure: (a) segregation of waste at source, (b) collection and transportation of the segregated waste and (c) scientific processing of fresh waste, in a segregated manner, phase-wise, within June 2022.

During Joint Physical Verification of 31 dumping grounds, in 22[384] of the test-checked ULBs, it was seen that the work of construction of temporary arrangements, for processing of MSW, through interim CPUs, by constructing segregation platforms and separate chambers, had been taken up in the dumping grounds of only eight[385] ULBs. Out of these eight ULBs, only six[386] interim CPUs had been completed and only four[387] interim CPUs had been made functional (as of November 2022).

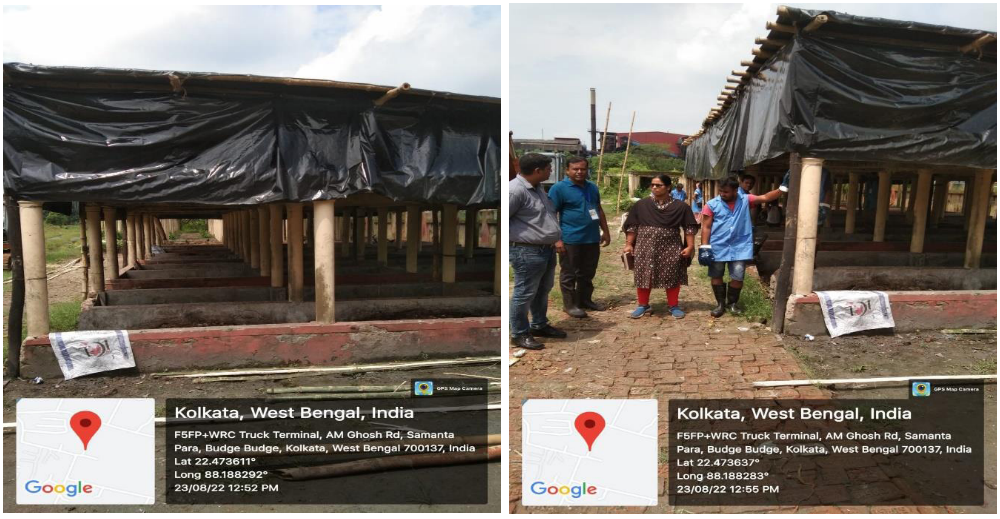

Fig 4.10 & 4.11: Functional Interim CPU at the Budge Budge Municipality

4.9.4 Construction of Compost Plant for Naihati Municipality

KMDA awarded (October 2017) the work of design and construction of a compost plant and allied works, at the Naihati Municipality, under SBM-U, to an agency[388], at a tendered cost of ₹ 10.00 crore, for completion within 12 months.

Scrutiny of records revealed that the Compost Plant was being constructed on a part of the marshy land on which Sanitary Land Fill (SLF)[389] was proposed to be constructed. As the land was not suitable for the construction of a Compost

[384] *Except Baidyabati Municipality and Haldia Municipality where Sanitary Land fill existed; Haringhata Municipality and NKDA do not have any dump site.*

[385] *Arambag Municipality, Budge Budge Municipality, Balurghat Municipality, Bongaon Municipality, Kamarhati Municipality, Rampurhat Municipality, Siliguri MC and Titagarh Municipality.*

[386] *Except Rampurhat Municipality and Titagarh Municipality.*

[387] *Arambag Municipality, Bangaon Muncipality, Budge Budge Municipality and Siliguri MC.*

[388] *M/s S. G. Construction.*

[389] *Is a site, for final and safe disposal of residual solid waste and inert waste, designed with protective measures against pollution.*

Plant, another agency[390] had to be engaged in May 2018 for land development at a tendered cost of ₹ 1.33 crore for completion within four months, due to which the construction work could not be completed within the scheduled date (October 2018). Neither the Naihati Municipality nor KMDA had assessed the suitability of the land before commencement of the project.

In December 2018, the Department emphasised that SWM projects be taken up on a cluster basis, in place of standalone facilities, and put on hold the construction of all the standalone bio-gas plants and compost plants in the State. KMDA, accordingly requested (January 2019) the agency to put on hold the on-going work of the compost plant, till further instructions.

In April 2019, after receiving the consent of the Department, KMDA requested the agency to resume the work of the compost plant. The Agency restarted the work, which continued till February 2020. The work was, however, not executed thereafter, due to lockdown on account of covid pandemic. The contractor had been paid ₹ 2.60 crore (as of September 2021), against physical progress of 26 *per cent* only. Further, additional expenditure of ₹ 1.61 crore had also been incurred on land development and construction of a boundary wall. KMDA finally closed (February 2021), the work and a fresh NIT was issued[391] (February 2021) for a new Municipal wet waste processing facility (design, build, finance, operate and transfer, along with operation and maintenance of the same for 10 years), for the Naihati Municipality. In the new NIT (February 2021), nothing was mentioned regarding use of the work already completed at a cost of ₹ 4.21 crore.

Thus, despite investment of ₹ 4.21 crore, the compost plant for the Naihati Municipality could not be completed, due to unsuitability of the land for the project, slow progress of work by the contractor, the lockdown due to covid pandemic *etc*.

The SUDA stated (January 2023) that the matter of retrofitting of the partly constructed infrastructure of the compost plant would be checked.

4.9.5 Bio-remediation of Legacy Waste

As per Rule 22 of the SWM Rules, 2016, the work of bio-remediation or capping of old and abandoned dumpsites, had to be completed within five years of enforcement (April 2016) of the SWM Rules, 2016. In OA No.519/2019, the Hon'ble NGT directed (July 2019) all Chief Secretaries of States/Union Territories is to ensure commencement of remediation of legacy waste dumpsites from 01.11.2019 and completion of remediation work preferably within six months and in no case beyond one year (*i.e.* by October 2020).

There were 123 dumpsites, in 112 ULBs in the State, with an aggregated legacy waste[392] of 123.87 lakh MT, on 838.09 acres of land. Bio-remediation work had been taken up for 90 dumpsites, in 78 ULBs, of which legacy waste of 20.74 lakh MT (16.74 *per cent* of total legacy waste) was reported to have been

[390] *The same agency M/s S. G. Construction got selected through tender process.*

[391] *Simoco Telecommunication (South Asia) Ltd and M/s Environ Solution.*

[392] *The wastes collected and kept for years on any barren land or dedicated Landfill is called legacy waste.*

processed, till September 2022, though the statutory time limit, for completing bio-remediation, had ended in April 2021. As per SUDA, six[393] dumpsites, in six ULBs, had been fully bio-mined[394], by processing legacy waste of 1.05 lakh MT and 28.82 acres of land had been reclaimed. Audit observed that delays, in the processing of legacy waste and reclaiming of land, had hampered the progress of setting-up of fresh waste processing facilities, as discussed in ***Paragraph 4.9.2***.

In January 2021, CPCB directed WBPCB to ensure that no fresh waste is disposed at the legacy waste dumpsites. CPCB also directed local authorities to make proper arrangements for fresh solid waste. During the Joint Physical Verification of 31 dumpsites, in 22[395] test-checked ULBs, Audit found that 29 dumpsites had continued to receive fresh waste. The unrestricted addition of fresh waste over legacy waste hampered the process of bio-mining of legacy waste and led to delays in creation of waste processing facilities for fresh waste, as discussed in ***Paragraph 4.9.2***. WBPCB, however, did not initiate action against concerned ULBs for non-compliance with CPCB directions.

The SUDA admitted (January 2023) the fact of delay in bio-remediation of legacy waste and continued dumping of fresh waste over legacy waste.

Fig 4.12: Legacy waste at the dumpsite of the Titagarh Municipality

Fig 4.13: Fresh waste dumped over legacy waste in the Garden Reach dumpsite of KMC

4.9.6 Processing of Construction and Demolition Waste

GoI notified the Construction and Demolition (C&D) Waste Management Rules, 2016, in March 2016. As per Rule 3(c) of the C&D Waste Management Rules, 2016, C&D waste means the waste comprising of building materials, debris and rubble, resulting from construction, re-modeling, repair and demolition of any civil structure. Rule 6(8) of the C&D Waste Management Rules, 2016, mandates

[393] *Kharagpur Municipality-4 acres, Ghatal Municipality-2.5 acres, Khirpai Municipality-2 acres, Jangipur Municipality-0.33 acres, Jaynagar-Mazilpur Municipality-4.00 acres and Krishnanagar Municipality-15.99 acres.*

[394] *Biomining is the scientific process of excavation, treatment, segregation and gainful utilisation of aged municipal solid waste lying in dumpsites typically referred to as legacy waste.*

[395] *Haldia and Baidyabati Municipalities have two SLFs; and Haringhata Municipality and NKDA do not have dumpsites.*

local authorities to: (i) keep track of the generation of C&D waste within their jurisdictions, (ii) establish a data base and (iii) update it once in a year.

Information on the quantum of C&D waste, generated in the State, was not available with the WBPCB and the Department. Out of the 26 test-checked ULBs/Development Authorities (DAs), 25 ULBs/DAs did not have data on the C&D waste generation in their jurisdictions, with only KMC having maintained such data. As per information provided by KMC, about 800 TPD of C&D waste was generated in KMC area during FYs 2017-18 to 2021-22. For construction of the first C&D Waste Processing Plant in the State, KMC issued a work order[396] (January 2022), to an agency, for installation and operation of a 500 TPD, C&D waste processing plant at Pathargata. The plant was scheduled to be commissioned in six months from the Letter of Intent, *i.e.* by July 2022. During joint physical verification (December 2022), it was observed that civil construction and installation of the Plant and Machinery were still in progress.

Fig 4.14 & 4.15: C&D Waste Processing Plant under construction at Patharghata

Scrutiny of records revealed that NKDA did not undertake estimation of the quantity of the C&D waste generated in its area. To manage the C&D waste, the NKDA (Building) Rules, 2009 (amended in September 2016), provide a paid service for disposal of construction and demolition waste, subject to request being made in the prescribed format, to NKDA, by fixing a fee per ton, payable by the owner/builder/developer/interested person *etc*. NKDA engaged three private agencies, during FYs 2017-18 to 2021-22, through e-tender, for collection, transportation and disposal of C&D waste. Through selected agencies, NKDA disposed of 13,387.04 MT of C&D waste, during FYs 2017-18 to 2021-22. In absence of any processing plant, the C&D waste collected from NKDA area, had been disposed at various low lying lands/inhabitable lands, within the New Town area and at the Dhapa landfill site. Further, in absence of C&D waste processing plants, in other ULBs, the C&D waste generated gets mixed with the MSW.

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[396] *Design, installation and commissioning of C&D waste processing plant, including O&M, for a period of 10 years.*

Fig 4.16 & 4.17: Dumping of C&D Waste in low lying land in NKDA

4.9.7 Action by NGT for non-compliance with the provisions of the SWM Rules, 2016

Rule 22 of the SWM Rules, 2016, stipulated the statutory time limits for creation of necessary infrastructure, for implementation of the SWM Rules, 2016. However, though the statutory time limits had already lapsed, compliance with the SWM Rules, 2016, was yet to be achieved in the State. Observing the slow progress in implementation of the SWM Rules, 2016, NGT imposed environmental compensation of ₹ 32.91 crore, for the period July 2020 to May 2021. SUDA paid ₹ 25.62 crore to the WBPCB/Environment Department/CPCB, from the interest accrued from SBM fund. While obtaining approval from the Department for making payments of the above environmental cost, out of interest of SBM fund, it was considered to recoup the expenditure from the budget head of SWB. However, recoupment was not found to be made till August 2022. Another ₹ 0.80 crore had been paid to the WBPCB by the Kharagpur Municipality, in November 2020, with ₹ 6.49 crore still remaining unpaid (as of October 2022). Reasons for non-payment of ₹ 6.49 crore were not provided by SUDA, though called for.

NGT further imposed environmental compensation of ₹ 500 crore on the State of West Bengal, in its hearing dated 01 September 2022, for its failure to process solid waste and directed the State Government to deposit this Compensation amount, within two months, in a separate ring-fenced account[397], to be operated as per the directions of the Chief Secretary. This amount was to be utilized for restoration measures. However, SUDA did not furnish (November 2022) records in regards to compliance with the above NGT order. Non-utilization of funds and insufficient budgetary support render delayed the achievement of targets, set in the SWM Rules, 2016, for management of solid waste in urban areas.

Recommendation 8:

The Department should set up required infrastructure for Solid waste processing including early completion of bio-mining and bio-remediation of legacy waste.

4.10 Disposal of waste

As per the Handbook on Solid Waste Management for ULBs of West Bengal (August 2019), open landfills and dump-yards pose severe environmental risks

[397] *A ring-fenced account is a separate account to be operated as per direction of the Chief Secretary and utilise for restoration measures.*

such as leachate generation, fires or emission of greenhouse gases, and hazards to public health through disease vectors such as flies & rodents. It was, however, noticed that the Department did not assess the hazardous impact of waste on the health of the people.

Waste that cannot be reused/recycled/processed further, is to be disposed of at landfills that are designed to minimise the impact of the waste on the environment. As per clause 4.3 of the MSWM Manual, 2016 (Part-II) Sanitary landfilling has to be restricted to non-biodegradable, inert waste & other waste that is not suitable either for recycling or for biological processing.

4.10.1 Status of landfills in West Bengal

As per the SWM Rules, 2016, sanitary landfilling means the final and safe disposal of residual solid waste and inert waste, on land, in a facility designed with protective measures against pollution of ground water, surface water, fugitive air dust, wind-blown litter, bad odour, fire hazards, animals, birds, pests, rodents, greenhouse gas emissions, persistent organic pollutants and slope instability and erosion. Schedule-I of the SWM Rules, 2016, highlights criteria[398] for selection of sites for setting-up of sanitary landfills and facilities to be made available at sanitary landfill sites. Audit observed that there were only two sanitary landfills (SLF) in the State, as detailed in **Table 4.8**.

Table 4.8: Sanitary Landfills in West Bengal

Location of SLF	Concerned ULB	Area	Land owner	Whether authorisation obtained from WBPCB	Authorisation/ Consent to Operate valid up to	Waste disposed during 2017-22 (in MT)		
						Inert	Segre-gated	Mixed
West Bengal Waste Management Limited, Haldia	Haldia Municipality	10,000 sq m	Haldia Development Authority	Yes	Consent to Operate upto-28.02.2023 Authorisation upto-28.02.2024	10,787	5,383	41,899
Regional Waste Management Centre, Baidyabati, Hooghly	Six ULBs[399]	21,04,437 sq m	Baidyabati Municipality	pending	Consent to Operate-28.02.2022 (Expired) Authorisation upto-pending	-	-	3,00,741

From the above table, it is evident that, out of 125 ULBs in the State, only seven ULBs had designated SLFs, for scientific disposal of wastes.

During Joint Physical Verification of the Regional Waste Management Centre, Baidyabati, catering six ULBs, Audit found that five[400] ULBs, had dumped untreated mixed solid waste in the SLF, defeating the purpose of setting-up of SLF. Due to

[398] *100 m away from rivers, 200 m away from pond, 200 m away from habitations, design life of 20-25 year, concrete approach and internal roads etc.*

[399] *Baidyabati, Chapdani, Konnagar, Rishra, Srirampur and Uttarpara-Kortung Municipalities.*

[400] *Uttarpara-Kortung, Konnagar, Rishra, Srirampur and Chapdani Municipalities.*

dumping of mixed waste in the SLF, the possibility of filling up of the SLF, much before its design life, could not be ruled out as a SLF is meant for dumping of only non-biodegradable, inert and other waste (not suitable either for recycling or for biological processing), the volume of which is lesser than the volume of mixed waste.

Fig 4.18 & 4.19: Dumping of unprocessed mix waste in the SLF of the Regional Waste Management Centre, Baidyabati, Hooghly

Owing to acute shortage of sanitary landfills in the State, solid waste was either being dumped in the dumping grounds, or it was being informally dumped at the road side, in water bodies, drains, canals *etc*. During Joint Physical Verification, Audit observed instances of informal dumping of mixed solid wastes at the road side, in water bodies, drains, canals *etc*. in 25 selected ULBs (*i.e.* except in the case of NKDA).

Joint Physical Verification of 33 dumping grounds/SLFs of 24[401], out of the 26 test-checked ULBs, revealed that 20 dumping grounds had not been surrounded by the boundary walls; 10 dumping grounds did not have all-weather approach roads; 12 dumping grounds were near waterbodies/ canals; and eight dumping grounds were within 200 m of residential areas in violation of the provision of the Rules.

The SUDA admitted (January 2023) the audit observation, and stated that required infrastructure would be developed.

Fig 4.20: Agarpara dumping ground of the Kamarhati Municipality – surrounded by residential areas

Fig 4.21: Dumping of solid waste on the approach road of the dumping ground of the Titagarh Municipality

[401] *Except NKDA and the Haringhata Municipality, which did not have a dumping ground/SLF.*

4.10.2 Land for setting up of Sanitary Landfills

As per Rule 11(f) of the SWM Rules, 2016, the Department is to ensure identification of suitable land and its allocation to local authorities for setting up solid waste processing and disposal facilities, within one year from the date of notification (8 April 2016) of the SWM Rules, 2016.

As per information furnished (December 2022) by SUDA, out of 125 ULBs in the State, 38 ULBs had sufficient land for processing and dumping of solid waste, while the remaining 87 ULBs either had no land, or insufficient land. Further, inter-departmental transfer of 87.44 acres of land, for 14 ULBs, was under process (December 2022). Due to shortage of sufficient land for disposal, solid waste was being dumped at public places, roadside, river banks, canal banks *etc*.

Audit observed that the Old Malda Municipality had taken (June 2010) 6.87 acres of land on lease, from the Land & Land Reforms Department, Government of West Bengal, by depositing ₹ 19.88 lakh, for setting up of solid waste disposal facilities. Owing to public protests, however, the Old Malda Municipality had been unable to use the land (November 2022). Similarly, the Birnagar Municipality had been unable to use 1.83 acres of land purchased in September 2006, at a cost of ₹ 5.56 lakh due to public protests.

GoI had sanctioned (April 2017) an Integrated SWM Project, within the Naihati Municipality at an estimated cost of ₹ 40.21 crore, under SBM-U. The main components of this project were construction of an SLF and a Compost Plant.

The Naihati Municipality had, therefore, allotted (May 2017) 8.295 acres of land, to KMDA (the implementing agency), for the project work. KMDA had awarded (June 2017) the work of construction of the SLF, to a contractor, at a tendered cost of ₹ 10.55 crore, for completion within 12 months. Audit observed that the WBPCB had, however, denied (June 2018) its "*Consent to Establish*" for the project, as the site proposed for the project had a water body, as well as habitations within 200 metres.

KMDA officials requested (25 June 2018 and 16 August 2018), the Chairman, the Naihati Municipality, to select another suitable land for the project, so that the project could be started immediately. However, the Naihati Municipality had failed to identify another parcel land. Consequently, the work of construction of the SLF had not been started and the tender had been closed in February 2019.

Thus, construction of SLF, for the Naihati Municipality, had not been started (as of August 2022), for want of availability of suitable land. Consequently, approximately 100 TPD of solid waste, generated in the Naihati Municipality area continued to be dumped unscientifically.

4.10.3 Authorisation by the West Bengal Pollution Control Board

Clauses-c to h of Rule 16 of the SWM Rules, 2016, elucidated the role of the State Pollution Control Board (SPCB), in regard to granting of authorization for operating an MSW processing and disposal facility. The authorisation makes it incumbent upon the operator to scientifically manage municipal solid waste and comply with the provisions of the SWM Rules, 2016.

In case of the second SLF, at Baidyabati, Hooghly, it was observed that the WBPCB had given '*Consent to Operate*' up to February 2022. The Baidyabati Municipality had applied to the WBPCB for extension of '*Consent to Operate',* in March 2022, but the same was yet to be renewed by the WBPCB as of November 2022. Further, the required authorisation, under the SWM Rules, 2016, had also not been obtained for the facility as of November 2022. Thus, the SLF at Baidyabati was functioning without '*Consent to Operate',* as also without the authorisation required under the SWM Rules, 2016. Thus, WBPCB failed to enforce the consent mechanism.

The SUDA stated (January 2023) that the WBPCB would be requested to issue necessary consent.

4.10.4 Burning of waste in landfill sites/dump sites

NGT had directed[402] (December 2016) that there shall be complete prohibition of burning of waste on land, including at landfill sites. The NGT remarked that for each such incidence or default, violators including the project proponent, concessionaire, ULB, any person or body responsible for such burning, shall be liable to pay environmental compensation of ₹ 5,000 in case of simple burning, and ₹ 25,000, in case of bulk waste burning. Environmental compensation shall be recovered as arrears of land revenue by the competent authority in accordance with the law.

During JPV, traces of burning of mixed waste had been noticed in seven dump sites, in five[403] ULBs. Owing to the failure of the ULBs, to contain burning of waste in landfill sites/ dumpsites, the possibility of deterioration of ambient air quality, at the dumpsites and at the vicinity could not be ruled out.

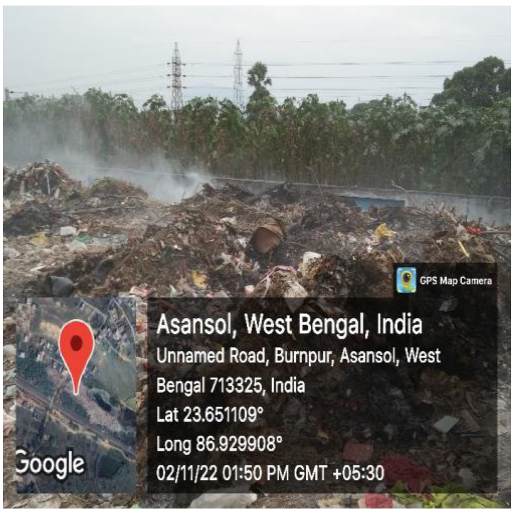

Fig 4.22: Fire at Burnpur Dumping ground of Asansol Municipal Corporation

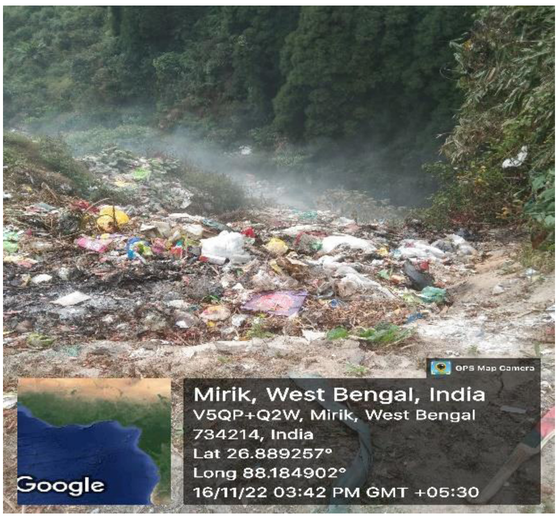

Fig 4.23: Fire at dumping site in Mirik NAA

402 *O.A.No-199/2014.*

403 *Asansol MC, Kamarhati Municipality, Mirik NAA, KMC and Siliguri MC.*

4.10.5 Dumping of solid waste in rivers

In OA No-10/2016/EZ, the NGT directed (20 September 2021) the State Authorities, including the Siliguri Municipal Corporation (SMC) and the West Bengal Pollution Control Board, to take steps for removing the garbage that was polluting the water of the rivers Mahananda, Jorapani and Phuleswari.

