

## Chapter II

### Compliance Audit Paragraphs of State Government Departments

#### Forest and Wildlife Department

#### *2.1 Implementation of preventive and mitigative measures in respect of Human Wildlife Conflict*

##### 2.1.1 Introduction

Human Wildlife Conflict (HWC) is generally defined as any interaction between humans and wildlife that results in negative impacts on social, economic, or cultural life of humans; on the conservation of wildlife populations; or on the environment<sup>3</sup>. It includes loss of cultivated crops, livestock, property such as houses; transmission of zoonotic diseases; and loss of lives/injuries to both humans and animals. The increase in human population and demand for lands had led to encroachment of forest lands resulting in fragmentation and loss of wildlife habitats. Also, climate change, invasive species, unplanned developments, monoculture plantations, *etc.*, alter the natural habitats of wild animals. These are leading to shortage of food and water, which force the wild animals to move out to human settlements in search of food and water. Also, increase in area under cultivation around wildlife habitats, especially crops attracting wild animals; increase in population of certain species like tiger, wild boar, peafowl, *etc.*, increases the likelihood of HWCs. Thus, HWC is largely a human-induced phenomenon, combined with species-specific behavioural ecology of animals and external environment factors.

The Forest and Wildlife Department (the Department) is responsible for the protection and maintenance of forest and wildlife in the State. Kerala has 11,524.91 sq.km of forests, out of which 3,441.21 sq.km (30 *per cent*) is under protected area which includes six National Parks, 18 Wildlife Sanctuaries and one Community Reserve.

As part of promoting co-existence between humans and wildlife, the Department undertakes various preventive and mitigative measures to reduce HWCs. This includes identification of high degree conflict areas and creating conflict intensity area maps, identification and eviction of encroachments, erecting fencing, trenches and walls along forest fringes, wildlife habitat management by ensuring water, forage and removal of invasive species, paying compensation to the victims of HWC, crop insurance, relocation and rehabilitation support *etc.*

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<sup>3</sup> World Wide Fund for Nature.

### **2.1.2 Organisational setup**

The Additional Chief Secretary to the Government is the administrative head of the Department at Government level. The Department is headed by the Principal Chief Conservator of Forests (Head of Forest Force) who is assisted by the Principal Chief Conservator of Forests & Chief Wildlife Warden, and the Principal Chief Conservator of Forests (Social Forestry) at Headquarters.

The Department consists of 15 Circles<sup>4</sup> with 79 Divisions and 205 ranges. Twenty-five Territorial Divisions under the five Circles in Territorial Wing and 11 Wildlife Divisions under three Circles in Wildlife Wing initiates and implements creative action in mitigating the problem of HWC.

### **2.1.3 Audit Objectives**

To examine whether,

- the Department had adequately implemented measures for protecting, strengthening and enhancing the wildlife habitats in the State including prevention and eviction of encroachments and there exists a mechanism to monitor its effectiveness;
- the preventive and mitigative measures for handling HWCs were effectively implemented;
- post HWC measures like payment of compensation and rehabilitation support was adequate to work towards creating a sustainable and harmonious relationship between humans and wildlife; and
- co-ordination with all stakeholders was ensured at all stages for benefits and achievement of intended outcomes.

### **2.1.4 Audit Criteria**

The audit criteria were derived from:

- Wildlife (Protection) Act (WPA), 1972.
- Kerala Forest Act (KFA), 1961 and rules made thereunder.
- National Forest Policy (NFP), 1988.
- National Wildlife Action Plan (NWAP), 2017-31.
- Kerala Rules for Payment of Compensation to Victims of Attack by Wild Animals, 1980 (Kerala Compensation Rules, 1980).
- Kerala Forest Statistics (KFS), 2017 to 2021.
- Reports/studies of Central/State Government/agencies.

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<sup>4</sup> Territorial-05, Wildlife-03, Vigilance-02, Social Forestry-03, Working Plan-01, Training-01.

### 2.1.5 Scope and methodology of Audit

Audit was conducted from July to December 2021 and May to November 2022 covering the period from 2017-18 to 2021-22 by test check of the records of the Government/Department including 11 forest divisions<sup>5</sup> (out of 36 Divisions) selected through Stratified Random Sampling using IDEA software, collecting information from other Departments for cross verification and conducting Joint Physical Verification (JPV) along with the Department staff, wherever necessary.

An entry conference was held on 11 August 2022 in which the audit objectives, audit criteria, scope and methodology were discussed with the representatives of the Government and the Department. The exit conference with the representatives of the Government and the Department was held on 17 February 2023 to discuss the audit findings.

### 2.1.6 Status of Human Wildlife Conflict

There were large scale losses to human life and property as well as wildlife as detailed below:

#### 2.1.6.1 Loss of human life and property

The details of loss of human life and property are collected from the Forest Divisions and compiled in the Kerala Forest Statistics<sup>6</sup>. According to the data during the period 2017-21, there were 29,798 cases of HWCs reported, including 445 human deaths. Wayanad North division with 6,161 cases (12.48 per cent) has the highest number of claims received from HWC victims. The details are given in **Table 2.1**.