Wire netting and boulder sausage work, for *in situ* bio-remediation, had been set up in 36 major drains falling into the Mahananda River. However, no such work was found to be done in Jorapani and Phuleswari rivers. During JPVs (November 2022), instances of dumping of garbage, plastic and other material, in the Mahananda, Jorapani and Phuleswari rivers, were noticed. Thus, NGT order had not been fully complied with (as of November 2022), to arrest water pollution, due to the dumping of solid waste.

Fig 4.24: Gratings installed in a drain falling in River Mahananda to arrest Solid waste

Fig 4.25: Solid waste dumped in River Jorapani

Fig 4.26: Garbage in Phuleswari river

Recommendations:

9. The Department should provide sufficient and suitable land for setting up of waste processing and disposal facilities in ULBs on priority to minimize the adverse impact of untreated waste on public health and environment.

10. The Department should ensure that burning of solid waste, in landfills/ dumping sites, is stopped and the violators, if any, are mandatorily and swiftly penalised.

4.11 Monitoring and Evaluation of Waste Management System

4.11.1 Monitoring system at the ULB level

Clause 6.4 of the MSWM Manual, 2016, envisages establishment of a complaint redressal system, for citizens to voice their complaints and grievances regarding the provision of MSWM services, for promoting efficiency and transparency at the ULB level. The ULBs, through an analysis of the complaints or grievances it receives, are expected to identify lacunae and bridge gaps in service delivery. The time taken for resolution of grievances and the action taken in this regard, are also to be monitored and recorded through this system.

Audit observed that, out of the 26 test-checked ULBs, Complaint Registers for SWM activities, had not been maintained in 22[404] ULBs. As a result, the action taken against individual complaints, as also the time taken to resolve such complaints, could not be assessed in audit.

4.11.2 Service Level Benchmarks

Benchmarking is an important mechanism for introducing accountability in service delivery. It involves measuring and monitoring of performance of the service provider, on a systematic and continuous basis. Recognising its importance, the Ministry of Urban Development (MoUD), Government of India, launched (February 2009) the Service Level Benchmarking (SLB) initiative, covering water supply, waste water, SWM and storm water drainage. MoUD defined a common minimum framework for monitoring and reporting on various performance indicator, of which eight performance indicators pertain to SWM.

As per the declarations made by the test-checked ULBs, their achievements in regard to the extent of segregation, extent of recovery[405] of MSW, extent of scientific disposal[406] and extent of cost recovery[407] of MSW, were significantly low, as shown in ***Appendix-32***. However, the achievement claimed by the ULBs could not be verified in audit, as supporting records in this regard were not available.

[404] *Except Burdwan Municipality, Kurseong Municipality, Siliguri MC and Kolkata MC.*

[405] *This is an indication of the quantum of waste collected, which is either recycled or processed. This is expressed in terms of percentage of waste collected.*

[406] *The amount of waste that is disposed in landfills that have been designed, built, operated and maintained as per standards laid down by Central agencies. This extent of compliance should be expressed as a percentage of the total quantum of waste disposed at landfill sites, including open dump sites.*

[407] *This indicator denotes the extent to which the ULB is able to recover all operating expenses relating to SWM services from operating revenues of sources related exclusively to SWM.*

The SUDA while admitting (January 2023) the audit observation stated that agencies engaged in the management of solid waste would be directed to ensure improvement in achieving service level benchmark.

4.11.3 Submission of Annual Reports

As per Rule 24 of the SWM Rules, 2016, the operator of a solid waste processing and disposal facility is to submit its annual report to the ULB, in Form-III, on or before 30 April every year. The ULBs are required to file their Annual Reports, in Form-IV, to the concerned State Pollution Control Boards, on or before the 30th day of June, following the financial year to which the report relates. Each State Pollution Control Board, has to prepare and submit its consolidated annual report, to the Central Pollution Control Board and Ministry of Urban Development, in regard to the implementation of these rules and action taken against non-complying local bodies by the 31st day of July of each year in Form-V.

During scrutiny of records of the WBPCB, Audit noted that, out of the 125 ULBs in the State, only 35 ULBs had submitted their annual reports, for the Calendar Year 2017, to the WBPCB. Further, due to delay in submission of Annual Reports (submitted their Annual Reports after August 2018), by the ULBs, the WBPCB had filed its Annual Report, in Form-V, for the Calendar Year 2017, to the CPCB, only in the month of December 2018. Thereafter, the ULBs and WBPCB had submitted their Annual Reports on time.

As per WBPCB's Annual Report for the Calendar Year 2021 on the SWM Rules, 2016, submitted to CPCB in July 2022, there were six SLFs in the State having an aggregate capacity of 1,162 TPD. Audit, however, observed that, as per the documents made available to Audit, there were only two[408] SLFs in the State. Further, as per the Annual Reports, there were 107 dumpsites, with 1.20 crore MT of legacy waste, out of which five dumpsites had been cleared. Audit, however, observed that, as per the documents made available to Audit, there were 123 dumpsites in the State and only one legacy waste dumpsite (at Kharagpur) had been cleared (till December 2021).

As per the above mentioned Annual Report, there are 62 Composting Units (Capacity 3,023.80 TPD) in the State. However, in reply to an audit enquiry, WBPCB provided (October 2022) a list of 41 composting units only. Thus, the Annual Report of WBPCB did not reflect the actual compliance status of the SWM Rules, 2016, and there is a need to reconcile the number of available facilities with the field establishments and ULBs.

4.11.4 Compliance of SWM Rules 2016 in model cities and towns

Clause (iv) 39 (ii) of the NGT order in O.A. No. 606/2018 dated April 2019, cited that at least three major cities, and as many major towns, as possible, in the State, were to be notified within two weeks and were to be made fully compliant with the SWM Rules, 2016, within the next six months. In compliance of the NGT direction, the Department had notified (April 2019) three[409] model municipal

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[408] *SLF at Haldia and SLF at Baidyabati.*

[409] *Asansol Municipal Corporation (AMC), Durgapur Municipal Corporation (DMC) and Bidhannagar Municipal Corporation (BMC).*

corporations and five[410] model municipalities that were to be developed as model cities/towns complying with all the criteria of the SWM Rules, 2016. Audit observed that the identified model municipal corporations/municipalities had to be made fully compliant with the SWM Rules, 2016, by October 2019, but this had not been achieved, as of November 2022. As per the Annual Report (Calendar Year 2021) of WBPCB on the SWM Rules, 2016, the model municipal corporations/municipalities were expected to be fully compliant with the SWM Rules, 2016 by December 2022.

Out of the eight model municipal corporations/municipalities, three[411] were test-checked, between July and November 2022, for assessing the extent of compliance with the SWM Rules, 2016. During Joint Physical Verification and on scrutiny of the records of these ULBs, Audit observed instances of inadequate collection of segregated waste, inadequate processing of collected waste, delay in bio-mining of legacy waste, delay in construction of processing facilities for fresh waste, disposal of mixed waste in sanitary landfills *etc*. In view of the deficiencies noticed during Joint Physical Verification, the possibility of making the model municipal corporations/municipalities compliant with the SWM Rules, 2016, within December 2022 appears to be remote.

The SUDA stated (January 2023) that steps would be taken to ensure that the model cities/town are made fully compliant with SWM Rules, 2016.

4.11.5 Integration of Informal waste collectors

Rule 15(c) of the SWM Rules, 2016, stated that local authorities have to establish systems, for recognising organizations of waste pickers or informal waste collectors, and to promote and establish systems for integration of these authorized waste-pickers and waste collectors, in order to facilitate their participation in solid waste management, including door-to-door collection of waste. Rule 15(l) of the SWM Rules, 2016, stated that local authorities have to provide training on solid waste management, to waste-pickers and waste collectors. The State Policy on SWM stated that, ULBs should engage rag-pickers and similar kinds of groups, for segregation and selling of recyclable waste, at secondary transfer stations[412]. Rule 15(d) of the SWM Rules, 2016 stated that local authorities have to facilitate formation of Self Help Groups, provide identity cards and, thereafter, encourage their integration in solid waste management, including door-to-door collection of waste.

As per information furnished (November 2022) by SUDA 4,076 rag-pickers had been identified in eight ULBs[413]. Further, in the remaining 117 ULBs the identification process would be started soon. Audit, however, observed that the identified waste-pickers/collectors had not been registered by the ULBs,

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[410] *Uttarpara-Kotrung Municipality, Baidyabati Municipality, Rishra Municipality, Kalyani Municipality and Haldia Municipality.*

[411] *Asansol Muncipal Corporation, Haldia Municipality and Baidyabati Municipality.*

[412] *Place where solid waste collected from door-to-door is dumped for subsequent transfer to processing/disposal facilities.*

[413] *Asansol MC-520, Durgapur MC-1,728, Bidhannagar MC-1,329, Baidyabati Municiplity-116, Haldia Municiplity-85, Kalyani Municipality-139, Uttarpara-Kotrung Municipality-61 and Rishra Municipality-98.*

for their integration with the formal SWM system. Further, they had not been imparted any training on solid waste management, nor any financial incentive had been provided to them so far (as of November 2022).

Recommendations:

11. The Department should draw up a time-bound plan for ULBs, for achieving the Service Level Benchmark targets.

12. WBPCB should ensure strict monitoring of SWM facilities through regular inspections and ensure that its Annual Report on SWM reflect the actual position.

Anadi Misra

KOLKATA | **(ANADI MISRA)**
The 24 APR 2024 | **Principal Accountant General (Audit-II) West Bengal**

Countersigned

NEW DELHI | **(GIRISH CHANDRA MURMU)**
The 26 APR 2024 | **Comptroller and Auditor General of India**

Appendices

Appendices

Appendix –1

(Refer Paragraph 1.7.7.1)

Activities /works approved in APOs but not implemented in STR and BTR

(₹ in crore)

Year	Activity	Items of work	Target		Achievement	
			Physical	Financial	Physical	Financial
A. Sundarban Tiger Reserve (STR)						
2017-18	Anti-Poaching	Purchase of vehicles (speed boat)	1	0.30	0	0
	Strengthening of infrastructure	Creation of watch tower	2	0.39	0	0
		Procurement of software	1	0.01	0	0
	Man-animal conflict	Procurements of tranquilizing equipment's *etc.*	31	0.06	0	0
	Mainstreaming wildlife concerns	Capturing problematic and aberrant wild animal	1,030	0.10	0	0
	Staff development	Specialized training in park interpretation	1	0.005	0	0
		Specialized training in management planning	1	0.005	0	0
		Specialized training in jurisprudence and wildlife forensic	2	0.01	0	0
2018-19	Staff development	Specialized training in management planning	1	0.005	0	0
	Anti-Poaching	Procurement of arms and ammunition	7	0.07	0	0
		Maintenance of wireless network	3	0.02	0	0
		Maintenance of arms and ammunition	1	0.005	0	0
	Strengthening	Procurement of vehicles	1	0.13	0	0
2019-20	Anti-Poaching	Procurement of arms and ammunition	5	0.03	0	0
		Procurement of field gear, night vision devices, *etc.*	49	0.08	0	0
		Purchase of vehicles, boats, *etc.*	1	0.20	0	0
	Strengthening	Creation of fire watch towers *etc.*	1	0.20		0
		Creation of road network	3	0.02	0	0
		Maintenance of fire watch towers	5	0.05	0	0
2020-21	Anti-Poaching	Procurement of arms and ammunition	4	0.01	0	0
		Procurement of vehicles, boat, *etc.*	1	0.20	0	0
	Strengthening	Creation of fire lines and fire breaks	3	0.04	0	0
		Maintenance of patrolling camps, culverts, repairing of jetties	6	0.15	0	0

Year	Activity	Items of work	Target		Achievement	
			Physical	Financial	Physical	Financial
2021-22	Strengthening	Creation of fire watch towers *etc.*	1	0.32	0	0
		Maintenance of earthen ponds	6	0.03	00	0
		Maintenance of fire watch tower	4	0.04	0	0
		Maintenance of kuchha roads	2	0.05	0	0
	Anti-Poaching	Creation of wireless tower	40	0.10	0	0
	Eco-development	Basic health care/ health camps for staff	53	0.37	0	0
	Addressing man-animal conflicts	Maintenance of tranquilizing equipment and rescue vehicles	14	0.15	0	0
B. Buxa Tiger Reserve (BTR)						
2017-18	Monitoring of wild animal	Translocation of tiger/ tigress from adjoining landscape	-	0.25	0	0
		Hiring of vehicles including fuel	-	0.08	0	0
		Engagement skilled manpower from JFMC	-	0.20	0	0
		Procurement of camera, night vision	-	0.04	0	0
	Water retention structure	Mntc. of natural wetland by way of desilting *etc.*	-	0.05	0	0
	Operation Monsoon	Operation cost of river camp during monsoon	10	0.05	0	0
	Mntc. of fire lines	Up keeping, cleaning and creation of firelines	-	0.03	0	0
2018-19	Strengthening	Construction of staff quarters, family hostels, office improvement, house-keeping *etc.*	1	0.55	0	0
		Construction of earthen ponds	4	0.06	0	0
		Repair & Mntc of existing road networks	50 km	0.22	10 km	0.06
		Mntc of existing wooden bridges	-	0.05	0	0
2019-20	Mainstreaming wildlife concern	Construction of enclosure	1	0.62	0	0
		Hiring of veterinary professional		0.06	0	0.02
		Vehicle hiring and vehicle fuels	2	0.05	1	0.02
	Strengthening	Maintenance of road networks	50	0.15	0	0
2020-21	Anti-poaching	Engagement of civic volunteers *etc.*	-	0.56	-	0.28
	Strengthening	Procurement of camera for trapping	50	0.10	0	0
2021-22	Upkeepment of anti-poaching tower including drinking water supply		8	0.10	-	0.50
	Maintenance of grassland plantation		10 ha	0.02	0	0
	Procurement of camera for trapping including battery, SD card *etc.*		50	0.13	0	0
	Administrative cost/Institution charge		-	0.05	0	0

(Source: Departmental Records)

Appendix-2

(Refer Paragraph 1.7.7.1)

Activities/works approved in APOs but not implemented in NP and WLSs

(₹ in crore)

Year	Activity type	Items of work	Target		Achievement	
			Physical	Financial	Physical	Financial
A. Jaldapara Wildlife Sanctuary						
2017-18	Non-recurring	Procurement of camera traps	25	0.05	0	0
	Non-recurring	Installation of solar power bank for 24-hour supply of solar power	4	0.05	0	0
2020-21	Non-recurring	Construction of culvert	1	0.025	0	0
	Non-recurring	Purchase of RT set and communication network	4	0.01	0	0
	Non-recurring	Installation of solar power bank for 24-hour supply of solar power	1	0.0175	0	0
	Non-recurring	Construction of staff barracks	1	0.03	0	0
	Recurring	Weed eradication	20 ha	0.03	0	0
	Recurring	Improvement of forest road	15 km	0.075	0	0
2021-22	Non-recurring	Construction of bridge	1	0.08	0	0
	Non-recurring	Construction of check-dam	1	0.05	0	0
B. Gorumara National Park						
2019-20	Non-recurring	Installation of power fencing	Lump sum	0.05	0	0
	Recurring	Over wood removal in grass land	Lump sum	0.084	0	0
	Recurring	Improvement of observation line	Lump sum	0.05	0	0
C. Mahananda Wildlife Sanctuary						
2018-19	Non-recurring	Creation of grass land	10 ha	0.08	0	0
	Non-recurring	Electric power fencing to prevent elephant depredation into forest camps and villages at Sukna, South-North	20 km	0.18	0	0
2019-20	Non-recurring	Creation of grass land	10 ha	0.08	0	0
	Recurring	Repairing of wooden bridge	1	0.08	0	0

(Source: Departmental Records)

Appendix- 3

(Refer Paragraph 1.7.7.1)

Activities/works approved in APOs but not implemented in elephant reserves

(₹ in crore)

Year	Activity type	Items of work	Target		Achievement	
			Physical	Financial	Physical	Financial
2017-18	Protection of elephant	Purchase of medicine and drugs	Lump sum	0.02	0	0
2018-19	Protection of elephant	Purchase of medicine and drugs	Lump sum	0.02	0	0
2019-20	Protection of elephant habitats and corridors	Creation of water bodies	14 nos.	0.21	11	0.09
	Eliciting public co-operation (including mitigation of human-elephant conflict)	Creation of elephant-proof trenches, barriers, energised fencing, *etc.*	13 km	0.52	6.5 km	0.19
2020-21	Eliciting public co-operation (including mitigation of human-elephant conflict)	Creation of elephant-proof trenches, barriers, energised fencing, *etc.*	Lump sum	0.10	L.S.	0.04
2021-22	Protection of elephant	Procurement of vehicle for patrolling by wildlife squad	2 nos.	0.16	0	0
	Protection of elephant habitats and corridors	Construction of watch tower at MER	5 nos.	0.15	1	0.02
	Eliciting public co-operation (including mitigation of human-elephant conflict)	Creation of energised fencing	13 km	0.50	1 km	0.16

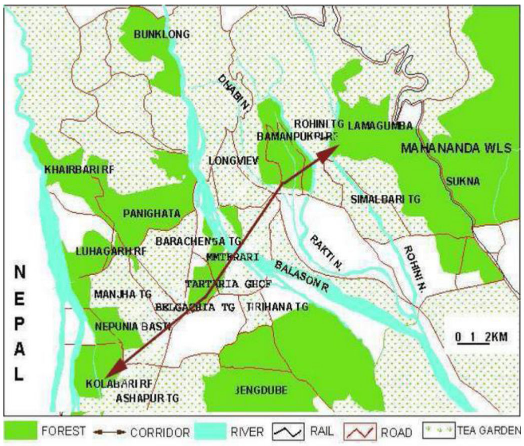
(Source: Departmental Records)

Appendix- 4

(Refer Paragraph 1.8.1.2)

Status and ecological priority of Corridors

1. Mahananda-Kolbari

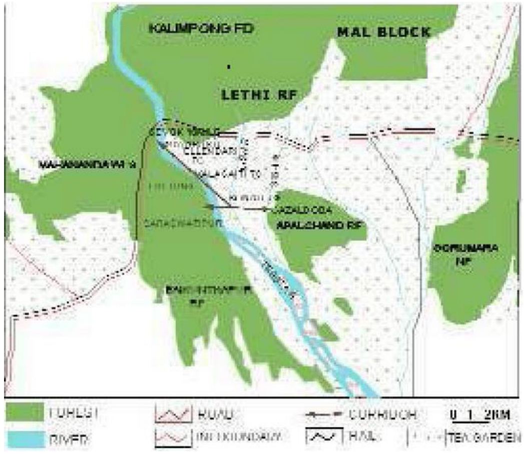


Status: This 12-13 km corridor, comprising of patchy forests and tea gardens, connects the Mahananda Wildlife Sanctuary with the Kolbari and Nipania Reserve Forest of Panighata Range on the border of Nepal.

Ecological Priority- Medium

Conservation Feasibility– Low

2. Apalchand-Mahananda

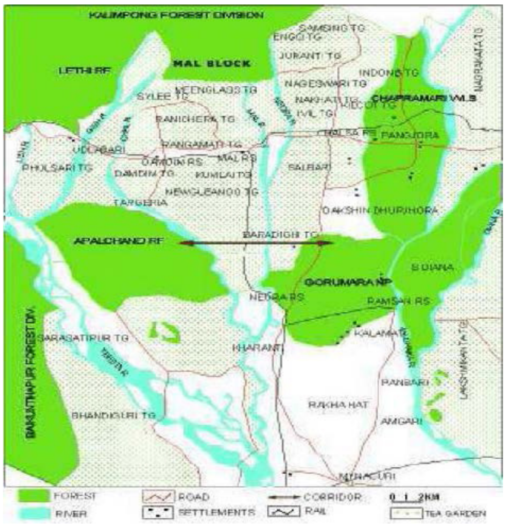


Status: This 10-11 km long corridor facilitates elephant movement from the Apalchand Reserve Forest of Baikanthapur Forest Division and to the Laltong range of Mahananda Wildlife Sacntuary.

Ecological Priority- Medium

Conservation Feasibility– Medium

3. Apalchand-Gorumara

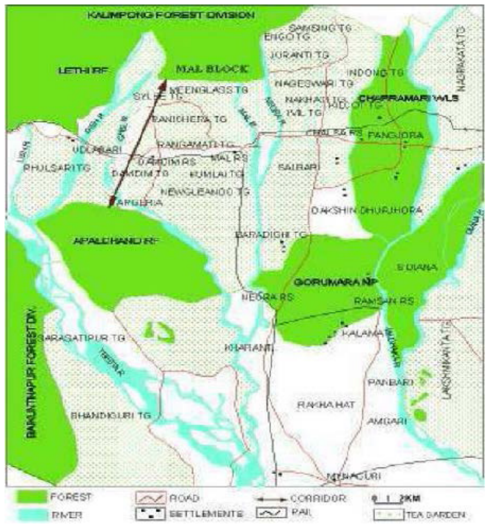


Status: This 12-13 km long corridor passes through the Baradighi tea estate and crosses Neora, Kumlai and the Chel River to connect the habitats of Gorumara National Park and Apalchand Reserve Forest.

Ecological Priority- Medium

Conservation Feasibility– Low

4. Apalchand - Kalimpong at Mal Block (via Sylee)

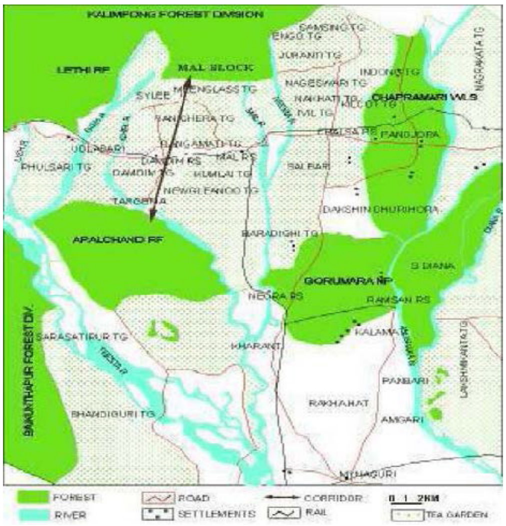


Status: This 20 km long corridor connects the Apalchand Reserve Forest of Baikanthapur Forest Division and Mal block of Kalimpong Forest Division.

Ecological Priority- Medium

Conservation Feasibility– Low

5. Apalchand-Kalimpong at Mal Block (via Meenglass)

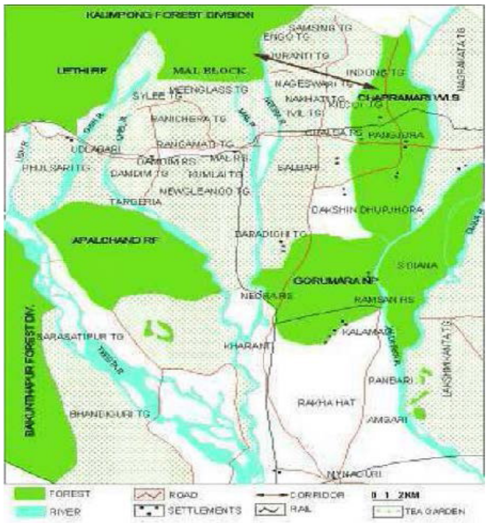


Status: This 20 km long corridor connects the Apalchand Reserve Forest of Baikanthapur Forest Division with Mal block of Kalimpong Forest Division.

Ecological Priority- Medium

Conservation Feasibility– Medium

6. Chapramari-Kalimpong (Mal Block)

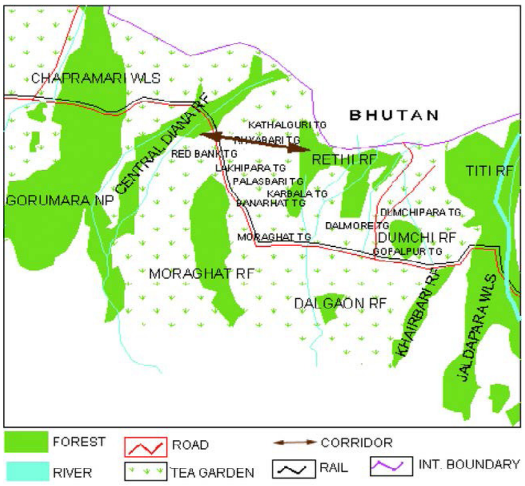


Status: This 7.5 km corridor facilitates elephant movement between Mal block of Kalimpong Forest Division and Chapramari Wildlife Sanctuary of Gorumara Wildlife Division (Wildlife Division-II).

Ecological Priority- Medium

Conservation Feasibility– Medium

7. Rethi - Central Diana

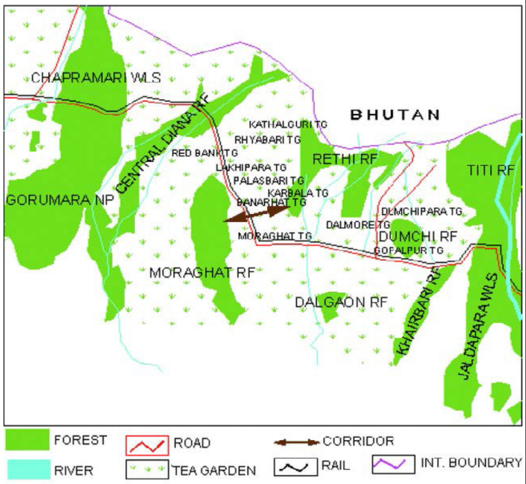


Status: In this 14-15 km long corridor, elephants move between Central Diana Reserve Forest and Rethi Reserve Forest passing through tea gardens and a few settlements.

Ecological Priority- Medium

Conservation Feasibility– Low

8. Rethi – Moraghat

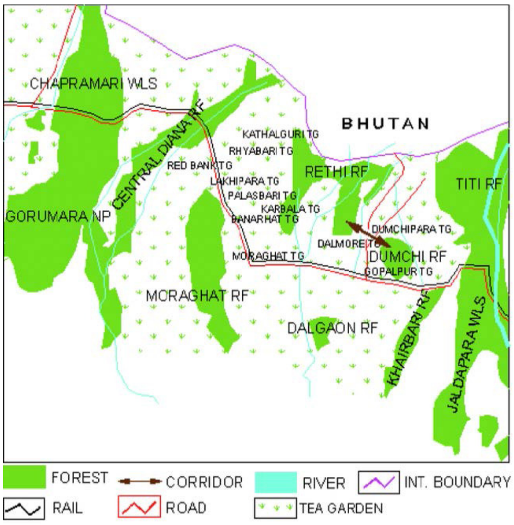


Status: This 9 km long corridor in Jalpaiguri Forest Division connects Rethi Reserve Forest with Moraghat Reserve Forest and passes mainly through tea gardens (Karbala, Banarhat, Gandrapara and Moraghat).

Ecological Priority- Medium

Conservation Feasibility– Low

9. Dumchi – Rethi

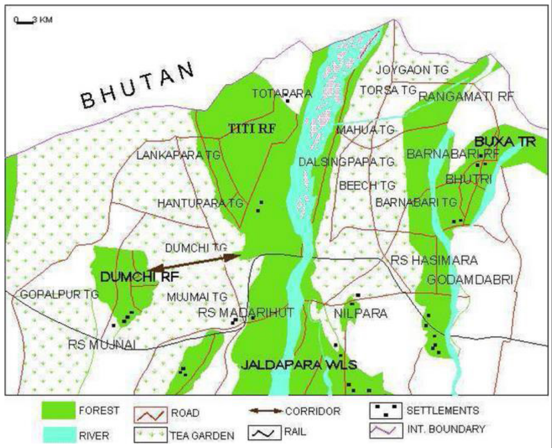


Status: This 9-10 km long corridor in Cooch Behar and Jalpaiguri forest division passes mainly through tea gardens and elephant movement occurs generally at night.

Ecological Priority- Medium

Conservation Feasibility– Medium

10. Titi – Dumchi

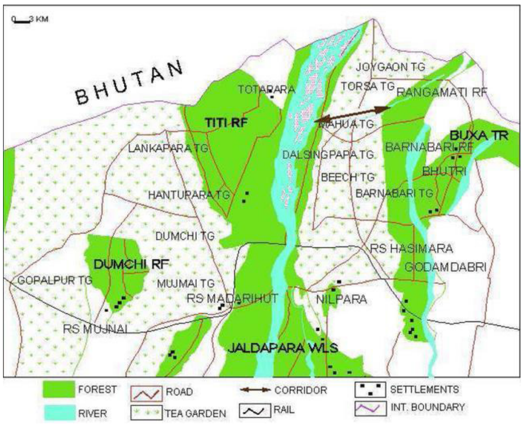


Status: This 9 km long corridor passes mainly through tea gardens (Hantapara, Mujnai and Dhumchi) and the Shalbani forest to connect Titi Reserve Forest and Dhumchi Reserve Forest.

Ecological Priority- Medium

Conservation Feasibility– Medium

11. Buxa - Titi (via Torsa)

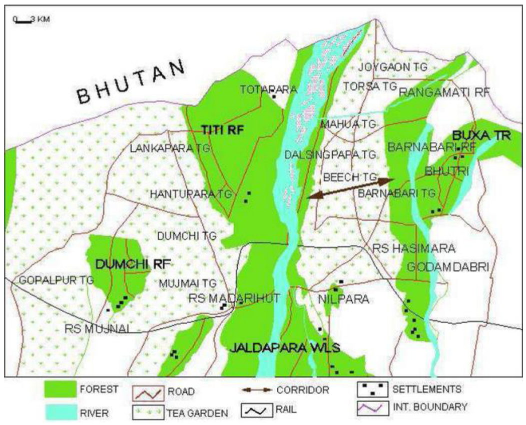


Status: This 6 km long corridor connects Rangamati Reserve Forest area of Buxa Tiger Reserve with Titi Reserve Forest.

Ecological Priority- Medium

Conservation Feasibility– Medium

12. Buxa – Titi (Via Beech And Barnbari TE)

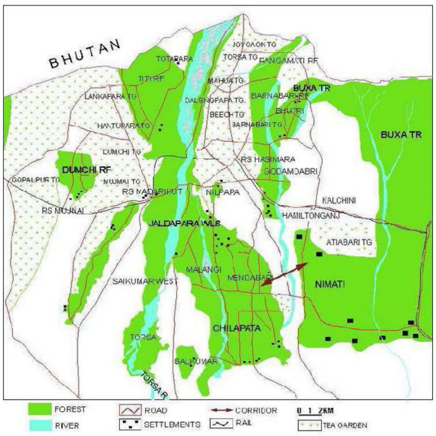


Status: This 6 km long corridor connects Barnbari Reserve Forest of Buxa Tiger Reserve and Titi Reserve Forest situated south of Dalsingpara tea estate by passing through Barnabari tea estate and Beech tea estate.

Ecological Priority- Medium

Conservation Feasibility– Medium

<table>
<tr><td>13. Nimati – Chilapata</td><td>14. Buxa - Ripu at Sankosh</td></tr>
<tr><td>



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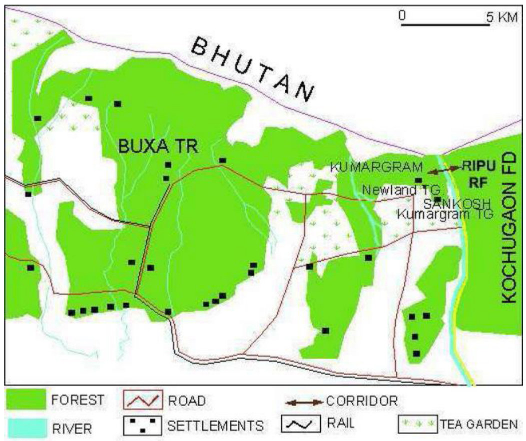

</td></tr>
<tr><td>

Status: This 6 km long corridor facilitates elephant movement between Nimati Range of Buxa Tiger Reserve and Chilapata Reserve Forest of Cooch Behar Forest Division.

Ecological Priority- Medium

Conservation Feasibility– Medium

</td><td>

Status: This 2.5 km long corridor is a contiguous forest that connects Buxa Tiger Reserve with the Ripu Reserve Forest of Kochugaon Forest Division, Assam.

Ecological Priority- High

Conservation Feasibility– Medium

</td></tr>
</table>

(Source: Departmental Records)

Appendix-5

(Refer Paragraph 1.8.5.1)

Resorts/homestays in operation under the Buxa Tiger Reserve

Sl No.	Name of the hotels	Location	In operation
1	Dukpa Hut	Lepchakhawa Forest Village	
2	Pansa Hut	Lepchakhawa Forest Village	
3	Haven of Duars	Lepchakhawa Forest Village	Yes
4	Baby Lodge	Lepchakhawa Forest Village	
5	Losowr Tanging	Lepchakhawa Forest Village	
6	Robbert Inn	Buxa Duars FD Holding	
7	Dabana Inn	Buxa Duars FD Holding	
8	Robbas Inn	Santalbari Forest Village	
9	Holiday Inn	Santalbari Forest Village	
10	Buxa Valley	Santalbari Forest Village	Yes
11	Dooars Mountain	Santalbari Forest Village	
12	Smpalko	Santalbari Forest Village	
13	Sprinhdale	Santalbari Forest Village	
14	Saseccen	Santalbari Forest Village	
15	Jungle Inn	28 Mile Forest Village	
16	Evergreen	28 Mile Forest Village	
17	Sankuchil	28 Mile Forest Village	Yes
18	Leo Home	28 Mile Forest Village	
19	Wild Home	28 Mile Forest Village	
20	Phar Ki Rani	28 Mile Forest Village	
21	Rovers Inn	Jainti FD Holding	Yes
22	Bananta	Jainti FD Holding	Yes
23	Mohon Chura	Jainti FD Holding	
24	Prokiti	Jainti FD Holding	
25	Green View	Jainti FD Holding	
26	Sakuntola	Jainti FD Holding	
27	J.S.G.S.	Jainti FD Holding	Yes
28	Projapoti	Jainti FD Holding	
29	Jainti View	Jainti FD Holding	
30	Bonolota	Jainti FD Holding	
31	Nature Hut	Jainti FD Holding	
32	Sabjar Dhokh	Jainti FD Holding	
33	Jungle Coridor	Jainti FD Holding	
34	Horn Bill	Jainti FD Holding	

Sl No.	Name of the hotels	Location	In operation
35	Jainti Green	Jainti FD Holding	
36	Green Dooars	Jainti FD Holding	
37	Abokash	Jainti FD Holding	Yes
38	Karan House	Jainti FD Holding	
39	Jainti River View	Jainti FD Holding	Yes
40	Binde Home	Jainti FD Holding	
41	Jainti Residence	Jainti FD Holding	
42	Big Boss	Jainti FD Holding	
43	Grass Lean	Jainti FD Holding	
44	Green Dooars	Jainti FD Holding	
45	Pahari Conna	Jainti FD Holding	
46	River View	Jainti FD Holding	
47	Hotel Prafulla	Jainti FD Holding	
48	Hotel Ganesh	Jainti FD Holding	
49	Hotel Aranya	Jainti FD Holding	
50	Krishna Lodge	Jainti FD Holding	
51	Macro Lodge	Jainti FD Holding	
52	Altapuri	Jainti FD Holding	Yes

N.B. *68 Resort/Homestays had been identified by the Division. Only 52 names were, however, provided to Audit, by the Division.*
(Source: Records of BTR)

Appendix-6

(Refer Paragraph 1.8.5.2 (i))

Carrying Capacity of Tourists in the Sundarban Tiger Reserve

As calculated in TCP 2016-17 to 2026-27	As calculated by Audit	Carrying Capacity of Kanha TR as given in the NGT guidelines, as reference.
Carrying Capacity Computation **Physical Carrying Capacity (PCC)** PCC = A x v/a x Rf Total length was calculated to be 370 km. The minimum distance to be maintained between 2 boats is 200 m. At least four hours is required for one single visit and the Tiger Reserve is open for 10 hours daily. Thus the rotation factor (Rf) is calculated to be: Rotation Factor (Rf) =10/4=2.50 Physical Carrying Capacity (PCC) = 370 km. x 5 vehicles / km. x 2.50 = 4,625 visits/day **Real Carrying Capacity (RCC)** RCC = 4,625 x (100-70)/100 x (100-42)/ 100 x (100-34)/ 100 = 531.13 or 531 boat units (two cylinder boats)/day **Effective Permissible Carrying Capacity** EPCC = RCC x MC (MC-Management Capacity) EPCC = 531 x 0.40 = 212.40 or 212 two cylinder boats.	**Carrying Capacity Computation** **Physical Carrying Capacity (PCC)** PCC = A x v/a x Rf Total length was calculated to be 370 km. The minimum distance to be maintained between 2 boats is 500 m. (as per NTCA minimum distance between two vehicles should be 500 m) At least four hours is required for one single visit and the Tiger Reserve is open for 10 hours daily. Thus the rotation factor (Rf) is calculated to be: Rotation Factor (Rf) =10/4=2.50 Physical Carrying Capacity (PCC) = 370 km. x 2 vehicles / km. x 2.50 = 1,850 visits/day **Real Carrying Capacity (RCC)** RCC = 1,850 x (100-70)/ 100 x (100-42)/ 100 x (100-34)/ 100 = 212.45 or 212 boat units (two cylinder boats)/day **Effective Permissible Carrying Capacity** EPCC = RCC x MC (MC-Management Capacity) EPCC = 212 x0.40 = 84.80 or 85 two cylinder boats.	**Carrying Capacity Computation** **Physical Carrying Capacity (PCC)** PCC = A x v/a x Rf There is a required distance of at least 500 m. (½ km.) between 2 vehicles to avoid dust (2 Vehicles / km.) At least 3½ km. hours are needed for a single visit The PA is open to tourists for 9 months in a year and 9 hours per day Linear road length (for tourists) = 283 km. Rotation Factor (Rf) = 9 hours / 3.5 hours = 2.6 PCC = 283 km. x 2 vehicles / km. x 2.6 = 1471.6 or 1,472 visits / day **Real Carrying Capacity (RCC)** 1,472 (0.22 x 0.45 x 0.95) 138.4 or 138 visits / day **Effective Permissible Carrying Capacity** EPCC = RCC x MC 138 x 0.40 = 55.20 or 55 vehicles / day
Tourist allowed per day- Not calculated in TCP	**Tourist allowed per day = 85x6=510**	

N.B. *As per NTCA guidelines, Tourists per vehicle should be considered as six, for calculating the carrying capacity.*
(Source:Records of STR)

Appendix -7

(Refer Paragraph 2.8.1)

Non-Execution of Lease Deeds as on 31.03.2022

Sl. No.	Auction ID	Sand Block Name	LOI issued vide Memo No- & Date	Due date of execution of lease deed	Delay in execution of lease deed as on 31.03.2022 (in days)	Mineable Reserve of Sand - Annual raising target (in cum)	Mineable Reserve of Sand - Annual raising target (in cft)	Money Value (Royalty+Cess) (in ₹)
Birbhum District								
1	2016_DMB_60	Bir-Md-Bazar- 007-2016	468, dated.30.01.17	29.07.2017	1,706	14,152	4,99,774	8,29,625
2	2016_DMB_63	Bir-Md-Bazar- 029-2016	4988, dated.09.12.16	08.06.2017	1,757	12,235	4,32,075	7,17,245
3	2016_DMB_63	Bir-Md-Bazar- 030-2016	4989, dated.09.12.16	08.06.2017	1,757	27,868	9,84,150	16,33,689
4	2016_DMB_63	Bir-Sainthia- 042-2016	5291, dated.23.12.16	22.06.2017	1,743	27,843	9,83,267	16,32,223
5	2016_DMB_63	Bir-Sainthia- 050-2016	1880, dated.06.04.17	05.10.2017	1,638	20,828	7,35,535	12,20,988
6	2018_WB_869	Bir-Illambazar- 067-2016	2104, dated.17.04.18	16.10.2018	1,262	15,269	5,39,220	8,95,105
7	2018_WB_869	Bir-Illambazar- 069-2016	2105, dated. 17.04.18	16.10.2018	1,262	13,303	4,69,791	7,79,853
8	2016_DMB_64	Bir-Illambazar- 075-2016	474, dated.30.01.17	29.07.2017	1,706	13,280	4,68,979	7,78,505
9	2017_WB_527	Bir-Illambazar- 081-16	1347, dated.13.03.18	12.09.2018	1,296	19,978	7,05,517	11,71,158
10	2018_WB_869	Bir-Mayureswar-II- 088-2016	2106, dated.17.04.18	16.10.2018	1,262	42,840	15,12,882	25,11,384
11	2016_DMB_65	Bir-Mayureswar-II- 109-2016	496, dated.30.01.17	29.07.2017	1,706	9,597	3,38,915	5,62,599
12	2016_DMB_65	Bir-Mayureswar-II- 116-2016	503, dated.30.01.17	29.07.2017	1,706	12,596	4,44,824	7,38,408
13	2016_DMB_65	Bir-Mayureswar-II- 121-2016	506, dated.30.01.17	29.07.2017	1,706	6,093	2,15,172	3,57,186
14	2017_WB_567	Bir-Dubrajpur- 140-2016	573, dated.05.02.18	04.08.2018	1,335	16,740	5,91,168	9,81,339
15	2018_WB_869	Bir-Dubrajpur- 141-2016	3266, dated.11.05.18	10.11.2018	1,237	17,114	6,04,376	10,03,264
16	2017_WB_576	Bir-Dubrajpur- 145-2016	2109, dated.17.04.18	16.10.2018	1,262	19,978	7,05,517	11,71,158
17	2018_WB_869	Bir-Khairasole- 150-2016	2189, dated.20.04.18	19.10.2018	1,259	58,680	20,72,267	34,39,963
18	2018_WB_872	Bir-Khairasole- 157-2016	3267, dated.11.05.18	10.11.2018	1,237	11,919	4,20,916	6,98,721
19	2018_WB_883	Bir-Bolpur -169-2016	3265, dated.11.05.18	10.11.2018	1,237	41,000	14,47,903	24,03,519
20	2018_WB_884	Bir-Bolpur- 170- 2016	3268, dated.11.05.18	10.11.2018	1,237	38,400	13,56,084	22,51,099
21	2017_DMB_68	Bir-Rampurhat-I- 190-2016	1882, dated.06.04.17	05.10.2017	1,638	2,525	89,170	1,48,022
22	2017_DMB_68	Bir-Nanoor- 192-2016	1735, dated.30.03.17	29.09.2017	1,644	13,181	4,65,483	7,72,702

Sl. No.	Auction ID	Sand Block Name	LOI issued vide Memo No- & Date	Due date of execution of lease deed	Delay in execution of lease deed as on 31.03.2022 (in days)	Mineable Reserve of Sand - Annual raising target (in cum)	Mineable Reserve of Sand - Annual raising target (in cft)	Money Value (Royalty+Cess) (in ₹)
23	2017_DMB_72	Bir-Nanoor- 202-2016	5856, dated.10.11.17	09.05.2018	1,422	10,972	3,87,473	6,43,205
24	2017_DMB_72	Bir-Nanoor- 204-2016	5596, dated.26.10.17	25.04.2018	1,436	15,487	5,46,919	9,07,886
25	2018_WB_869	Bir-Nanoor- 208-2016	3617, dated.28.05.18	27.11.2018	1,220	6,311	2,22,871	3,69,966
26	2017_DMB_68	Bir-Nanoor- 211-2016	3740, dated.22.06.17	21.12.2017	1,561	23,959	8,46,105	14,04,534
27	2017_DMB_68	Bir-Mayureswar-I- 216-2016	1881, dated.06.04.17	05.10.2017	1,638	7,525	2,65,743	4,41,133
28	2017_DMB_68	Bir-Mayureswar-I- 218-2016	1288, dated.08.03.17	07.09.2017	1,666	9,710	3,42,906	5,69,224
29	2017_DMB_68	Bir-Mayureswar-I - 221-2016	1291, dated.08.03.17	07.09.2017	1,666	10,195	3,60,033	5,97,655
30	2018_WB_869	Bir-Nalhati-I- 234-2016	3010, dated.23.04.18	22.10.2018	1,256	15,827	5,58,926	9,27,817
31	2017_DMB_70	Bir-Murarai-II- 235-2016	1640, dated.27.03.17	26.09.2017	1,647	21,94,588	7,75,01,217	12,86,52,020
32	2017_WB_139	Bir-Murarai-I- 239-2016	7149, dated.06.12.17	05.06.2018	1,395	4,612	1,62,871	2,70,366
33	2018_WB_617	Bir-Md-Bazar- 241-2016	1046, dated.22.02.18	21.08.2018	1,318	6,142	2,16,903	3,60,059
34	2018_WB_618	Bir-Illambazar- 242-2016	1346, dated.13.03.18	12.09.2018	1,296	10,244	3,61,764	6,00,528
35	2018_WB_619	Bir-Illambazar- 243-2016	1045, dated.22.02.18	21.08.2018	1,318	12,283	4,33,770	7,20,058
36	2017_DMB_71	Bir-Suri-I- 252-2016	7230, dated.08.12.17	07.06.2018	1,393	38,160	13,47,609	22,37,031
37	2017_WB_529	Bir-Suri-I- 253-2016	576, dated.05.02.18	04.08.2018	1,335	16,191	5,71,780	9,49,155
38	2018_WB_869	Bir-Mayureswar-I- 263-2016	3329, dated.16.05.18	15.11.2018	1,232	12,040	4,25,189	7,05,814
39	2018_WB_804	Bir-Rajnagar- 270-2018	1134, dated.27.02.18	26.08.2018	1,313	25,934	9,15,851	15,20,313
40	2018_WB_946	Bir-Illambazar- 276-2018	5984, dated.30.08.18	27.02.2019	1,128	23,911	8,44,410	14,01,721
41	2018_WB_946	Bir-Illambazar- 277-2018	5989, dated.30.08.18	27.02.2019	1,128	39,09,109	13,80,49,012	22,91,61,360
42	2018_WB_1266	Bir-Illambazar- 282-2018	700, dated.12.02.19	11.08.2019	963	13,934	4,92,075	8,16,845
43	2018_WB_946	Bir-Rajnagar- 284-2018	5987, dated.30.08.18	27.02.2019	1,128	11,288	3,98,632	6,61,729
44	2018_WB_1266	Bir-Suri-I- 286-2018	699, dated.12.02.19	11.08.2019	963	27,795	9,81,572	16,29,410
Total (Birbhum district)						**68,61,636**	**24,23,16,616**	**40,22,45,583**
Bankura District								
45	2016_DMBWB_46	0120DM017	1027, dated. 06.06.17	05.12.2017	1,577	38,850	13,71,996	22,77,514
46	2016_DMBWB_47	0120DM018	1028, dated. 06.06.17	05.12.2017	1,577	38,526	13,60,563	22,58,535
47	2016_DMBWB_58	0122DM006	5528 dated. 26.10.16	25.04.2017	1,801	27,519	9,71,831	16,13,239
48	2016_DMBWB_93	0115KB001	797, dated. 10.02.17	09.08.2017	1,695	72,472	25,59,334	42,48,495

Sl. No.	Auction ID	Sand Block Name	LOI issued vide Memo No- & Date	Due date of execution of lease deed	Delay in execution of lease deed as on 31.03.2022 (in days)	Mineable Reserve of Sand - Annual raising target (in cum)	Mineable Reserve of Sand - Annual raising target (in cft)	Money Value (Royalty+Cess) (in ₹)
49	2016_DMBWB_96	0115KB004	800, dated. 10.02.17	09.08.2017	1,695	72,941	25,75,894	42,75,984
50	2016_DMBWB_147	0115KB008	638, dated. 31.01.17	30.07.2017	1,705	72,083	25,45,628	42,25,743
51	2016_DMBWB_148	0115KB009	636, dated. 31.01.17	30.07.2017	1,705	71,598	25,28,476	41,97,270
52	2016_DMBWB_206	0107DM010	542, dated. 03.04.17	02.10.2017	1,641	47,204	16,66,994	27,67,210
53	2016_DMBWB_207	0107DM011	541, dated. 03.04.17	02.10.2017	1,641	90,813	32,07,076	53,23,747
54	2016_DMBWB_209	0107DM013	921, dated. 15.02.17	14.08.2017	1,690	84,792	29,94,415	49,70,728
55	2017_DMBWB_225	0104DM002	362, dated. 02.03.17	01.09.2017	1,672	1,17,012	41,32,279	68,59,583
56	2017_WB_167	0107DM008	6018, dated. 22.06.18	21.12.2018	1,196	1,14,027	40,26,864	66,84,593
57	2017_WB_345	0121DM023	921, dated. 15.02.17	28.07.2018	1,342	1,14,000	40,25,910	66,83,011
58	2017_WB_347	0121DM025	362, dated. 02.03.17	08.07.2018	1,362	1,14,000	40,25,910	66,83,011
59	2017_WB_443	0103DR008	6018, dated. 22.06.18	15.07.2018	1,355	28,800	10,17,072	16,88,340
60	2017_WB_445	0103DR010	3036, dated. 08.03.18	07.09.2018	1,301	21,840	7,71,280	12,80,324
61	2017_WB_431	0104DM006	2977, dated. 27.12.18	26.06.2019	1,009	1,09,536	38,68,264	64,21,318
62	2018_WB_1193	0117DR001	684, dated. 08.03.19	07.09.2019	936	95,626	33,77,018	56,05,850
63	2018_WB_1194	0117DR002	685, dated. 08.03.19	07.09.2019	936	53,263	18,80,990	31,22,443
64	2018_WB_1196	0117DR007	692, dated. 08.03.19	07.09.2019	936	48,103	16,98,765	28,19,949
65	2018_WB_1197	0117DR008	664, dated. 07.03.19	06.09.2019	937	49,073	17,33,006	28,76,790
66	2018_WB_1198	0117DR009	686, dated. 08.03.19	07.09.2019	936	59,674	21,07,373	34,98,239
67	2018_WB_1199	0117DR010	691, dated. 08.03.19	07.09.2019	936	58,267	20,57,706	34,15,792
68	2018_WB_1204	0117DR022	687, dated. 08.03.19	07.09.2019	936	93,456	33,00,399	54,78,662
69	2018_WB_1215	0105DM018	688, dated. 08.03.19	07.09.2019	936	1,08,996	38,49,194	63,89,662
70	2019_WB_1332	0117DR018	690, dated. 08.03.19	07.09.2019	936	49,738	17,56,483	29,15,762
71	2019_WB_1336	0105DM004	689, dated. 08.03.19	07.09.2019	936	1,18,728	41,92,879	69,60,180
72	2019_WB_1372	0105DM005	1593, dated. 12.06.19	11.12.2019	841	1,19,677	42,26,400	70,15,825
73	2019_WB_1379	0105DM038	1594, dated- 12.06.19	11.12.2019	841	96,000	33,90,240	56,27,798
Total (Bankura district)						**21,86,613**	**7,72,20,238**	**12,81,85,595**
Total in the two districts (Birbhum & Bankura)						**90,48,249**	**31,95,36,854**	**53,04,31,177**

(Source: auctioned sand mining lease files)

Appendix -8

(Refer Paragraph 2.9.1)

Non-recovery of bid money

Sl. No.	Name of the Sand/ Quartz Block	Date of 1/3rd of total bid amount paid	Date of 1st instalment of balance 2/3rd bid amount	Delay payment of Bid amount (in days)	Date of execution of lease deed	Date of expiry of leases upto 31.03.2023	Due amount (in ₹)
ADM and DL&LRO, Birbhum							
1	Bir/ Sainthia/ 046 /2016	10.02.2017	04.05.2017	83	26.02.2018	25.02.2023	26,30,100
2	Bir/Sainthia/ 049/ 2016	27.01.2017	19.02.2018	388	21.08.2017	20.08.2022	43,70,500
3	Bir/ Illambazar/ 071//2016	01.11.2017	14.09.2020	1,048	15.01.2018	14.01.2023	1,84,91,640
4	Bir/ Mayureswar-II/092/2016	20.01.2017	15.02.2017	26	06.07.2017	05.07.2022	35,58,933
5	Bir/Bolpur/179/2016	16.02.2017	16.12.2017	303	11.10.2017	10.10.2022	24,98,300
6	Bir/ Nanoor/ 207/2016	28.06.2017	15.05.2018	321	02.01.2018	01.01.2023	56,10,724
ADM and DL&LRO, Purulia							
7	2017_DMPWB-78	12.06.2017	05.09.2017	85	15.09.2017	14.09.2022	2,54,400
8	2017_DMPWB-73	20.08.2017	31.03.2022	1,684	15.09.2017	14.09.2022	18,34,000
9	2017_DMPWB-79	18.08.2017	31.03.2022	1,686	20.09.2017	19.09.2022	1,29,33,333
10	2017_DMPWB-43	04.12.2017	28.06.2021	1,302	15.02.2018	14.02.2023	38,70,000
11	2017_DMPWB-74	15.06.2017	05.09.2017	82	01.09.2017	31.08.2022	6,67,000
ADM and DL&LRO, Purba Bardhaman							
12	2016_DMBUW_145	16.01.2017	14.03.2017	57	28.02.2018	27.02.2023	44,79,044
13	2016_DMBUW_148	16.01.2017	05.05.2018	474	10.01.2018	09.01.2023	44,65,807
14	2017_DMBUW_649	16.08.2017	17.05.2018	274	02.02.2018	01.02.2023	2,76,800
15	2017_DMBUW_411	16.06.2017	08.11.2021	1,606	12.12.2017	11.12.2022	22,37,600
16	2017_DMBUW_669	20.09.2017	21.05.2018	243	28.12.2017	27.12.2022	1,03,40,800
17	2016_DMBUW_166	09.02.2017	08.02.2018	364	27.12.2017	26.12.2022	26,60,364
18	2017_DMBUW_179	27.02.2017	27.10.2017	242	08.12.2017	07.12.2022	74,47,153
19	2017_DMBUW_700	21.11.2017	21.03.2018	120	29.03.2018	28.03.2023	2,00,000
20	2017_WB_98	08.11.2017	18.11.2021	1,471	09.03.2018	08.03.2023	6,58,000
21	2017_DMBUW_609	09.08.2017	05.05.2018	269	02.02.2018	01.02.2023	24,52,533
22	2017_DMBUW_661	14.09.2017	23.11.2021	1,531	22.12.2017	21.12.2022	53,42,800
23	2017_DMBUW_705	31.08.2017	14.05.2018	256	02.02.2018	01.02.2023	10,26,400
24	2017_DMBUW_706	25.08.2017	05.05.2018	253	08.11.2017	07.11.2022	21,92,000
	Total						**10,04,98,231**

(Source: Auctioned sand mining lease files)

Appendix -9

(Refer Paragraph 2.9.2)

Short realisation of bid money

Sl. No.	Name of Sand/ Quartz Block	Date of payment of 1/3rd of the total bid amount	Date of payment of 1st instalment of the balance 2/3rd bid amount	Final Bid payment due date (90 days after payment of the 1st instalment of the balance 2/3rd)	Interest calculated, as on 31.03.2023	Delay of payment of bid amount (in days)	Amount due (in ₹)	Interest accumulated, as on 31.03.2023 (in ₹)
ADM and DL&LRO, Birbhum								
1	Bir/Md. Bazar/ 008 /2016	30.01.2018	30.05.2019	29.08.2019	31.03.2023	1,310	1,14,38,000	25,65,716
2	Bir/ Illambazar/0069/2016	12.04.2018	06.02.2020	07.05.2020	31.03.2023	1,058	6,22,100	1,12,702
3	Bir/ Illambazar/ 075/2016	10.01.2017	03.04.2017	03.07.2017	31.03.2023	2,097	92,49,266	33,21,183
4	Bir/ Khairasole /150/2016	20.04.2018	17.07.2019	16.10.2019	31.03.2023	1,262	14,57,467	3,14,953
5	Bir/Nanoor/192/2016	17.03.2017	06.04.2017	06.07.2017	31.03.2023	2,094	24,82,800	8,90,237
6	Bir/ Murarai-II/ 235/2016	21.03.2017	01.06.2017	31.08.2017	31.03.2023	2,038	23,85,466	8,32,462
7	Bir/Md. Bazar/ 267/ 2018	05.03.2018	11.02.2019	13.05.2019	31.03.2023	1,418	1,35,18,400	32,82,379
8	Bir/Illambazar/ 276/ 2018	07.08.2018	20.02.2019	22.05.2019	31.03.2023	1,409	15,03,060	3,62,639
9	Bir/ Illambazar/277/ 2018	07.08.2018	20.02.2019	22.05.2019	31.03.2023	1,409	11,79,240	2,84,512
ADM and DL&LRO, Bankura								
10	2017_WB_337	19.01.2018	24.04.2018	24.07.2018	31.03.2023	1,711	2,47,69,421	72,56,931
11	2018_WB_630	23.02.2018	29.03.2019	28.06.2019	31.03.2023	1,372	3,57,51,644	83,99,188
ADM and DL&LRO, Purulia								
12	2017_WB-546, Quartz block	02.07.2018	13.05.2021	12.08.2021	31.03.2023	596	15,62,333	1,59,444
13	2017_WB-543, Quartz Block	09.07.2018	20.12.2021	21.03.2022	31.03.2023	375	69,61,533	4,47,016
14	2017_WB-536, Quartz Block	25.06.2018	08.06.2022	07.09.2022	31.03.2023	205	21,12,900	74,169
15	2017_DMPWB-76	20.06.2017	05.09.2017	05.12.2017	31.03.2023	1,942	1,86,332	61,962
ADM and DL&LRO, Purba Bardhaman								
16	2017_WB_302	16.12.2017	02.04.2019	02.07.2019	31.03.2023	1,368	45,31,200	10,61,418
17	2017_DMBUW_603	13.10.2017	16.11.2021	15.02.2022	31.03.2023	409	90,00,000	6,30,308
18	2017_DMBUW_679	24.01.2018	18.04.2018	18.07.2018	31.03.2023	1,717	22,03,000	6,47,697
	Total						**13,09,14,162**	**3,07,04,915**

(Source: Auctioned sand and in situ mining lease files)

Appendix -10

(Refer Paragraph 2.10.2)

Short realisation of royalty and cess on minor minerals (Sand)

Sl. No.	Name of the Office/ Period of Audit	No. of cases	Year of extraction	Quantity extracted (in cft.)	Rate applicable (@₹ 302 Per 100 cft.)	Amount realisable (in ₹)	Amount realised (in ₹)	Short realisation (in ₹)	DL&LRO's reply & date
1	**DL&LRO, Bankura, 01.04.17 to 31.03.22**	13	2021-22	16,00,000	302	48,32,000	24,16,000	24,16,000	The aforesaid lessees had deposited the amount on previously approved requisitions for excavation permits, and once a permit is approved in the portal, there is no option to revise its rate. Further, the rates are system incorporated and the approving authority cannot edit the same, except for one column /27.07.2022
2	**DL&LRO, Paschim Bardhaman, 01.04.17 to 31.03.22**	11	2021-22	13,10,000	302	39,56,200	19,78,100	19,78,100	The online e-supply chain system was introduced by the WBMDTCL and has been functional in the district since November, 2021. In the said portal, generation of demand, against the requisition for excavation permit, is system devised. Though the revised rate of royalty had been notified on 13.01.22, it was incorporated in the portal w.e.f. 27.01 2022 /02.09.2022
3	**DL&LRO, Purulia, 01.04.17 to 31.03.22**	19	2021-22	13,95,000	302	42,12,900	21,06,450	21,06,450	The matter has been communicated to the WBMDTCL and necessary action would be taken after getting instructions from higher authorities /29.11.2022
4	**DL&LRO, Purba Bardhaman, 01.04.17 to 31.03.22**	98	2021-22	94,70,000	302	2,85,99,400	1,42,99,700	1,42,99,700	The matter has been communicated to the WBMDTCL and necessary action would be taken after getting instructions from higher authorities /20.09.2022
5	**DL&LRO, Purba Medinipur, 01.04.17 to 31.03.22**	8	2021-22	2,26,880	302	6,85,178	3,42,589	3,42,589	The matter has been communicated to the WBMDTCL and necessary action would be taken after getting instructions from higher authorities /29.09.2022
6	**DL&LRO, Kalimpong, 01.04.17 to 31.03.22**	4	2021-22	60,000	302	1,81,200	90,600	90,600	The matter has been communicated to the WBMDTCL and necessary action would be taken after getting instructions from higher authorities /21.10.2022
Total		**153**		**1,40,61,880**	**1,812**	**4,24,66,878**	**2,12,33,439**	**2,12,33,439**	

(Source: WBMDTCL Portal)

Appendix -11

(Refer Paragraph 2.10.3)

Short realisation of royalty and cess on minor minerals

Sl. No.	Name of the Office/ Period of Audit	No. of cases	Year of extraction	Quantity extracted (in cft)	Rate per cum (in ₹)	Amount realisable (in ₹)	Amount realised (in ₹)	Short realisation (in ₹)	DL&LRO's Reply & Date
1	DL&LRO, Birbhum, 01.04.17 to 31.03.22	2	2017-22	5,48,495	98	5,37,525	2,62,727	2,74,798	The matter would be communicated to the concerned authority and necessary action would be taken for realization of royalty and cess shortly, after verification of records /20.05.2022
		3		1,12,267	117	1,31,352	65,115	66,237	
		51		15,78,418	166	26,20,174	10,27,415	15,92,759	
2	DL&LRO, Bankura, 01.04.17 to 31.03.22	168	2017-22	2,77,05,951	98	2,71,51,832	1,82,79,904	88,71,928	Letter would be issued for realisation, to the concerned department /27.07.2022
3	DL&LRO, Purulia, 01.04.17 to 31.03.22	7	2017-22	55,76,254	98	54,64,729	29,05,395	25,59,334	The matter would be communicated to the concerned department and necessary action would be taken after getting the reply from the said department /29.11.2022
4	DL&LRO, Purba Bardhaman, 01.04.17 to 31.03.22	143	2017-22	2,46,23,708	98	2,41,31,234	1,54,47,227	86,84,007	The matter would be communicated to the concerned department and necessary action would be taken after getting the reply from the said department /20.09.2022
5	DL&LRO, Purba Medinipur, 01.04.17 to 31.03.22	518	2017-22	1,47,67,002	98	1,44,71,662	75,26,781	69,44,881	The matter would be communicated to the concerned department and necessary action would be taken after getting the reply from the said department /29.09.2022
		10	2017-22	1,64,74,302	98	1,61,44,816	89,72,677	71,72,139	
Total		**902**		**9,13,86,397**		**9,06,53,324**	**5,44,87,241**	**3,61,66,083**	

(Source: Records of WBSRDAs & ZPs of royalty deducted and deposited)

Appendix -12

(Refer Paragraph 2.10.4)

Short realisation of the price of minor mineral (Sand)

Sl. No.	Name of the Sand Lessee	Financial years of production	Production Target, as per the mining plan (in cft.)	Production Quantity (in cft)	Excess production (in cft)	Royalty & cess realised (@ 166 per 100 cft) (in ₹)	Price of sand realisable (@ 227 per 100 cft) (in ₹)	Short realisation of the price of sand (in ₹)	DL&LRO's Reply & Date
ADM and DL&LRO, Purulia									
1	Debasish Khan, Sadarpara, Purulia	2017-18	3,39,021	6,95,000	3,55,979	5,90,925	8,08,072	2,17,147	Demand notice would be issued, for realisation of the price of sand, for excess extraction of sand, from the sand lessee/ 24.11.2022
		2018-19	3,39,021	16,45,000	13,05,979	21,67,925	29,64,572	7,96,647	
		2019-20	3,39,021	18,40,000	15,00,979	24,91,625	34,07,222	9,15,597	
		2020-21	3,39,021	18,00,000	14,60,979	24,25,225	33,16,422	8,91,197	
		2021-22	3,39,021	3,50,000	10,979	18,225	24,922	6,697	
2	Debasish Ghosh, Ketika, Purulia Sadarpara, Purulia	2018-19	6,44,054	13,80,000	7,35,946	12,21,670	16,70,597	4,48,927	
		2019-20	6,44,054	7,70,000	1,25,946	2,09,070	2,85,897	76,827	
3	Azizun Ansari, Hizuli, Purulia	2017-18	1,57,004	14,50,000	12,92,996	21,46,373	29,35,101	7,88,727	
		2018-19	1,57,004	7,45,000	5,87,996	9,76,073	13,34,751	3,58,677	
		2019-20	1,57,004	8,40,000	6,82,996	11,33,773	15,50,401	4,16,627	
4	Gee Dee Mining Pvt. Ltd., Santosh Road, Kolkata	2017-18	5,93,208	6,26,800	33,592	55,763	76,254	20,491	
		2018-19	4,74,566	26,85,000	22,10,434	36,69,320	50,17,685	13,48,365	
		2019-20	4,74,566	44,35,000	39,60,434	65,74,320	89,90,185	24,15,865	
		2020-21	4,74,566	46,55,000	41,80,434	69,39,520	94,89,585	25,50,065	
		2021-22	4,74,566	17,00,000	12,25,434	20,34,220	27,81,735	7,47,515	
5	Tufan Chandra Ganguly, Paruldiha, Purulia	2017-18	6,77,952	11,00,000	4,22,048	7,00,600	9,58,049	2,57,449	
		2018-19	5,42,362	8,95,000	3,52,638	5,85,379	8,00,488	2,15,109	
6	Shyamsundar Garai, Lukuidin, Purulia	2017-18	6,38,207	17,50,000	11,11,793	18,45,576	25,23,770	6,78,194	
		2018-19	6,38,207	9,30,000	2,91,793	4,84,376	6,62,370	1,77,994	
		2019-20	6,38,207	10,65,000	4,26,793	7,08,476	9,68,820	2,60,344	
		2020-21	6,38,207	13,00,000	6,61,793	10,98,576	15,02,270	4,03,694	
7	Satyanarayan Barui, Purulia	2017-18	6,67,925	24,48,800	17,80,875	29,56,253	40,42,587	10,86,334	
		2018-19	6,67,925	38,55,000	31,87,075	52,90,545	72,34,661	19,44,116	
		2019-20	6,67,925	24,25,000	17,57,075	29,16,745	39,88,561	10,71,816	
		2020-21	6,67,925	37,10,000	30,42,075	50,49,845	69,05,511	18,55,666	

Sl. No.	Name of the Sand Lessee	Financial years of production	Production Target, as per the mining plan (in cft.)	Production Quantity (in cft)	Excess production (in cft)	Royalty & cess realised (@ 166 per 100 cft) (in ₹)	Price of sand realisable (@ 227 per 100 cft) (in ₹)	Short realisation of the price of sand (in ₹)	DL&LRO's Reply & Date
ADM and DL&LRO, Purba Medinipur									
8	Tapan Bera, Nandakumar (Tamluk)	2019-20	2,08,444	2,96,250	87,806	1,45,758	1,99,320	53,562	Demand notice would be issued, for short realization of the price of sand, for excess extraction of sand, from the sand lessee/ 29.09.2022
9	Arun Kar, Nandakumar (Tamluk)	2019-20	2,46,662	3,92,500	1,45,838	2,42,091	3,31,052	88,961	
		2020-21	2,46,662	2,58,750	12,088	20,066	27,440	7,374	
10	Ranjit Gayen, Sutahata - II (Haldia)	2019-20	1,92,553	3,17,500	1,24,947	2,07,412	2,83,630	76,218	
11	SK. Ahamadullah, Sutahata - II (Haldia)	2019-20	2,11,357	4,13,750	2,02,393	3,35,972	4,59,432	1,23,460	
12	Biswajit Singh, Sutahata - II (Haldia)	2019-20	1,92,553	4,73,150	2,80,597	4,65,791	6,36,955	1,71,164	
13	Sk Muktar Kaji & others, Mahisadal	2019-20	2,15,013	2,55,000	39,987	66,378	90,770	24,392	
	Total		**1,39,03,783**	**4,75,02,500**	**3,35,98,717**	**5,57,73,870**	**7,62,69,087**	**2,04,95,217**	

(Source: Sand mining lease files and extraction reports)

Appendix-13

(Refer Paragraph 2.10.5)

Non-realisation of dead rent on minor minerals

Sl. No.	Name of the Office/ Period of Audit	No. of cases	Name of the lessee	Area (in hectare)	Area (in acre)	Not working / functioning		No. of years of default	Dead rent ₹. 5000 per annum per acre	Amount of Dead Rent assessed (in ₹.)	Amount of Dead Rent assessable (in ₹.)	Short assessment of Dead rent (in ₹.)	Amount of Dead Rent realised (in ₹.)	Non realisation of Dead Rent (in₹.)	DL&LRO's Reply & Date
						From	To								
1	DL&LRO, Birbhum, 01.04.17 to 31.03.22	8	M/s Komarpur Clay Mines	4.98	12.31	01.01.16	31.12.19	4	5,000	99,600	2,46,200	1,46,600	0	2,46,200	Demand notice would be issued shortly, against the defaulter lessees, for realization of dead rent, after verification of records/ 20.05.22
			Shri SwapanKanti Ghosh	46.76	115.55	01.10.17	30.09.19	2	5,000	4,67,600	11,55,500	6,87,900	0	11,55,500	
			M/s S.S.Enterprise	4.86	12.01	01.10.17	30.09.21	4	5,000	97,200	2,40,200	1,43,000	0	2,40,200	
			M/s Sharma Minerals, Joypur	7.03	17.37	01.04.18	31.03.19	1	5,000	35,150	86,850	51,700	0	86,850	
			M/s Sharma Minerals, Joypur	7.03	17.37	01.04.20	31.03.22	2	5,000	70,300	1,73,700	1,03,400	0	1,73,700	
			M/s Burma Mines	10.05	24.83	01.04.17	31.03.22	5	5,000	2,51,250	6,20,750	3,69,500	0	6,20,750	
			Soharab Momin	20.24	50.01	01.09.17	31.08.21	4	5,000	4,04,800	10,00,200	5,95,400	0	10,00,200	
			M/s Bharati Stones Products	3.93	9.71	01.07.18	30.06.21	3	5,000	58,950	1,45,650	86,700	0	1,45,650	
2	DL&LRO, Bankura, 01.04.17 to 31.03.22	8	M/s Nepal Ch. Das	7.8	19.25	01.04.17	31.03.22	5	5,000	4,81,250	4,81,250	0	0	4,81,250	Demand notice would be issued, as per observation/ 27.07.22
			M/s Jitendra Nath Banerjee	7.04	17.38	01.04.21	31.03.22	1	5,000	86,900	86,900	0	0	86,900	
			M/s Baburam Banerjee	7.04	17.38	01.04.17	31.03.21	4	5,000	3,47,600	3,47,600	0		3,47,600	

Sl. No.	Name of the Office/ Period of Audit	No. of cases	Name of the lessee	Area (in hectare)	Area (in acre)	Not working / functioning		No. of years of default	Dead rent ₹. 5000 per annum per acre	Amount of Dead Rent assessed (in ₹.)	Amount of Dead Rent assessable (in ₹.)	Short assessment of Dead rent (in ₹.)	Amount of Dead Rent realised (in ₹.)	Non realisation of Dead Rent (in₹.)	DL&LRO's Reply & Date
						From	To								
			Biswarup Dutta	2.51	6.19	01.04.21	31.03.22	1	5,000	30,950	30,950	0	0	30,950	
			Partha Pratim Banerjee	3.40	8.4	01.04.17	31.03.22	5	5,000	2,10,000	2,10,000	0	0	2,10,000	
			M/s Tirupati Agency	4.09	10.1	01.07.19	30.06.21	2	5,000	1,01,000	1,01,000	0	0	1,01,000	
			Tarapada Doira	1.35	3.34	01.07.20	30.06.21	1	5,000	16,700	16,700	0	0	16,700	
			Goutam Kumar Das	2.47	6.1	01.10.19	30.09.21	2	5,000	61,000	61,000	0	0	61,000	
3	DL&LRO, Purulia, 01.04.17 to 31.03.22	2	WBMDTCL	3.68	9.09	01.04.17	31.03.22	5	5,000	2,27,250	2,27,250	0	0	2,27,250	Demand notice would be issued shortly, for realisation of dead rent from the lessees/ 29.11.22
			Sri Sanjoy Kumar Mondal	3.33	8.23	01.04.17	31.03.21	4	5,000	1,64,600	1,64,600	0	0	1,64,600	
	Total	**18**								**32,12,100**	**53,96,300**	**21,84,200**	**0**	**53,96,300**	

(Source: In-situ mining lease files)

Appendix -14

(Refer Paragraph 2.10.6)

Non-realisation of water rent and surface rent on minor minerals

Sl. No.	Name of the Office/Period of Audit	No. of cases	Financial year of start of lease	No. of years of default	Area of the lease (in acres)	Surface Rent (SR) realisable (@ ₹ 90 per acre)	Amount realisable (in ₹)	Water Rate (WR) realisable (₹ 54 per acre)	Amount realisable (in ₹)	Total amount realisable (in ₹)	Amount realised (in ₹)	Non realisation (in ₹)	DL&LRO's Reply & Date
1	DL&LRO, Birbhum, 01.04.2017 to 31.03.2022	78	2017-18	5	544.414	90	2,44,986	54	1,46,992	3,91,978	0	3,91,978	The assessment of surface rent and water rent would be conducted soon and demand notice would be issued accordingly / 20.05.2022
		40	2018-19	4	283.170	90	1,01,941	54	61,165	1,63,106	0	1,63,106	
		21	2019-20	3	125.220	90	33,809	54	20,286	54,095	0	54,095	
		4	2020-21	2	28.030	90	5,045	54	3,027	8,073	0	8,073	
		1	2021-22	1	5.610	90	505	54	303	808	0	808	
2	DL&LRO, Bankura, 01.04.2017 to 31.03.2022	4	2017-18	5	44.310	90	19,940	54	11,964	31,903	0	31,903	Demand notice would be issued /27.07.2022
		5	2019-20	3	56.800	90	15,336	54	9,202	24,538	0	24,538	
		4	2020-21	2	22.990	90	4,138	54	2,483	6,621	0	6,621	
		13	2021-22	1	133.320	90	11,999	54	7,199	19,198	0	19,198	
3	DL&LRO, Purulia, 01.04.2017 to 31.03.2022	19	2017-18	5	83.300	90	37,485	54	22,491	59,976	0	59,976	Demand notice would be issued, for realisation of surface rent and water rent /29.11.2022
		9	2018-19	4	53.130	90	19,127	54	11,476	30,603	0	30,603	
		3	2019-20	3	14.810	90	3,999	54	2,399	6,398	0	6,398	
		1	2020-21	2	8.400	90	1,512	54	907	2,419	0	2,419	
		1	2021-22	1	9.880	90	889	54	534	1,423	0	1,423	
Total		**203**					**5,00,711**		**3,00,427**	**8,01,138**	**0**	**8,01,138**	

(Source: Sand and in-situ mining lease files)

Appendix -15

(Refer Paragraph 2.11.1)

Non/short realisation of royalty and cess on minor minerals (brick earth)

<table>
<tr><th rowspan="2">Sl. No.</th><th rowspan="2">Name of the Office/ Period of Audit</th><th rowspan="2">No. of cases</th><th rowspan="2">Financial year of extraction</th><th rowspan="2">Quantity extracted (in cft.)</th><th colspan="2">Royalty</th><th colspan="2">Cess</th><th rowspan="2">Total amount realisable (in ₹)</th><th rowspan="2">Amount realised (in ₹)</th><th rowspan="2">Non/short Realisation (in ₹)</th><th rowspan="2">DL&LRO's Reply & Date</th><th rowspan="2">Total no. of brick field</th><th rowspan="2">No of brick field is taken by audit</th></tr>
<tr><th>Rate applicable (₹ 82 Per 100 cft.)</th><th>Amount realisable (in ₹)</th><th>Rate applicable (₹ 15 Per 100 cft.)</th><th>Amount realisable (in ₹)</th></tr>
<tr><td colspan="15">Non-realisation</td></tr>
<tr><td rowspan="3">1</td><td rowspan="3">DL&LRO, Birbhum, 01.04.2017 to 31.03.2022</td><td>1</td><td>2019-20</td><td>1,57,555</td><td>82</td><td>1,29,195</td><td>15</td><td>23,633</td><td>1,52,828</td><td>0</td><td>1,52,828</td><td rowspan="3">Demand notice would be issued shortly, for realisation of royalty & cess, from the defaulter brick field owners, after proper verification of records / 20.05.2022</td><td>34</td><td>30</td></tr>
<tr><td>2</td><td>2020-21</td><td>2,59,966</td><td>82</td><td>2,13,172</td><td>15</td><td>38,995</td><td>2,52,167</td><td>0</td><td>2,52,167</td><td>34</td><td>30</td></tr>
<tr><td>17</td><td>2021-22</td><td>28,80,653</td><td>82</td><td>23,62,135</td><td>15</td><td>4,32,098</td><td>27,94,233</td><td>0</td><td>27,94,233</td><td>34</td><td>30</td></tr>
<tr><td rowspan="2">2</td><td rowspan="2">DL&LRO, Bankura, 01.04.2017 to 31.03.2022</td><td>1</td><td>2020-21</td><td>1,20,000</td><td>82</td><td>98,400</td><td>15</td><td>18,000</td><td>1,16,400</td><td>0</td><td>1,16,400</td><td rowspan="2">The due date has been extended, in a meeting with brick field owners, on 15th August, 2022, for the period 2021-22 and demand notice would be issued for the period 2020-21/26.07.2022</td><td>54</td><td>7</td></tr>
<tr><td>10</td><td>2021-22</td><td>21,00,000</td><td>82</td><td>17,22,000</td><td>15</td><td>3,15,000</td><td>20,37,000</td><td>0</td><td>20,37,000</td><td>58</td><td>6</td></tr>
<tr><td rowspan="3">3</td><td rowspan="3">DL&LRO, Paschim Bardhaman, 01.04.2017 to 31.03.2022</td><td>8</td><td>2019-20</td><td>14,40,000</td><td>82</td><td>11,80,800</td><td>15</td><td>2,16,000</td><td>13,96,800</td><td>0</td><td>13,96,800</td><td rowspan="3">Concerned BL&LROs would be asked to issue demand notices, to the defaulting Brick Field owners and make all efforts to realise the outstanding amount/02.09.2022</td><td>238</td><td>70</td></tr>
<tr><td>26</td><td>2020-21</td><td>23,40,000</td><td>82</td><td>19,18,800</td><td>15</td><td>3,51,000</td><td>22,69,800</td><td>0</td><td>22,69,800</td><td>248</td><td>70</td></tr>
<tr><td>38</td><td>2021-22</td><td>68,40,000</td><td>82</td><td>56,08,800</td><td>15</td><td>10,26,000</td><td>66,34,800</td><td>0</td><td>66,34,800</td><td>241</td><td>70</td></tr>
<tr><td rowspan="5">4</td><td rowspan="5">DL&LRO, Purba Bardhaman, 01.04.2017 to 31.03.2022</td><td>1</td><td>2019-20</td><td>2,91,500</td><td>82</td><td>2,39,030</td><td>15</td><td>43,725</td><td>2,82,755</td><td>0</td><td>2,82,755</td><td rowspan="3">Demand notice would be issued shortly, for realisation of royalty & cess, from the defaulter brick field owners/ 20.09.2022</td><td>65</td><td>42</td></tr>
<tr><td>3</td><td>2020-22</td><td>3,96,000</td><td>82</td><td>3,24,720</td><td>15</td><td>59,400</td><td>3,84,120</td><td>0</td><td>3,84,120</td><td>65</td><td>42</td></tr>
<tr><td>10</td><td>2021-22</td><td>28,72,582</td><td>82</td><td>23,55,517</td><td>15</td><td>4,30,887</td><td>27,86,405</td><td>0</td><td>27,86,405</td><td>65</td><td>42</td></tr>
<tr><td>30</td><td>2020-21</td><td>40,01,250</td><td>82</td><td>32,81,025</td><td>15</td><td>6,00,188</td><td>38,81,213</td><td>0</td><td>38,81,213</td><td rowspan="2">All BL&LRO's would be instructed to realise the dues/23.12.2021</td><td>192</td><td>174</td></tr>
<tr><td>14</td><td>2019-20</td><td>37,51,000</td><td>82</td><td>30,75,820</td><td>15</td><td>5,62,650</td><td>36,38,470</td><td>0</td><td>36,38,470</td><td>193</td><td>173</td></tr>
</table>

Sl. No.	Name of the Office/ Period of Audit	No. of cases	Financial year of extraction	Quantity extracted (in cft.)	Royalty		Cess		Total amount realisable (in ₹)	Amount realised (in ₹)	Non/short Realisation (in ₹)	DL&LRO's Reply & Date	Total no. of brick field	No of brick field is taken by audit
					Rate applicable (₹ 82 Per 100 cft.)	Amount realisable (in ₹)	Rate applicable (₹ 15 Per 100 cft.)	Amount realisable (in ₹)						
5	DL&LRO, Purba Medinipur, 01.04.2017 to 31.03.2022	5	2021-22	12,85,100	82	10,53,782	15	1,92,765	12,46,547	0	12,46,547	Demand notice would be issued shortly, for realisation of royalty & cess, from the defaulter brick field owners/ 29.09.2022	16	16
Total (NR)		**166**		**2,87,35,606**		**2,35,63,197**		**43,10,341**	**2,78,73,538**	**0**	**2,78,73,538**		**1,537**	**802**
Short-realisation														
1	DL&LRO, Birbhum, 01.04.2017 to 31.03.2022	9	2021-22	16,50,640	82	13,53,525	15	2,47,596	16,01,121	10,35,658	5,65,463	Demand notice would be issued shortly, for realisation of royalty & cess, from the defaulter brick field owners, after proper verification of records/ 20.05.2022	0	0
2	DL&LRO, Paschim Bardhaman, 01.04.2017 to 31.03.2022	1	2018-19	1,65,000	82	1,35,300	15	24,750	1,60,050	1,00,000	60,050	Concerned BL&LROs would be asked to issue demand notices, to the defaulting Brick Field owners and make all efforts to realise the outstanding amount/02.09.2022	0	0
		21	2019-20	37,80,000	82	30,99,600	15	5,67,000	36,66,600	30,95,550	5,71,050		0	0
		1	2020-21	90,000	82	73,800	15	13,500	87,300	80,025	7,275		0	0
		7	2021-22	12,60,000	82	10,33,200	15	1,89,000	12,22,200	4,43,400	7,78,800		0	0
3	DL&LRO, Purba Bardhaman, 01.04.2017 to 31.03.2022	1	2019-20	2,09,000	82	1,71,380	15	31,350	2,02,730	50,000	1,52,730	Demand notice would be issued shortly, for realisation of royalty & cess, from the defaulter brick field owners/ 20.09.2022	0	0
		16	2021-22	43,09,828	82	35,34,059	15	6,46,474	41,80,533	15,75,000	26,05,533		0	0
		2	2020-21	2,50,250	82	2,05,205	15	37,538	2,42,743	95,060	1,47,683	All BL&LRO's would be instructed to realise the dues/23.12.2021	0	0
		6	2019-20	15,01,500	82	12,31,230	15	2,25,225	14,56,455	7,61,450	6,95,005		0	0
Total (NR)		**64**		**1,32,16,218**		**1,08,37,299**		**19,82,433**	**1,28,19,731**	**72,36,143**	**55,83,588**		**0**	**0**
Grand Total:		**230**		**4,19,51,824**		**3,44,00,496**		**62,92,774**	**4,06,93,269**	**72,36,143**	**3,34,57,126**		**1,537**	**802**

(Source: Brick field Registers and files)

Appendix -16

(Refer Paragraph 2.11.2)

Non/short realisation of the price of earth on minor minerals (brick earth)

Sl. No.	Name of the Office/Period of Audit	No. of cases	Financial Year of extraction	Quantity extracted (in cft)	Rate applicable (₹ 123 Per 100 cft.)	Amount realisable (in ₹)	Amount realised (in ₹)	Non/short Realisation (in ₹)	DL&LRO's Reply & Date	Total no. of brick field	No of brick field has been taken by audit
Non-realisation											
1	DL&LRO, Birbhum, 01.04.2017 to 31.03.2022	3	2019-20	4,21,358	123	5,18,270	0	5,18,270	Demand notice would be issued shortly, for realisation of the price of earth, from the defaulter brick field owners, after proper verification of records/20.05.2022	34	4
		4	2020-21	2,91,959	123	3,59,110	0	3,59,110		34	4
		4	2021-22	6,71,506	123	8,25,952	0	8,25,952		34	4
2	DL&LRO, Bankura, 01.04.2017 to 31.03.2022	1	2017-18	2,56,097	123	3,14,999	0	3,14,999	The due date for submission/deposit of dues, from brick field owners had been extended to 15 August 2022, for the FYs 2021-22 and non-realisation of the price of earth, for the FYs 2017-18 to 2020-21, is subject to verification and, after verification, demand notice would be issued/26.07.2022	54	47
		2	2018-19	5,28,454	123	6,49,998	0	6,49,998		58	52
		19	2019-20	48,45,532	123	59,60,004	0	59,60,004		63	55
		30	2020-21	42,00,000	123	51,66,000	0	51,66,000		63	29
		38	2021-22	79,80,000	123	98,15,400	0	98,15,400		64	34
3	DL&LRO, Paschim Bardhaman, 01.04.2017 to 31.03.2022	13	2017-18	23,40,000	123	28,78,200	0	28,78,200	Concerned BL&LROs would be asked to issue demand notices, to the defaulting brick field owners and make all efforts to realise the outstanding amount/02.09.2022	238	168
		31	2018-19	51,15,000	123	62,91,450	0	62,91,450		248	178
		70	2019-20	1,26,00,000	123	1,54,98,000	0	1,54,98,000		241	171
		105	2020-21	94,50,000	123	1,16,23,500	0	1,16,23,500		240	170
		134	2021-22	2,41,20,000	123	2,96,67,600	0	2,96,67,600		244	174
		5	2017-18	9,00,000	123	11,07,000	0	11,07,000		140	76
		22	2018-19	36,32,439	123	44,67,900	0	44,67,900		140	76
		40	2019-20	72,00,000	123	88,56,000	0	88,56,000		140	76
		54	2020-21	48,60,000	123	59,77,800	0	59,77,800		140	76
		58	2021-22	1,04,40,000	123	1,28,41,200	0	1,28,41,200		140	76

Sl. No.	Name of the Office/Period of Audit	No. of cases	Financial Year of extraction	Quantity extracted (in cft)	Rate applicable (₹ 123 Per 100 cft.)	Amount realisable (in ₹)	Amount realised (in ₹)	Non/short Realisation (in ₹)	DL&LRO's Reply & Date	Total no. of brick field	No of brick field has been taken by audit
4	DL&LRO, Purba Bardhaman, 01.04.2017 to 31.03.2022	2	2020-22	2,50,250	123	3,07,808	0	3,07,808	Demand notice would be issued shortly, for realisation of the price of earth, from the defaulter brick field owners/20.09.2022	65	23
		7	2021-22	16,73,998	123	20,59,018	0	20,59,018		65	23
		2	2020-21	4,18,000	123	5,14,140	0	5,14,140	All BL&LROs would be instructed to realise the dues/23.12.2021	15	3
		1	2019-20	2,09,000	123	2,57,070	0	2,57,070		15	3
5	DL&LRO, North 24 Parganas, 01.04.2018 to 30.09.2021	11	2018-19	21,40,000	123	26,32,200	0	26,32,200	Necessary instructions would be sent to the BL&LROs concerned, to realise the amount accordingly/17.12.2021	37	13
		11	2019-20	21,40,000	123	26,32,200	0	26,32,200		33	11
		10	2020-21	9,40,000	123	11,56,200	0	11,56,200		27	11
		12	2018-19	21,30,000	123	26,19,900	0	26,19,900		35	23
		12	2019-20	21,30,000	123	26,19,900	0	26,19,900		35	23
		12	2020-21	10,65,000	123	13,09,950	0	13,09,950		35	23
		5	2019-20	10,30,000	123	12,66,900	0	12,66,900		0	0
		7	2020-21	7,30,000	123	8,97,900	0	8,97,900			
		2	2018-19	4,30,000	123	5,28,900	0	5,28,900		7	5
		2	2019-20	4,30,000	123	5,28,900	0	5,28,900		7	5
		2	2020-21	2,15,000	123	2,64,450	0	2,64,450		7	5
		1	2018-19	1,70,000	123	2,09,100	0	2,09,100		0	0
		2	2019-20	3,40,000	123	4,18,200	0	4,18,200			
		2	2020-21	1,70,000	123	2,09,100	0	2,09,100			
		42	2020-21	37,65,000	123	46,30,950	0	46,30,950		109	77
		24	2019-20	43,80,000	123	53,87,400	0	53,87,400		109	77
		15	2018-19	26,40,000	123	32,47,200	0	32,47,200		109	77
		1	2019-20	2,30,000	123	2,82,900	0	2,82,900		108	20
		2	2020-21	4,60,000	123	5,65,800	0	5,65,800		0	0
		57	2020-21	49,20,000	123	60,51,600	0	60,51,600		90	74
		3	2019-20	5,10,000	123	6,27,300	0	6,27,300		60	30
		11	2020-21	9,65,000	123	11,86,950	0	11,86,950		60	30
		6	2018-19	10,20,000	123	12,54,600	0	12,54,600		0	0
		6	2019-20	10,20,000	123	12,54,600	0	12,54,600			
		6	2020-21	10,20,000	123	12,54,600	0	12,54,600			
		1	2018-19	1,70,000	123	2,09,100	0	2,09,100		21	17
		3	2019-20	5,10,000	123	6,27,300	0	6,27,300		21	17
		1	2020-21	85,000	123	1,04,550	0	1,04,550		21	17

Sl. No.	Name of the Office/Period of Audit	No. of cases	Financial Year of extraction	Quantity extracted (in cft)	Rate applicable (₹ 123 Per 100 cft.)	Amount realisable (in ₹)	Amount realised (in ₹)	Non/short Realisation (in ₹)	DL&LRO's Reply & Date	Total no. of brick field	No of brick field has been taken by audit
6	DL&LRO, Jhargram, 04.04.2014 to 31.08.2021	4	2019-20	4,60,000	123	5,65,800	0	5,65,800	Action would be taken to realise the revenue/29.09.2021	32	32
Total (NR)		**918**		**13,86,18,593**	123	**17,05,00,869**	**0**	**17,05,00,869**		**3,438**	**2,109**
Short-realisation											
1	DL&LRO, Birbhum, 01.04.2017 to 31.03.2022	4	2018-19	5,07,755	123	6,24,539	4,97,600	1,26,939	Demand notice would be issued shortly, for realisation of the price of earth, from the defaulter brick field owners, after proper verification of records/20.05.2022	0	0
		1	2019-20	1,62,561	123	1,99,950	1,59,303	40,647		0	0
2	DL&LRO, Bankura, 01.04.2017 to 31.03.2022	13	2017-18	33,29,261	123	40,94,991	26,40,000	14,54,991	The due date for submission/deposit of dues, from brick field owners had been extended to 15 August, 22, for the FYs 2021-22 and non-realisation of the price of earth, for the FYs 2017-18 to 2020-21, is subject to verification and, after verification, demand notice would be issued/26.07.2022	0	0
		15	2018-19	39,63,405	123	48,74,988	30,77,000	17,97,988		0	0
		11	2019-20	29,59,352	123	36,40,003	20,95,000	15,45,003		0	0
		1	2020-21	1,40,000	123	1,72,200	1,00,000	72,200		0	0
3	DL&LRO, Paschim Bardhaman, 01.04.2017 to 31.03.2022	44	2017-18	79,20,000	123	97,41,600	69,58,927	27,82,673	Concerned BL&LROs would be asked to issue demand notices, to the defaulting brick field owners and make all efforts to realise the outstanding amount/02.09.2022	0	0
		14	2018-19	23,10,000	123	28,41,300	16,62,966	11,78,334		0	0
		35	2019-20	63,00,000	123	77,49,000	52,35,750	25,13,250		0	0
		14	2020-21	12,60,000	123	15,49,800	9,65,050	5,84,750		0	0
		13	2021-22	23,40,000	123	28,78,200	12,70,050	16,08,150		0	0
		21	2017-18	37,80,000	123	46,49,400	33,73,400	12,76,000		0	0
		19	2018-19	31,35,000	123	38,56,050	27,47,500	11,08,550		0	0
		26	2019-20	46,41,951	123	57,09,600	39,84,300	17,25,300		0	0
		12	2020-21	10,60,975	123	13,04,999	12,03,125	1,01,874		0	0
		9	2021-22	16,20,000	123	19,92,600	11,00,600	8,92,000		0	0

Sl. No.	Name of the Office/Period of Audit	No. of cases	Financial Year of extraction	Quantity extracted (in cft)	Rate applicable (₹ 123 Per 100 cft.)	Amount realisable (in ₹)	Amount realised (in ₹)	Non/short Realisation (in ₹)	DL&LRO's Reply & Date	Total no. of brick field	No of brick field has been taken by audit
4	DL&LRO, Purba Bardhaman, 01.04.2017 to 31.03.2022	1	2019-20	2,91,500	123	3,58,545	1,50,000	2,08,545	Demand notice would be issued shortly, for realisation of the price of earth, from the defaulter brick field owners/20.09.2022	0	0
		5	2021-22	13,30,164	123	16,36,102	5,93,769	10,42,333		0	0
		1	2019-20	2,91,500	123	3,58,545	50,000	3,08,545	All BL&LROs would be instructed to realise the dues/23.12.2021	0	0
5	DL&LRO, North 24 Parganas, 01.04.2018 to 30.09.2021	2	2018-19	3,40,000	123	4,18,200	3,29,800	88,400	Necessary instructions would be sent to the BL&LROs concerned, to realise the amount accordingly/17.12.2021	0	0
		1	2019-20	1,70,000	123	2,09,100	1,64,900	44,200			
		1	2020-21	85,000	123	1,04,550	82,450	22,100			
		3	2019-20	5,10,000	123	6,27,300	2,82,073	3,45,227		0	0
		15	2019-20	26,40,000	123	32,47,200	26,37,008	6,10,192		0	0
		16	2018-19	28,10,000	123	34,56,300	28,12,435	6,43,865		0	0
		8	2020-21	7,10,000	123	8,73,300	7,07,317	1,65,983		0	0
		2	2018-19	4,60,000	123	5,65,800	4,51,976	1,13,824		0	0
		2	2019-20	4,60,000	123	5,65,800	4,51,976	1,13,824		0	0
		15	2018-19	27,00,000	123	33,21,000	26,23,800	6,97,200		60	30
		12	2019-20	23,30,000	123	28,65,900	22,91,200	5,74,700		0	0
		4	2020-21	3,70,000	123	4,55,100	3,65,000	90,100		0	0
		6	2018-19	10,20,000	123	12,54,600	9,91,930	2,62,670		0	0
		2	2019-20	3,40,000	123	4,18,200	3,30,310	87,890		0	0
		6	2020-21	5,10,000	123	6,27,300	4,95,462	1,31,838		0	0
Total (SR):		**354**		**6,27,98,424**	123	**7,72,42,062**	**5,28,81,977**	**2,43,60,085**		**60**	**30**
Grand Total:		**1,272**		**20,14,17,017**	123	**24,77,42,931**	**5,28,81,977**	**19,48,60,954**		**3,498**	**2,139**

(Source: Brick field Registers and files)

Appendix -17

(Refer Paragraph 2.12)

Non-levy of penalty, due on account of short extraction on minor minerals

Sl. No.	Name of the lessee	Location of the area of lease	Date of execution of lease & Period of lease	No. of cases	Financial Year of extraction	Minimum quantity of mineral extracted/ despatched per annum (in cum)	Quantity extracted (in cum)	Quantity short extracted (in cum)	Royalty accrued on the shortfall quantity (in ₹)	Penalty leviable (twice the amount of royalty accrued on the shortfall quantity) (in ₹)	DL&LRO's Reply & Date
ADM and DL&LRO, Birbhum											
1	**West Bengal Mineral Development & Trading Corporation Limited Company**	Mouza- Hatgacha-1, Chanda-2, Kapasdanga-22, Haridaspur-5, Pachami-3, PS- Md. Bazar Dist- Birbhum	03.04.2008 20 years	1	2017-18	6,67,916	1,87,269	4,80,647	2,54,74,313	5,09,48,625	Necessary action would be taken, after verification of records/ 20.05.2022
ADM and DL&LRO, Purulia											
2	**Sukriti Pebbles**	Mouza- Dhargram-203, PO- Sarberia PS- Barabazar, Purulia, Area : 39 acres	02.05.2019	1	2020-21	2,60,869	14,000	2,46,869	1,30,84,057	2,61,68,114	Demand notice would be issued, for realisation of penalty, from the stone lessees, for short extraction of mineral/ 29.11.2022
			5 years	1	2021-22	2,60,869	50,000	2,10,869	1,11,76,057	2,23,52,114	
Total				**3**		**11,89,654**	**2,51,269**	**9,38,385**	**4,97,34,427**	**9,94,68,853**	

(Source: Black stone mining lease files)

Annexure-18

(Refer Paragraph 2.16.2)

Non-submission of Environment Clearances (ECs)

Sl. No.	H-I Bidder	Block	Sand Block Name/Auction ID	Date of issue of letter of intent (LoI)	Due date of submission of ECs	Non submission of ECs upto 31.03.2022	Delay in submission of ECs (No. of days)
ADM and DL&LRO, Birbhum							
1	Md. Moinuddin Sha	Illambazar	Bir/Illambazar/067/2016	17.04.2018	16.10.2018	31.03.2022	1,262
2	M/s Mondal Traders	Illambazar	Bir/Illambazar/ 069/2016	17.04.2018	16.10.2018	31.03.2022	1,262
3	Vivek Singh	Illambazar	Bir/Illambazar/ 081/16	13.03.2018	12.09.2018	31.03.2022	1,296
4	M/s. Variety Vyapaar Pvt. Ltd.	Dubrajpur	Bir/Dubrajpur/ 141/2016	11.05.2018	10.11.2018	31.03.2022	1,237
5	M/s. Rainbow infrastructure & Housing Dev. Ltd.	Dubrajpur	Bir/Dubrajpur/ 145/2016	17.04.2018	16.10.2018	31.03.2022	1,262
6	Kohinoor Bibi	Khairasole	Bir/Khairasole/ 157/2016	11.05.2018	10.11.2018	31.03.2022	1,237
7	Falcon Abasan Pvt. Ltd.	Rampurhat-I	Bir/Rampurhat-I/ 190/2016	06.04.2017	05.10.2017	31.03.2022	1,638
8	M/s Variety Vyapaar (Pvt.) Ltd.	Nanoor	Bir/Nanoor/ 208/2016	28.05.2018	27.11.2018	31.03.2022	1,220
9	Gee Dee Mining Pvt.Ltd.	Mayureswar-I	Bir/Mayureswar-I /216/2016	06.04.2017	05.10.2017	31.03.2022	1,628
10	Abhilasha Commercial Pvt.Ltd.	Murarai-I	Bir/Murarai-I/ 239/2016	06.12.2017	05.06.2018	31.03.2022	1,395
11	Sunil Das	Suri-I	Bir/Suri-I/ 253/2016	05.02.2018	04.08.2018	31.03.2022	1,335
12	Banshidhar Construction Pvt. Ltd.	Illambazar	Bir/Illambazar/276/2018	30.08.2018	27.02.2019	31.03.2022	1,128
13	Pappu Kumar	Illambazar	Bir/Illambazar/277/2018	30.08.2018	27.02.2019	31.03.2022	1,128
14	Laltu Dutta	Illambazar	Bir/ Illambazar/ 282/2018	12.02.2019	11.08.2019	31.03.2022	963
15	Rakesh Kumar Jha	Suri-I	Bir/Suri-I/ 286/2018	12.02.2019	11.08.2019	31.03.2022	963
ADM and DL&LRO, Bankura							
16	Indivisual	Sonamukhi	2016_DMBWB_46	06.06.2017	05.12.2017	31.03.2022	1,577
17	Indivisual	Sonamukhi	2016_DMBWB_47	06.06.2017	05.12.2017	31.03.2022	1,577
18	Amiya Ranjan Das	Sarenga	2016_DMBWB_93	10.02.2017	09.08.2017	31.03.2022	1,695
19	Arun Kumar	Sarenga	2016_DMBWB_147	31.01.2017	30.07.2017	31.03.2022	1,705

Sl. No.	H-I Bidder	Block	Sand Block Name/Auction ID	Date of issue of letter of intent (LoI)	Due date of submission of ECs	Non submission of ECs upto 31.03.2022	Delay in submission of ECs (No. of days)
20	Pramod Kumar	Sarenga	2016_DMBWB_148	31.01.2017	30.07.2017	31.03.2022	1,705
21	Abir Kumar Dey	Barjora	2016_DMBWB_206	03.04.2017	02.10.2017	31.03.2022	1,641
22	Banshi Mohan Ghosh	Barjora	2016_DMBWB_207	03.04.2017	02.10.2017	31.03.2022	1,641
23	Swapan Mondal	Barjora	2016_DMBWB_209	15.02.2017	14.08.2017	31.03.2022	1,690
24	Santanu Ray	Saltora	2017_DMBWB_225	02.03.2017	01.09.2017	31.03.2022	1,672
25	Sho Muk Engineering & Consultancy Services	Barjora	2017_WB_167	22.06.2018	21.12.2018	31.03.2022	1,196
26	JHM Import Export Pvt. Ltd.	Patrasayer	2017_WB_345	29.01.2018	28.07.2018	31.03.2022	1,342
27	K and K Minerals Pvt. Ltd.	Patrasayer	2017_WB_347	09.01.2018	08.07.2018	31.03.2022	1,362
28	Nrisingha Chattopadhyay	Chhatna	2017_WB_443	16.01.2018	15.07.2018	31.03.2022	1,355
29	Bani De	Chhatna	2017_WB_445	08.03.2018	07.09.2018	31.03.2022	1,301
30	R.N. Infra build Pvt. Ltd.	Mejhia	2019_WB_1372	12.06.2019	11.12.2019	31.03.2022	841
31	Modern Industrial Infrastructure Pvt. Ltd.	Mejhia	2019_WB_1379	12.06.2019	11.12.2019	31.03.2022	841
32	Nikhil Kumar Roy	Mejhia	2019_WB_1336	08.03.2019	07.09.2019	31.03.2022	936
33	Santosh Kumar Chousria	Mejhia	2018_WB_1215	08.03.2019	07.09.2019	31.03.2022	936
34	Malay Kumar Dutta	Bishnupur	2019_WB_1332	08.03.2019	07.09.2019	31.03.2022	936
35	Jana Engineering Works,	Bishnupur	2018_WB_1193	08.03.2019	07.09.2019	31.03.2022	936
36	Pradip Mukherjee	Bishnupur	2018_WB_1194	08.03.2019	07.09.2019	31.03.2022	936
37	Debraj Enterprise,	Bishnupur	2018_WB_1196	08.03.2019	07.09.2019	31.03.2022	936
38	Bose Enterprise,	Bishnupur	2018_WB_1197	07.03.2019	06.09.2019	31.03.2022	937
39	Prasenjit Maji	Bishnupur	2018_WB_1198	08.03.2019	07.09.2019	31.03.2022	936
40	Patit Makur	Bishnupur	2018_WB_1199	08.03.2019	07.09.2019	31.03.2022	936
41	Basu Agrofarms Private Limited	Bishnupur	2018_WB_1204	08.03.2019	07.09.2019	31.03.2022	936

(Source: Records maintained in DL&ROs)

Appendix-19

(Refer Paragraph 3.7)

A. Working results of WBSEDCL

(₹ in crore)

Sl. No.	Particulars	2017-18	2018-19	2019-20	2020-21	2021-22
1	Revenue from operations	18,923.02	20,483.97	22,261.25	21,452.87	25,986.53
2	Other operating revenue	454.53	494.77	558.34	549.24	680.52
3	Other income	474.72	608.75	1,022.33	829.25	1,127.72
4	Movement in the Regulatory Deferral account balance during the current year (Note 1)	1,537.59	1,752.85	2,900.73	4,709.77	1,425.63
5	Adjustment in the Regulatory Deferral account balance (Note 2)	-595.39	-522.31	-522.31	-648.34	-2,676.03
6	Net Movement in the Regulatory Deferral account balance (4+5) (Note 3)	942.20	1,230.54	2,378.42	4,061.43	-1,250.40
7	**Total income (1+2+3+6)**	**20,794.47**	**22,818.03**	**26,220.34**	**26,892.79**	**26,544.37**
8	Power purchase cost, including transmission charges	16,139.90	18,232.03	20,148.38	21,252.24	20,122.36
9	Employee cost	956.74	902.57	2,163.32	1,487.60	1,700.30
10	Interest and Finance	1,542.83	1,446.60	1,456.09	1,594.04	1,776.51
11	Depreciation	927.50	926.41	979.32	1,084.69	1,207.35
12	Other Expenses + CSR	1,170.28	1,242.70	1,387.66	1,404.13	1,645.23
13	**Total Expenses (8 to 12)**	**20,737.25**	**22,750.31**	**26,134.77**	**26,822.70**	**26,451.75**
14	Profit Before Tax (7 - 13)	57.22	67.72	85.57	70.09	92.62
15	Income Tax	16.37	19.78	22.44	22.04	24.25
16	Profit After Tax (14-15)	40.85	47.94	63.13	48.05	68.37
17	% of Regulatory income to total income (4/7 x 100)	7.39	7.68	11.06	17.51	5.37
18	% of Profit to total income (16/7 x 100)	0.20	0.21	0.24	0.18	0.26
19	Current Assets	9,413.18	8,819.90	9,878.03	7,103.29	10,118.53
20	Current Liabilities	18,220.54	18,602.85	21,800.36	25,504.20	23,615.54
21	Current Asset Ratio	0.52	0.47	0.45	0.28	0.43
22	**Total Debt**	**11,705.99**	**10,445.24**	**12,385.84**	**12,926.11**	**16,452.12**
23	Equity	2,296.24	2,316.86	2,365.89	2,365.89	2,480.89
24	Debt-Equity Ratio (22/23)	5.10	4.51	5.24	5.46	6.63
25	Earning before Interest and Tax (14+10)	1,600.05	1,514.32	1,541.66	1,664.13	1,869.13
26	Interest Coverage Ratio (25/10)	1.04	1.05	1.06	1.04	1.05
27	Shareholder's fund	2,476.52	2,591.30	2,668.69	2,716.74	2,900.11
28	Return on Equity (%) (RoE){(27/16) x100}	1.65	1.85	2.37	1.77	2.36

(Source : Annual accounts)

Note 1 - Accounting of amounts under regulatory income and expenditure for the current financial year

Note 2 - Movement of regulatory balances carried forward from previous years in the current year's accounts

Note 3 - Net impact of regulatory adjustments

Appendix- 19

(Refer Paragraph 3.7)

B. Working results of WBPDCL

(₹ in crore)

Sl. No.	Particulars	2017-18	2018-19	2019-20	2020-21	2021-22
1	Operating income from sale of Energy	9,133.45	9,853.68	9,626.79	8,964.30	9,784.00
2	Non operating Income	144.38	253.23	232.85	587.55	571.41
3	**Total Income**	**9,277.83**	**10,106.91**	**9,859.64**	**9,551.85**	**10,355.41**
4	fuel cost	6,517.13	7,121.43	6,424.31	5,794.06	6,842.40
5	Employees cost	549.96	585.70	1,070.16	1,156.11	816.86
6	Repair and maintenance	430.30	544.57	500.56	458.67	519.46
7	Administrative & other overheads	89.31	90.02	104.12	140.59	115.44
8	Depreciation	651.93	664.90	680.95	708.68	714.20
9	Interest & financial charges	989.22	1,061.81	1,060.77	1,042.71	844.52
10	Exceptional Items					131.00
11	**Total Expenditure**	**9,227.85**	**10,068.43**	**9,840.87**	**9,300.82**	**9,983.88**
12	Profit before tax	49.98	38.48	18.77	251.03	371.53
13	Income tax	10.67	8.28	3.27	47.45	67.34
14	Profit after tax	39.31	30.20	15.50	203.58	304.19
15	Current Assets	9,255.81	12,594.45	14,905.53	16,225.57	15,678.45
16	Current Liabilities	8,351.12	9,641.23	11,359.75	12,648.49	11,694.75
17	Current Assets Ratio (15/16)	1.11	1.31	1.31	1.28	1.34
18	**Total Debt**	**8,950.40**	**9,869.07**	**10,003.05**	**10,255.46**	**13,368.90**
19	Equity	6,817.54	6,817.54	7,579.26	7,579.26	7,579.26
20	Debt-Equity Ratio (18/19)	1.31	1.45	1.32	1.35	1.76
21	Earning before Interest and Tax (12+9)	1,039.20	1,100.29	1,079.54	1,293.74	1,216.05
22	Interest Coverage Ratio (21/9)	1.05	1.04	1.02	1.24	1.44
23	Shareholder's fund	8,286.33	8,469.14	9,071.34	9,316.57	9,610.70
24	Return on Equity (RoE) (%) {(14/23) x 100}	0.47	0.36	0.17	2.19	3.17

Appendix-19

(Refer Paragraph 3.7)

C. Working results of DPL

(₹ in crore)

Sl. No.	Particulars	2017-18	2018-19	2019-20	2020-21	2021-22
1	Generation Revenue	1,120.38	1,085.48	835.81	1,187.34	1,042.23
2	Other income including interest/ subsidy	9.89	29.65	4.81	3.99	82.84
3	**Total Income**	**1,130.27**	**1,115.13**	**840.62**	**1,191.33**	**1,125.07**
4	Employee Benefit Expenses	190.21	163.92	187.56	170.99	176.70
5	Finance Cost	359.97	337.04	330.79	347.55	292.12
6	Depreciation / Amortisation Expenses	141.89	141.84	129.23	128.11	128.53
7	Other Expenses	439.55	192.01	113.94	113.74	124.78
8	Prior period adjustment (net)	8.69	-5.43	0.68	1.97	-3.65
9	**Total Fixed Cost**	**1,140.31**	**829.38**	**761.52**	**760.39**	**718.48**
10	Variable Cost					
11	Cost of Material Consumed	576.94	585.69	623.84	753.02	655.78
12	Purchase of Energy	86.15	38.58	0.00	0.00	
13	Total Variable Cost	663.09	624.27	623.84	753.02	655.78
14	**Total cost**	**1,803.40**	**1,453.65**	**1,385.36**	**1,513.41**	**1,374.26**
15	Profit (+) / Loss (-) before exceptional items	-673.13	-338.52	-544.74	-322.08	-249.19
16	Exceptional items/Regulatory income	83.05	174.22	153.18	210.46	180.42
17	Profit (+) / Loss (-) after exceptional items	-590.08	-164.30	-391.56	-111.62	-68.77
18	Extraordinary items					73.97
19	Less: Tax	0.00	0.00	0.00	0.00	0.00
20	Profit (+) / Loss (-) after tax	-590.08	-164.30	-391.56	-111.62	5.20
21	% of regulatory income to total income	7.35	15.62	18.22	17.67	16.04
22	Current Assets	830.68	996.94	1,162.03	1,289.01	1,584.08
23	Current Liabilities	1,831.11	1,404.00	1,990.70	2,169.85	2,269.90
24	Current Assets Ratio (22/23)	0.45	0.71	0.58	0.59	0.70
25	**Total Debt**	**2,983.33**	**3,105.01**	**2,874.54**	**2,793.37**	**3,448.54**
26	Equity	1,301.00	1,301.00	1,815.29	1,815.29	1,815.29
27	Debt-Equity Ratio (25/26)	2.29	2.39	1.58	1.54	1.90
28	Earning before Interest and Tax (5+20)	-230.11	172.74	-60.77	235.93	297.32
29	Interest Coverage Ratio (28/5)	-0.64	0.51	-0.18	0.68	1.02
30	Shareholder's fund	-1,694.41	-1,870.30	-1,758.46	-1,881.26	-1,885.09
31	Return on Equity (RoE) (%) {(20/30) x 100}	Negative shareholder's funds, RoE was negative				

Appendix-19

(Refer Paragraph 3.7)

D. Working results of WBSETCL

(₹ in crore)

Sl. No.	Particulars	2017-18	2018-19	2019-20	2020-21	2021-22
1	Revenue from Operation	1,298.54	1,353.05	1,408.17	1,828.98	1,689.05
2	Other Income	50.91	72.96	64.75	56.95	43.53
3	**Total Revenue**	**1,349.45**	**1,426.02**	**1,472.92**	**1,885.94**	**1,732.58**
4	Expenses					
5	Employee Benefit Expense	239.83	213.78	284.28	326.98	378.14
6	Financial Costs	245.11	271.71	275.36	297.13	265.05
7	Depreciation & Amortization Expenses	213.11	260.59	286.91	302.52	318.05
8	Other Expenses	183.17	164.34	158.20	189.40	180.40
9	**Total Expenses**	**881.22**	**910.42**	**1,004.74**	**1,116.02**	**1,141.64**
10	Profit before extra-ordinary and prior period Items	468.23	515.60	468.18	769.91	590.94
11	Extra-ordinary and prior period Items	0.00	0.00	0.00	0.00	0.00
12	Profit/(Loss) before Tax	468.23	515.60	468.18	769.91	590.94
13	Less: Current Tax	100.49	110.88	81.80	134.52	103.25
14	Deferred Tax	0.00	0.00	0.00	0.00	0.00
15	Profit/(Loss) for The Year	367.74	404.72	386.38	635.40	487.69
16	Other comprehensive income	70.37	43.58	-26.05	26.45	91.80
17	Total Comprehensive Income for the year (15+16)	438.11	448.30	360.33	661.85	579.49
18	Current Assets	1,021.44	981.41	1,035.20	1,577.11	1,255.69
19	Current Liabilities	1,373.32	1,638.60	1,886.99	2,183.11	1,713.36
20	Current Assets Ratio (18/19)	0.74	0.60	0.55	0.72	0.73
21	**Total Debt***	**3,300.90**	**3,261.95**	**3,264.56**	**3,560.65**	**3,355.40**
22	(a) Equity	1,105.52	1,105.52	1,105.52	1,105.52	1,105.52
	(b) General reserve	2,700.95	3,125.74	3,466.68	4,116.34	4,856.85
	(c) Shareholders' Fund {22(a) + 22(b)}	3,806.47	4,231.26	4,572.20	5,221.86	5,962.37
23	Debt-Equity Ratio {21/22(c)}	0.87	0.77	0.71	0.68	0.56
24	Earning before Interest and Tax	713.34	787.30	743.53	1,067.05	855.99
25	Interest Coverage Ratio (24/6)	2.91	2.90	2.70	3.59	3.23
26	Return on Equity (RoE) (%) {17/22(c) x 100}	11.51	10.59	7.88	12.67	9.72

** Total Debt= Debt + Current Maturities of long term loan - Cash Credit Balance*

Appendix-20

(Refer Paragraph 3.9.2)

Submission of Annual Accounts by SPSEs

Sl. No.	SPSE	FS/ CFS	Financial Year of Accounts	Date of actual receipt of accounts	Scheduled date of submission of accounts to CAG	Delay in submission of accounts (in days)
1	DPL	FS	2017-18	12 October 2018	30 June 2018	104
2		FS	2018-19	24 October 2019	30 June 2019	116
3		FS	2019-20	27 November 2020	30 June 2020	150
4		FS	2020-21	6 October 2021	30 June 2021	98
5		FS	2021-22	29 July 2022	30 June 2022	29
6	WBPDCL	FS	2017-18	19 September 2018	30 June 2018	81
7		CFS	2018-19	23 September 2019	30 June 2019	85
8		FS	2018-19	23 September 2019	30 June 2019	85
9		FS	2019-20	1 December 2020	30 June 2020	154
10		CFS	2019-20	1 December 2020	30 June 2020	154
11		FS	2020-21	15 November 2021	30 June 2021	138
12		CFS	2020-21	15 November 2021	30 June 2021	138
13		FS	2021-22	16 September 2022	30 June 2022	78
14		CFS	2021-22	16 September 2022	30 June 2022	78
15	WBSEDCL	FS	2017-18	18 July 2018	30 June 2018	18
16		CFS	2017-18	18 July 2018	30 June 2018	18
17		FS	2018-19	16 September 2019	30 June 2019	78
18		CFS	2018-19	16 September 2019	30 June 2019	78
19		FS	2019-20	29 September 2020	30 June 2020	91
20		CFS	2019-20	29 September 2020	30 June 2020	91
21		FS	2020-21	20 September 2021	30 June 2021	82
22		CFS	2020-21	14 July 2022	30 June 2021	379
23		FS	2021-22	6 September 2022	30 June 2022	68
24		FS	2021-22	6 September 2022	30 June 2022	68
25	WBSETCL	FS	2017-18	30 July 2018	30 June 2018	30
26		FS	2018-19	23 July 2019	30 June 2019	23
27		FS	2019-20	5 October 2020	30 June 2020	97
28		FS	2020-21	15 September 2021	30 June 2021	77
29		FS	2021-22	8 June 2022	30 June 2022	-22

Appendix-21

(Refer Paragraph 3.9.2)

Status of pending True-up/APR Orders by WBERC

Name of Agency	FY to which APR petition relates	Scheduled date of submission of petition by the Agency	Date of submission of petition	Delay in submission of petition by Agency (in days)
(i)	(ii)	(iii)	(iv)	{v = (iv -iii)}
WBSEDCL	2017-18	30 November 2018	7 December 2018	7
	2018-19	30 November 2019	24 November 2021	725
	2019-20	30 November 2020	24 November 2021	359
	2020-21	30 November 2021	22 July 2022	234
WBPDCL	2016-17	30 November 2017	29 November 2017	-1
	2017-18	30 November 2018	5 February 2019	67
	2018-19	30 November 2019	24 November 2021	725
	2019-20	30 November 2020	14 January 2022	410
WBSETCL	2017-18	30 November 2018	11 December 2018	11
	2018-19	30 November 2019	21 June 2021	569
	2019-20	30 November 2020	21 June 2021	203
	2020-21	30 November 2021	24 November 2021	-6
DPL	2015-16	30 November 2016	29 November 2016	-1
	2016-17	30 November 2017	27 November 2017	-3
	2017-18	30 November 2018	28 January 2019	59
	2018-19	30 November 2019	28 September 2021	668
	2019-20	30 November 2020	26 November 2021	361
	2020-21	30 November 2021	26 April 2022	147

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(Refer Paragraph 3.9.4)

Status of APR Applications and Orders

Name of Agency	Date of Application	Financial year to which petition relates	Date of issue of APR order by WBERC	Date by which WBERC is required to issue order for truing up of costs for respective financial year as per APTEL direction Nov 2011	Time taken to issue the order	Delay in issuance of order beyond 120 days	Delay in issuance of order considering APTEL's order	Present date	Delay in issuance of pending orders, considering the present date, from the date of application
(i)	(ii)	(iii)	(iv)	(v)	{vi = (iv-ii)}	{vii= (vi-120}	{viii = (iv-v)}	(ix)	{x = (viii - ii)}
WBSEDCL	25 November 2016	2015-16	3 February 2022	31 March 2017	1,896	1,776	1,770		
	30 November 2017	2016-17	9 February 2022	31 March 2018	1,532	1,412	1,411		
	7 December 2018	2017-18	16 March 2022	31 March 2019	1,195	1,075	1,081		
	24 November 2021	2018-19	27 July 2022	31 March 2020	245	125	848		
	24 November 2021	2019-20	27 July 2022	31 March 2021	245	125	483		
WBSETCL	30 November 2016	2015-16	28 April 2022	31 March 2017	1,975	1,855	1,854		
	30 November 2017	2016-17	28 April 2022	31 March 2018	1,610	1,490	1,489		
	11 December 2018	2017-18	28 April 2022	31 March 2019	1,234	1,114	1,124		
	21 June 2021	2018-19	19 July 2022	31 March 2020	393	273	840		
	21 June 2021	2019-20	28 July 2022	31 March 2021	402	282	484		
	24 November 2021	2020-21	Under Process	31 March 2022	NA	NA	NA	15 September 2022	295
WBPDCL	30 November 2015	2014-15	29 May 2022	31 March 2016	2,372	2,252	2,250		
	29 November 2016	2015-16	30 May 2022	31 March 2017	2,008	1,888	1,886		
	29 November 2017	2016-17	13 July 2022	31 March 2018	1,687	1,567	1,565		
	5 February 2019	2017-18	Under Process#	31 March 2019	NA	NA	NA	15 September 2022	1,318
	24 November 2021	2018-19	Under Process	31 March 2020	NA	NA	NA	15 September 2022	295
	14 January 2022	2019-20	Under Process	31 March 2021	NA	NA	NA	15 September 2022	244
DPL	30 November 2015	2014-15	30 May 2022	31 March 2016	2,373	2,253	2,251		
	29 November 2016	2015-16	28 July 2022	31 March 2017	2,067	1,947	1,945		
	27 November 2017	2016-17	Under Process*	31 March 2018	NA	NA	NA	15 September 2022	1,753
	28 January 2019	2017-18	Under Process	31 March 2019	NA	NA	NA	15 September 2022	1,326
	28 September 2021	2018-19	Under Process	31 March 2020	NA	NA	NA	15 September 2022	352
	26 November 2021	2019-20	Under Process	31 March 2021	NA	NA	NA	15 September 2022	293

#APR order for the financial year 2017-18 related to WBPDCL was issued by WBERC on 22 September 2022.
**APR order for the financial year 2016-17 related to DPL was issued by WBERC on 14 November 2022.*

Appendix-23

(Refer Paragraph 3.10.5)

A. Admitted coal and ash handling charges

Generating Stations	Target generation (in MU)	Approved amount in tariff order (₹ in alkh)	Actual generation (in MU)	Exp. Proportionate to actual generation (₹ in lakh)	Actual exp. (₹ in lakh)	Exp. that may be admitted in APR (₹ in lakh)	Exp. disallowed (₹ in lakh)
Financial Year 2019-20							
KTPS	7,747.49	2,204.11	2,871.67	816.97	3,108.55	816.97	2,291.58
BkTPS	7,378.56	1,977.71	6,996.73	1,875.37	1,437.84	1,437.84	0.00
BTPS -I	685.15	89.05	313.22	40.71	130.81	40.71	90.10
BTPS -II	1,510.85	210.17	547.85	76.21	234.37	76.21	158.16
STPS	3,513.60	1,712.36	3,693.58	1,800.07	528.02	528.02	0.00
SgTPS-I	4,216.32	403.44	2,703.72	258.71	286.13	258.71	27.42
SgTPS-II	7,027.20	398.90	3,991.56	226.58	244.06	226.58	17.48
Total	**32,079.17**	**6,995.74**	**21,118.33**	**5,094.62**	**5,969.78**	**3,385.04**	**2,584.74**
Financial Year 2018-19							
KTPS	7,726.32	2,090.39	4,422.87	1,196.63	3,363.68	1,196.63	2,167.05
BkTPS	7,358.00	1,839.05	7,182.22	1,795.12	2,100.31	1,795.12	305.19
BTPS -I	683.28	82.81	369.81	44.82	73.36	44.82	28.54
BTPS -II	1,506.72	195.43	945.57	122.65	131.43	122.65	8.78
STPS	3,504.00	1,624.01	3,552.62	1,646.54	1,767.00	1,646.54	120.46
SgTPS-I	4,204.80	375.15	2,624.88	234.19	574.11	234.19	339.92
SgTPS-II	7,008.00	370.93	3,426.04	181.34	443.14	181.34	261.80
Total	**31,991.12**	**6,577.77**	**22,524.01**	**5,221.28**	**8,453.03**	**5,221.28**	**3,231.75**
Financial Year 2017-18							
KTPS	7,726.32	2,630.39	4,749.85	1,617.06	2,242.76	1,617.06	625.70
BkTPS	7,358.40	2,024.28	7,486.55	2,059.53	1,950.79	1,950.79	0.00
BTPS	2,870.00	888.21	1,926.04	596.07	170.23	170.23	0.00
STPS	3,504.00	2,679.81	2,941.56	2,249.67	1,575.28	1,575.28	0.00
SgTPS-I	4,204.80	197.39	2,993.88	140.54	253.43	140.54	112.89
SgTPS-II	7,008.00	517.14	3,347.76	247.04	168.12	168.12	0.00
Total	**32,671.52**	**8,937.22**	**23,445.64**	**6,909.92**	**6,360.61**	**5,622.03**	**738.58**
Grand Total	**96,741.81**	**22,510.73**	**67,087.98**	**17,225.82**	**20,783.42**	**14,228.35**	**6,555.07**

Appendix-23

(Refer Paragraph 3.10.5)

B. O&M Expenses

Generating Stations	Installed capacity (in MW)	Norms of O&M in ₹ lakh/ MW	Normative O&M exp. (₹ in lakh)	Actual exp. (₹ in lakh)	Admitted exp (₹ in lakh) (lower of normative & actual) (₹ in lakh)	Exp. Disallowed (₹ in lakh)
Financial Year 2019-20						
KTPS	1,260	16.77	21,130.20	12,911.15	12,911.15	0.00
BkTPS	1,050	13.49	14,164.50	13,554.34	13,554.34	0.00
BTPS -I	120	18.38	2,205.60	3,505.39	2,205.60	1,299.79
BTPS -II	215	16.55	3,558.25	6,280.48	3,558.25	2,722.23
STPS	500	10.44	5,220.00	7,618.50	5,220.00	2,398.50
SgTPS-I	600	8.89	5,334.00	6,568.79	5,334.00	1,234.79
SgTPS-II	1,000	6.56	6,560.00	5,683.28	5,683.28	0.00
Total	**4,745**		**58,172.55**	**56,121.93**	**48,466.62**	**7,655.31**
Financial Year 2018-19						
KTPS	1,260	16.12	20,311	15,938	15,938	0
BkTPS	1,050	12.97	13,619	16,501	13,619	2,882
BTPS -I	120	17.67	2,120	3,495	2,120	1,375
BTPS -II	215	15.91	3,421	6,262	3,421	2,841
STPS	500	10.04	5,020	6,524	5,020	1,504
SgTPS-I	600	8.55	5,130	7,320	5,130	2,190
SgTPS-II	1,000	6.31	6,310	5,378	5,378	0
Total	**4,745**		**55,930.75**	**61,417.08**	**50,625.18**	**10,791.90**
Financial Year 2017-18						
KTPS	1,260	14.94	18,824	13,441	13,441	0
BkTPS	1,050	12.03	12,632	13,093	12,632	461
BTPS	335	14.74	4,938	7,953	4,938	3,015
STPS	500	9.31	4,655	6,558	4,655	1,903
SgTPS-I	600	7.92	4,752	5,163	4,752	411
SgTPS-II	1,000	5.85	5,850	4,028	4,028	0
Total	**4,745**		**51,650.80**	**50,235.75**	**44,445.56**	**5,790.19**
Grand Total	**14,235**		**1,65,754.10**	**1,67,774.76**	**1,43,537.36**	**24,237.40**

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(Refer Paragraph 3.10.6)

Benefit on sale of surplus power

Sl. No.	Year	2017-18	2018-19	2019-20	Total
	Particulars	**Cost (₹ in lakh)**	**Cost (₹ in lakh)**	**Cost (₹ in lakh)**	**Cost (₹ in lakh)**
1	Total purchase	14,05,952.00	15,78,241.00	17,25,532.00	47,09,725.00
2	FC: Fuel cost	0.00	0.00	0.00	0.00
3	Co: Cost disallowable (restricted upto ROI)	37,236.21	37,236.21	20,332.17	94,804.59
4	A: Prior period adjustment	37,492.17	50,381.00	63,294.00	1,51,167.17
5	Less: Amount received from SLDC UI Fund	0.00	0.00	11,890.49	11,890.49
6	FC+(PPC-Co)+A (1+2-3+4-5)	14,06,207.96	15,91,385.79	17,56,603.34	47,54,197.09
7	Gross Fixed Cost requirement	6,16,873.15	5,94,643.63	7,48,453.03	19,59,969.81
8	**Total Revenue requirement (6+7)**	**20,23,081.11**	**21,86,029.42**	**25,05,056.37**	**67,14,166.90**
9	Less: Other Income	57,653.00	57,496.00	70,234.00	1,85,383.00
10	Less: Interest credit	4,159.00	8,955.31	10,075.95	23,190.26
11	Less: Withheld amount on account of undeposited terminal benefit	20,880.00	1,327.00	1,285.00	23,492.00
12	**Total deductions (9+10+11)**	**82,692.00**	**67,778.31**	**81,594.95**	**2,32,065.26**
13	Net Revenue requirement (8-12)	19,40,389.11	21,18,251.11	24,23,461.42	64,82,101.64
14	Less: Revenue already realised during financial year 2017-18	18,92,302.00	20,55,239.00	22,54,843.00	62,02,384.00
15	Balance Revenue Recoverable from consumers (13-14)	48,087.11	63,012.11	1,68,618.42	2,79,717.64
16	Balance Revenue Recoverable from consumers as per APR (see Note below)	57,112.26	80,919.83	1,74,509.34	3,12,541.43
17	Excess revenue recoverable amount, allowed by WBERC (16-15)	9,025.15	17,907.72	5,890.92	32,823.79

Note : The amount of Balance Revenue Recoverable from consumers for each financial year is the amount admiited by WBERC in the APR of that year, after excluding adjustments realting to previous financial years and including the benefits to be shared with consumers, admitted by WBERC in APR.

Appendix-25

(Refer Paragraph 3.10.8)

Short collection of MVCA

Financial Year	As per tariff orders				As per APR orders			Annual MVCA (paise/ kwh)	Subsidy provided by GoWB (Paise/ Kwh)	Shortfall of collection per unit (Paise/ Kwh)	Quanturm of power sold to consumers and licensees (MU)	Short collection of revenue (Rs. In crore)
	Quantum of power purchase (MU)	Power purchase cost (Rs. In lakh)	Average PPC per unit (paise/ Kwh)	Applied Average PPC per unit, due to non-availability of tariff order of respective year (paise/Kwh)	Quantum of power purchase (MU)	Power purchase cost (Rs. In lakh)	Average PPC per unit (paise/ Kwh)					
1	**2**	**3**	**{4=(3/2)}**	**5**	**6**	**7**	**{8=(7/6)}**	**{9=(8-4)}**	**10**	**{11=(9-10)}**	**12**	**{13=(11x12)}**
2017-18	39,798.83	13,51,278.40	339.53	339.53	37,916.76	14,05,952.00	370.80	31.27	23.00	8.27	33,592.05	277.89
2018-19	39,162.77	15,67,507.47	400.25	339.53	39,162.92	15,78,241.00	402.99	63.47	23.00	40.47	34,525.99	1,397.15
2019-20	40,035.60	15,85,625.75	396.05	339.53	41,831.36	17,25,532.00	412.50	72.97	23.00	49.97	36,741.96	1,836.00
Total												**3,511.04**

Appendix-26

(Refer Paragraph 3.10.11)

Loss of interest due to delay in release of subsidy

Name of the scheme	Financial Year	Date of release	Amount (₹ in crore)	Subsidy to be received on	Delay in receipt of subsidy (No. of days)	Rate of interest on cash credit	Loss of interest (₹ in lakh)
Up front subsidy	2021-22	5 July 2021	200.00	1 April 2021	95	8%	4.16
		17 November 2021	100.07	1 April 2021	230	8%	5.04
		24 December 2021	200.00	1 April 2021	267	8%	11.70
		15 February 2022	500.56	1 April 2021	320	8%	35.11
		9 March 2022	206.19	1 April 2021	342	8%	15.46
Total			**1,206.82**				**71.48**
Hasir Alo	2021-22	16 July 2021	71.32	1 April 2021	106	8%	1.66
		31 August 2021	35.00	1 April 2021	152	8%	1.17
		23 November 2021	35.16	1 April 2021	236	8%	1.82
		17 December 2021	67.31	1 April 2021	260	8%	3.84
		17 February 2022	114.92	1 April 2021	322	8%	8.11
Total			**323.71**				**16.59**
Grand Total			**1,530.53**				**88.06**

Appendix-27

(Refer Paragraph 4.4)

Sampled ULBs and Development Authorities

Sl. No.	Name of ULB	District	Category:	Population as per 2011 census
1	Arambagh Municipality	Hooghly	Municipality	66,175
2	Asansol Municipal Corporation	Paschim Burdwan	Corporation	11,52,443
3	Baidyabati Municipality	Hooghly	Municipality	1,21,110
4	Balurghat Municipality	Dakshin Dinajpur	Municipality	1,51,299
5	Baranagar Municipality	North 24 Parganas	Municipality	2,45,213
6	Birnagar Municipality	Nadia	Municipality	30,799
7	Bongaon Municipality	North 24 Parganas	Municipality	1,08,864
8	Budge Budge Municipality	South 24 Parganas	Municipality	76,837
9	Burdwan Municipality	Purba Burdwan	Municipality	3,14,265
10	Chandrakona Municipality	Paschim Medinipur	Municipality	23,629
11	Egra Municipality	Purba Medinipur	Municipality	30,148
12	Haldia Municipality	Purba Medinipur	Municipality	2,00,827
13	Haringhata Municipality	Nadia	Municipality	46,236
14	Jangipur Municipality	Murshidabad	Municipality	88,165
15	Jhargram Municipality	Jhargram	Municipality	61,712
16	Kamarhati Municipality	North 24 Parganas	Municipality	3,30,211
17	Kandi Municipality	Murshidabad	Municipality	55,632
18	Kolkata Municipal Corporation	Kolkata	Corporation	44,96,694
19	Kurseong Municipality	Darjeeling	Municipality	42,446
20	Mirik Notified Area Authority	Darjeeling	Notified Area	11,513
21	Old Malda Municipality	Malda	Municipality	84,012
22	Panskura Municipality	Purba Medinipur	Municipality	57,932
23	Rampurhat Municipality	Birbhum	Municipality	57,833
24	Siliguri Municipal Corporation	Darjeeling	Municipality	5,13,264
25	Titagarh Municipality	North 24 Parganas	Municipality	1,16,541
26	New Town Kolkata Development Authority (NKDA)	North 24 Parganas	Development Authority	33,161
			Total	**85,16,961**

Appendix-28

(Refer Paragraph 4.5.5)

Details of Transaction Advisors engaged

Cluster No.	ULBs in the cluster	No. of ULBs in the Cluster	Transaction Advisor	Work order No and date	Stipulated date of completion	Tendered Amount	Amount paid to Transaction Advisor	Percentage of payment made to the transaction advisors
I	Dum Dum, North Dum Dum, South Dum Dum, Baranagar, Kamarhati and New Barrackpore	6	Ernst & Young	SUDA-227/2018/1898 dt. 12.02.2019	07 June 2019 (115 days)	₹ 28,93,684.00	₹ 17,07,276.00	59.00
II	NewTown, NDITA, Bidhannagar MC and Ward of KMC adjoining Bidhannagar MC	3	PwC Pvt Limited	SUDA-227/2018/1899 dt. 12.02.2019	-do-	₹ 28,93,684.00	₹ 3,41,454.00	11.80
III	Ashoknagar-Kalyangarh and Habra	2	Ernst & Young	SUDA-227/2018/1898 dt. 12.02.2019	-do-	₹ 28,93,684.00	₹ 17,07,276.00	59.00
IV	Baidyabati, Uttarpara-Kotrung, Rishra, Serampore, Champadani, Konnagar, Dankuni and Bhadreswar	8	Ernst & Young	SUDA-227/2018/1898 dt. 12.02.2019	-do-	₹ 28,93,684.00	₹ 17,07,276.00	59.00
V	Asansol Municipal Corporation	1	KMPG Advisory Services Pvt. Limited	SUDA-227/2018/5510 dt. 13.08.2019	06 December 2019 (115 days)	₹ 28,93,684.00	₹ 3,41,454.00	11.80
VI	Durgapur Municipal Corporation	1	KMPG Advisory Services Pvt. Limited	SUDA-227/2018/5510 dt. 13.08.2019	-do-	₹ 28,93,684.00	₹ 3,41,454.00	11.80
VII	Panihati, Titagarh, Khardah, Barrackpore, North Barrackpore and Garulia	6	KMPG Advisory Services Pvt. Limited	SUDA-227/2018/5510 dt. 13.08.2019	-do-	₹ 28,93,684.00	₹ 3,41,454.00	11.80
VIII	Kalyani, Gayeshpur, halishahar, Haringhata and Kanchrapara	5	PwC Pvt Limited	SUDA-227/2018/5509 dt. 13.08.2019	-do-	₹ 28,93,684.00	₹ 3,41,454.00	11.80
IX	Ranaghat, Birnagar, Taherpur NAA and Coopar's Camp	4	PwC Pvt Limited	SUDA-227/2018/5509 dt. 13.08.2019		₹ 28,93,684.00	₹ 3,41,454.00	11.80
X	Krishnanagar,Nabdwip and Santipur	3	PwC Pvt Limited	SUDA-227/2018/5509 dt. 13.09.2019		₹ 28,93,684.00	₹ 3,41,454.00	11.80
		39				**₹ 2,89,36,840.00**	**₹ 75,12,006.00**	

(Source:- State Urban Development Agency)

Appendix-29

(Refer Paragraph 4.6.5)

Estimated Loss of revenue

Sl. No	ULB	No of Households	Average population on the basis of households, considering four persons per household	Conservancy charge collectable during the period 2018-22 @₹ 0.50 per capita per day (in₹)	Conservancy charge imposed/ collected (in₹)	Loss of revenue (in ₹)
	(i)	(ii)	(iii) = (ii) x 4	(iv) = (iii) x ₹0.50 x 365 x 4	(v)	(vi) = (iv) – (v)
1	**Haringhata**	12,641	50,564	3,69,11,720	0	3,69,11,720
2	**Titagarh**	33,042	1,32,168	9,64,82,640	0	9,64,82,640
3	**Panskura**	13,497	53,988	3,94,11,240	0	3,94,11,240
4	**Egra**	9,262	37,048	2,70,45,040	0	2,70,45,040
5	**Budge Budge**	20,478	81,912	5,97,95,760	0	5,97,95,760
6	**Balurghat**	48,528	1,94,112	14,17,01,760	0	14,17,01,760
7	**Kandi**	22,245	88,980	6,49,55,400	0	6,49,55,400
8	**Baidyabati**	39,900	1,59,600	11,65,08,000	0	11,65,08,000
9	**Rampurhat**	22,320	89,280	6,51,74,400	0	6,51,74,400
10	**Kamarhati**	93,036	3,72,144	27,16,65,120	0	27,16,65,120
11	**AMC**	2,97,733	11,90,932	86,93,80,360	0	86,93,80,360
12	**Mirik**	3,337	13,348	97,44,040	0	97,44,040
13	**Arambag**	19,189	76,756	5,60,31,880	0	5,60,31,880
14	**Baranagar**	82,462	3,29,848	24,07,89,040	0	24,07,89,040
15	**Birnagar**	7,200	28,800	2,10,24,000	0	2,10,24,000
16	**Bangaon**	33,450	1,33,800	9,76,74,000	0	9,76,74,000
17	**Burdwan**	92,226	3,68,904	26,92,99,920	0	26,92,99,920
18	**Chandrakona**	7,708	30,832	2,25,07,360	0	2,25,07,360
19	**Haldia**	62,259	2,49,036	18,17,96,280	0	18,17,96,280
20	**Jangipur**	23,078	92,312	6,73,87,760	0	6,73,87,760
21	**Jhargram**	22,703	90,812	6,62,92,760	0	6,62,92,760
22	**Kurseong**	6,580	26,320	1,92,13,600	0	1,92,13,600
23	**Old Malda**	19,047	76,188	5,56,17,240	0	5,56,17,240
24	**Siliguri MC**	1,45,428	5,81,712	42,46,49,760	0	42,46,49,760
25	**KMC**	12,23,535	48,94,140	3,57,27,22,200	0	3,57,27,22,200
26	**NKDA**	33,161	1,32,644	9,68,30,120	0	9,68,30,120
	Total	**23,94,045**	**95,76,180**	**6,99,06,11,400**	**0**	**6,99,06,11,400**

Appendix-30

(Refer Paragraph 4.7.1)

Estimated rate of increase in waste generation

Sl. No.	ULB	Projected Generation of Solid Waste 2021 (in TDP)	Projected Generation of Solid Waste 2031 (in TDP)	Rate of annual increase in waste generation estimated
		‘P’	‘A’	‘R’
1	Kamarhati	177	230	2.60
2	Baranagar	130	164	2.35
3	Titagarh	47	54	1.39
4	Bangaon	50	62	2.17
5	Budge Budge	34	41	1.88
6	Haringhata	26.75	31.31	1.58
7	Biranagar	14.64	17.51	1.80
8	Jhargram	25	33	2.81
9	Haldia	125	206	5.12
10	Chandrakona	9	12	2.91
11	Egra	12	17	3.54
12	Panskura	25	33	2.81
13	Burdwan	175	223	2.45
14	Baidyabati	50	66	2.81
15	Arambagh	30	38.4	2.49
16	Rampurhat	40	50	2.25
17	Old Malda	66.34	101.01	4.29
18	Kandi	24.90	29.70	1.77
19	Balurghat	68	87	2.49
20	Jangipur	39.71	50.37	2.40
21	Kurseong	17.28	23.64	3.18
22	Mirik	4	5.03	2.31
23	KMC*	5,239	5,890	1.17
24	SMC	359	496	3.28
25	AMC	811	1,120	3.28

**KMC's projected Period for Solid Waste Generation 2023-33*

Formula used for calculating the Rate of annual increase (i.e. ‘R’) in waste generation estimated

$A = P (1 + R / 100)^{10}$

$P = [(A/\Pi)^{1/10} - 1] \times 100$

Appendix-31

(Refer Paragraph 4.9.2)

List of 46 works of construction of processing facilities for solid waste

Sl. No.	Work_Name	ULB	Work Order Date	Time allowed in addition to 10 years for O&M (in months)	Status of work as of November 2022
1	Design, Build, Finance, Operate and Transfer of Municipal Wet Waste processing facility based on composting and /or Bio-methanation technology, setting up Semi-Automatic Material Recovery Facility for Dry Waste and construction of Sanitary Landfill (as per required size) along with operation & maintenance for 10 years (Renewable) under SBM	Alipurduar Municipality	31-03-2022	6	ongoing
2		Arambag Municipality	08-04-2022	6	ongoing
3		Balurghat Municipality	12-04-2022	6	ongoing
4		Bankura Municipality	12-04-2022	6	ongoing
5		Bansberia Municipality	18-05-2022	6	ongoing
6		Barasat Municipality	08-04-2022	12	ongoing
7		Barrackpore Municipality	31-03-2022	6	ongoing
8		Baruipur Municipality	18-05-2022	6	ongoing
9		Bashirhat Municipality	22-04-2022	6	ongoing
10		Berhampore Municipality	13-06-2022	9	ongoing
11		Bangaon Municipality	12-04-2022	6	ongoing
12		Budge Budge Municipality	31-03-2022	6	ongoing
13		Burdwan Municipality	07-04-2022	12	ongoing
14		Chakdah Municipality	22-04-2022	6	ongoing
15		Chandannagar Municipality	21-03-2022	6	ongoing
16		Coochbehar Municipality	08-04-2022	6	ongoing
17		Dhulian Municipality	12-04-2022	6	ongoing
18		Domkal Municipality	12-04-2022	6	ongoing
19		Durgapur Municipality	14-06-2022	12	ongoing
20		Garulia Municipality	12-04-2022	6	ongoing
21		Gayeshpur Municipality	08-04-2022	6	ongoing
22		Halisahar Municipality	31-03-2022	6	ongoing
23		Hooghly-Chinsurah Municipality	13-06-2022	6	ongoing
24		Islampur Municipality	31-03-2022	6	ongoing
25		Jalpaiguri Municipality	31-03-2022	6	ongoing
26		Jhargram Municipality	12-04-2022	6	ongoing
27		Kalyani Municipality	31-03-2022	6	ongoing
28		Kancharapara Municipality	18-05-2022	6	ongoing
29		Kharagpur Municipality	09-03-2022	9	ongoing
30		Khardah Municipality	31-03-2022	6	ongoing
31		Madhyagram Municipality	21-03-2022	9	ongoing
32		Maheshtala Municipality	07-04-2022	12	ongoing

Sl. No.	Work_Name	ULB	Work Order Date	Time allowed in addition to 10 years for O&M (in months)	Status of work as of November 2022
33		Medinipur Municipality	18-05-2022	6	ongoing
34		Murshidabad Municipality	31-03-2022	6	ongoing
35		Nabadwip Municipality	21-03-2022	6	ongoing
36		Naihati Municipality	21-03-2022	9	ongoing
37		Panskura Municipality	12-04-2022	6	ongoing
38		Raiganj Municipality	21-03-2022	9	ongoing
39		Rajpur-Sonarpur Municipality	08-04-2022	12	ongoing
40		Rampurhat Municipality	12-02-2022	6	ongoing
41		Ranaghat Municipality	08-04-2022	6	ongoing
42		Santipur Municipality	21-03-2022	6	ongoing
43		Siliguri Municipality	20-04-2022	12	ongoing
44		Suri Municipality	08-04-2022	6	ongoing
45		Titagarh Municipality	31-03-2022	6	ongoing
46		Uluberia Municipality	21-03-2022	9	ongoing

(Source: Work Orders issued by SUDA)

Appendix-32

(Refer Paragraph 4.11.2)

Achievements against service level benchmarks

Sl. No.	Name of the ULB	Benchmark Value, if any stipulated by the ULB for 2021-22	Household level coverage of SWM services through door-to-door collection of waste	Efficiency of collection of municipal solid waste	Extent of segregation of waste	Extent of recovery of waste collected	Extent of scientific disposal of waste at landfill sites	Efficiency in redressal of customer complaints	Extent of cost recovery for the ULB in SWM services	Efficiency in collection of SWM charges
Benchmark value as per MoUD			**100%**	**100%**	**100%**	**80%**	**100%**	**80%**	**100%**	**90%**
Benchmark value as of March 2022 or (2021-22)										
1	AMC	NA	16.53 *	94.24*	0*	0*	0*	Data not furnished	0.81*	100
2	Haringhata	NA	0 *	0*	0*	0*	0	Data not furnished	0*	No bill raised *
3	Titagarh	NA	97.41*	96.15	28.42*	0*	0	Data not furnished	Data not furnished	Data not furnished
4	Panskura	NA	70.29*	19.60	Data not furnished	0*	0*	Data not furnished	0 *	No bill raised *
5	Egra	NA	67*	80.45	Data not furnished .	Data not furnished	0*	Data not furnished	0*	No bill raised *
6	Budge Budge	NA	7.84*	80.64	Data not furnished	Data not furnished	0	Data not furnished	Data not furnished	Data not furnished
7	Balurghat	NA	29*	89.33	Data not furnished	Data not furnished	0	Data not furnished	Data not furnished	Data not furnished
8	Kandi	NA	16*	92.60*	16*	0 *	0*	Data not furnished	1.26*	98*
9	Baidyabati	NA	90*	90*	100*	48.90*	100*	Data not furnished	13*	Data not furnished
10	Rampurhat	NA	86	81	Data not furnished.	Data not furnished	Data not furnished.	Data not furnished	Data not furnished.	Data not furnished

Sl. No.	Name of the ULB	Benchmark Value, if any stipulated by the ULB for 2021-22	Household level coverage of SWM services through door-to-door collection of waste	Efficiency of collection of municipal solid waste	Extent of segregation of waste	Extent of recovery of waste collected	Extent of scientific disposal of waste at landfill sites	Efficiency in redressal of customer complaints	Extent of cost recovery for the ULB in SWM services	Efficiency in collection of SWM charges
Benchmark value as per MoUD			**100%**	**100%**	**100%**	**80%**	**100%**	**80%**	**100%**	**90%**
11	Kamarhati	NA	71*	87*	6.50*	Data not furnished	0*	Data not furnished	0.77*	100*
12	Mirik	NA	28*	95.24*	0*	0*	0*	Data not furnished	0*	No bill raised *
13	Birnagar	NA	Data not furnished	Data not furnished	Data not furnished	Data not furnished	Data not furnished	0%	Data not furnished	Data not furnished
14	Baranagar	NA	100	93	Not maintained	Not available	Not available	Mechanism not introduced	1.12%	Data not ascertained
15	Bangaon	NA	80.72	100	12.50%	88.89 (only for model ward no 16 & 18)	0	0	No such data maintained	No such data maintained
16	Arambagh	NA	74.45	36.80	11.91	11.91	0	0	0.19	0
17	Burdwan	NA	82.3	96.15	5.71	0	0	100	0	0
18	Kurseong	NA	Not provided	Not provided	0	0	0	76.92	14.14	0
19	Old Malda	NA	11 (as on Dec 2021)	80.54 (as on Dec 2021)	11.78	0	0	0	0	0
20	Jangipur	NA	99.50	94.10	0	0	0	0	0	0
21	Haldia	NA	Not provided	Not provided	Not provided	Not provided	Not provided	0	3.36	Not provided
22	Jhargram	NA	19.82	84.70	0	0	0	0	0.46	100
23	Chandrakona	NA	27.76	40.61	Segregation not done	0	0	0	0	0.11
24	SMC	NA	100	97	0	0	0	100	12.29	100
25	KMC	NA	100	90	19	13	-	92.89	41.44	-

(Source: Form IV submitted by ULBs to State Government.)

Note: **As per replies furnished by ULBs*

Glossary of Abbreviations

Glossary of Abbreviations

Abbreviation	Full Form
ACS	Average Cost of Supply
ADM	Additional District Magistrate
ALDC	Area Load Despatch Centre
AoC	Award of Contract
APC	Auxiliary Power Consumption
APO	Annual Plan of Operations
APR	Annual Performance Review
APTEL	Appellate Tribunal for Electricity
ARDD	Animal Resources Development Department
ARR	Annual Revenue Requirement
AS	Accounting Standard
AT&C	Aggregate Technical and Commercial
BE	Budget Estimates
BL&LRO	Block Land & Land Reforms Officer
BLC	Boat License Certificate
BMW	Bio-Medical Waste
BNHS	Bombay Natural History Society
BoD	Board of Directors
BPDR	Bengal Public Demand Recovery
BTR	Buxa Tiger Reserve
C&D	Construction and Demolition
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CAR	Current Asset Ratio
CBD	Comention of Biological Diversity
CBO	Community Based Organisation
CC	Cash Credit
CCF	Chief Conservator of Forest
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMD	Chairman and Managing Director
CMO	Chief Mining Officer
CPCB	Central Pollution Control Board
CPHEEO	Central Public Health & Environmental Engineering Organisation
CPU	Central Processing Unit
CR	Conservation Reserve
CSS	Centrally Sponsored Schemes
CTO	Consent to Operate
CWLW	Wildlife & Chief Wildlife Warden
CZA	Central Zoo Authority
DA	Development Authorities

Abbreviation	Full Form
DCA	Detailed Compliance Audit
DDUGJY	Deen Dayal Upadhyay Gram Jyoti Yojana
DEIAA	District Environment Impact Assessment Authority
DER	Debt-Equity Ratio
DFO	Divisional Forest Officer
DGPS	Differential Global Positioning System
DL	Daily Labour
DL&LRO	Districts Land & Land Reforms Officer
DLIC	District Level Implementation Committee
DLRS	Director Land Records & Survey
DM	District Magistrate
DMF	District Mineral Foundation
DMM	Directorate of Mines & Minerals
DoP	Department of Power
DPR	Detailed Project Report
DRC	Distribution Reform Committee
DTR	Distribution Transformer
EC	Environment Clearance
EC	Environmental Certificate
ECC	Effective Permissible Carrying Capacity
EDC	Eco-Development Committee
EDER	Eastern Duars Elephant Reserve
EIA	Environment Impact Assessment
EP	Environment Protection
EPT	Elephant Proof Trench
ER	Elephant Reserve
ESZ	Eco-Sensitive Zone
FCA	Fuel Cost Adjustment
FD	Field Director
FOR	Forum of Regulators
FPC	Forest Protection Committee
FPPCA	Fuel & Power Purchase Cost Adjustment
FR	Forest Range Officer
FY	Financial Year
GCR	Garpanchakot Conservation Reserve
GCV	Gross Calorific Value
GIS	Geographical Information System
GoWB	Government of West Bengal
GPS	Global Positioning System
ha	Hectares
HEAL	Human & Environment Alliance League
HEC	Human-Elephant Conflict
HoFF	Head of Forest Force
HWC	Human-Wildlife Conflict
HWC-NAP	National Human-Wildlife Conflict Mitigation Strategy and Action Plan

Abbreviation	Full Form
HWI	Human wildlife Interaction
IAS	Inasive Allen Species
IC&E	Industry, Commerce and Enterprise
ICR	Interest Coverage Ratio
IDEA	Interactive Data Extraction & Analysis
IDWH	Integrated Development of Wildlife Habitat
IEX	Indian Energy Exchange
IND AS	Indian Accounting Standard
IPDS	Integrated Power Development Scheme
ISWMP	Integrated Solid Waste Management Project
IUCN	International Union for Conservation of Nature
JFMC	Joint Forest Management Committee
JLRC	Join Land Reforms Commissioner
JPV	Joint Physical Verification
KMC	Kolkata Municipal Corporation
KMDA	Kolkata Metropolitan Development Authority
L&LR and RR&R	Land and Land Reforms and Refugee Relief and Rehabilitation
LAC	Local Advisory Committee
LGBR	Load Generation Balance Report
LoI	Letter of Intent
LTML	Long Term Mining Leases
MC	Management Capacity
MC	Minerals Concession
MCD	Mineral Conservation and Development
MD	Managing Director
MER	Mayurjharna Elephant Reserve
MFCA	Monthly Fuel Cost Adjustment
MHEP	Manngdechhu Hydro Electric Project
ML	Mining Lease
MLP	Master Layout Plan
MM	Mines and Minerals
MMDR	Mines and Minerals (Development and Regulation)
MO	Mining Officers
MoEF	Ministry of Environment and Forest
MoEF&CC	Ministry of Environment, Forests and Climate Change
MoU	Memorandum of Understanding
MoUD	Ministry of Urban Development
MP	Management Plan
MSW	Municipal Solid Waste
MSWM	Municipal Solid Waste Management
MT	Metric Tonne
MVCA	Monthly Variable Cost Adjustment
MVS	Mobile Veterinary Service
MYT	Multi Year Tariff
NBAP	National Biodiversity Action Plan

Abbreviation	Full Form
NGO	Non-Government Organization
NGT	National Green Tribunal
NH	National Highway
NP	National Park
NTCA	National Tiger Conservation Authority
NTP	National Tariff Policy
NVNP	Neora Valley National Park
NWAP	National Wildlife Action Plan
ORSAC	Odisha Space Application Centre
PAF	Plant Availability Factor
PAs	Protected Areas
PCCF	Principal Chief Conservators of Forest
PDL	Packed Daily Labour
PE	Primary Education
PF	Protected Forest
PLF	Peaking Plant Load Factor
PL	Prospecting Licence
PM	Post Mortem
PNZHP	Padmaja Naidu Himalayan Zoological Park
POR	Prosecution Offence Report
PPA	Power Purchase Agreement
PPC	Power Purchase Cost
PPE	Personal Protective Equipment
PSA	Power Sale Agreement
PT&P	Power Trading & Procurement
PTC	Power Trading Corporation
PTC	Pedal Tri-Cycle
PW	Public Works
RA	Regulatory Asset
RDSS	Revamped Distribution Sector Scheme
RE	Rural Employment
RoE	Return on Equity
RP	Reconnaissance Permit
RR	Regulatory Receivable
SBM-U	Swachh Bharat Mission-Urban
SBR	Sundarban Biosphere Reserve
SBWL	State Board for Wild Life
SDG	Sustainable Development Goal
SDL&LRO	Sub- Divisional Land & Land Reforms Officer
SEIAA	State Environment Impact Assessment Authority
SERC	State Electricity Regulatory Commission
SgTPS	Sagardighi Thermal Power Station
SHPC	State High Powered Committee
SHR	Station Heat Rate
SLAB	State Level Advisory Body
SLB	Service Level Benchmarking

Abbreviation	Full Form
SLF	Sanitary Land Fill
SNP	Singalila National Park
SOC	Specific Secondary Fuel Oil Consumption
SOP	Standard Operating Procedure
SPCB	State Pollution Control Board
SPSE	State Public Sector Enterprise
SR	Surface Rent
STML	Short Term Mining Leases
STR	Sundarbans Tiger Reserve
STU	State Transmission Utility
SUDA	State Urban Development Agency
SWM	Solid Waste Management
TCP	Tiger Conservation Plan
TL	Transmission Loss
TPD	Tons Per Day
TR	Tiger Reserve
UAV	Unmanned Aerial Vehicle
UDAY	Ujwal DISCOM Assurance Yojana
UHV	Useful Heat Value
ULB	Urban Local Body
VCBC	Vulture Conservation Breeding Centre
VRP	Village Relocation Proposal
WBDMF	West Bengal District Minerals Foundation
WBERC	West Bengal Electricity Regulatory Commission
WBMDTCL	West Bengal Mineral Development and Trading Corporation Ltd
WBMM	West Bengal Minor Mineral
WBMMA	West Bengal Minor Mineral (Auction)
WBMMC	West Bengal Minor Mineral Concession
WBMMR	West Bengal Minor Minerals Rules
WBMPIMTS	West Bengal Minerals (Prevention of Illegal Mining, Transportation and Storage)
WBPCB	West Bengal Pollution Control Board
WBPSFRS	West Bengal Power Financial Restructuring Scheme
WBSEB	West Bengal State Electricity Board
WBSEDCL	West Bengal State Electricity Distribution Company Limited
WBSFDA	West Bengal State Forest Development Agency
WBSPCB	West Bengal State Pollution Control Board
WBSRDA	West Bengal State Rural Development Agency
WBZA	West Bengal Zoo Authority
WCCB	Wildlife Crime Control Bureau
WII	Wildlife Institute Of India
WLS	Wildlife Sanctuary
WPA	Wildlife Protection Act
WR	Water Rate
WWF	World Wildlife Fund
ZMP	Zonal Master Plan
ZP	Zila Parishad

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