**Table 2.1: Details of loss of human life and property due to HWC**

| Year of incident     | Human death | Human injury | Cattle loss  | Crop & Property damage <sup>§</sup> | Total (in numbers) | Division with highest number of cases (per cent of cases)* |
|----------------------|-------------|--------------|--------------|-------------------------------------|--------------------|--|
| 2017-18              | 119         | 846          | 561          | 5,703                               | 7,229              | Wayanad North<br>(12.48 per cent)                          |
| 2018-19              | 146         | 765          | 348          | 6,631                               | 7,890              |  |
| 2019-20              | 92          | 699          | 321          | 5,550                               | 6,662              |  |
| 2020-21 <sup>#</sup> | 88          | 988          | 400          | 6,541                               | 8,017              |  |
| <b>Total</b>         | <b>445</b>  | <b>3,298</b> | <b>1,630</b> | <b>24,425</b>                       | <b>29,798</b>      |  |

\* based on the number of claims received from HWC victims during the period 2017-22

<sup>#</sup> Kerala Forest Statistics data for 2022 was not available

<sup>§</sup>number of applications received against crop or property damage

(Source: Kerala Forest Statistics 2017-21)

<sup>5</sup> Eight territorial divisions namely Thiruvananthapuram, Ranni, Marayoor, Malayattoor, Palakkad, Mannarkkad, South Wayanad, Kannur and three Wildlife Divisions namely Periyar East, Parambikulam and Wayanad Wildlife .

<sup>6</sup> Statistical data collected and compiled by the Statistics Wing of Forest Department relevant to the forest and wildlife management in the State.

The animal-wise details of HWC cases are given in **Table 2.2** below:

**Table 2.2: Major animal-wise details of cases during 2017-21**

| Animal-wise incidents | Human death | Human injury | Cattle loss | Crop & Property damage | Total (in numbers) | Division with highest number of cases (per cent of cases)* |
|-----------------------|-------------|--------------|-------------|------------------------|--------------------|--|
| Elephant              | 78          | 159          | 196         | 13,092                 | 13,525             | South Wayanad (17.47 per cent)                             |
| Wild boar             | 19          | 515          | 31          | 5,572                  | 6,137              | Kannur (12.05 per cent)                                    |
| Snake                 | 338         | 2,505        | 76          | 0                      | 2,919              | Kannur (26.83 per cent)                                    |
| Tiger                 | 5           | 12           | 447         | 213                    | 677                | Wayanad WL (37.83 per cent)                                |
| Leopard               | 0           | 2            | 556         | 31                     | 589                | Mannarkkad (18.95 per cent)                                |
| Wild gaur             | 1           | 9            | 5           | 161                    | 176                | Marayoor (25.90 per cent)                                  |

\* based on the number of claims received from HWC victims during the period 2017-22

(Source: Kerala Forest Statistics 2017-21)

As seen from table above, the highest number of HWC incidents occur due to elephant attacks. Hence, protection from elephants is to be considered for any HWC prevention and mitigation plan. Wild boar attacks result in second highest (20.60 per cent) number of HWCs and are mostly noticed in areas far away from forest fringes. Despite the measures taken by the Government and Department over the years, the incidents of HWCs have remained persistently high. The reasons for these high incidents of HWCs has been analysed in **Paragraph 2.1.7** of this Report.

#### **2.1.6.2 Loss of wildlife**

Movement of wild animals out of forest areas in search of food and water leads to injury and unnatural death of wild animals. The details of unnatural deaths are reported to GoI through the Kerala Forest Wildlife Death Reporting Portal. The details concerning deaths in respect of some major wild animals mentioned in Schedule I of the WPA 1972 are given in **Table 2.3**.

**Table 2.3: Details of unnatural death of wild animals**

| Year         | Elephants | Leopard   | Tiger    | Gaur/Indian bison |
|--------------|-----------|-----------|----------|-------------------|
| 2017-18      | 0         | 4         | 0        | 0                 |
| 2018-19      | 8         | 2         | 1        | 5                 |
| 2019-20      | 10        | 1         | 0        | 6                 |
| 2020-21      | 11        | 2         | 1        | 3                 |
| 2021-22      | 6         | 3         | 0        | 3                 |
| <b>Total</b> | <b>35</b> | <b>12</b> | <b>2</b> | <b>17</b>         |

(Source: Data from Kerala Forest Wildlife Death Reporting Portal)

The total number of unnatural deaths reported during the audit period was 662 out of which 223 deaths (33.69 per cent) were due to electrocution, 170 deaths (25.68 per cent) due to vehicle hit, 146 deaths (22.05 per cent) due to hunting/poaching, etc. Out of this, offence cases under WPA 1972 were registered in 280 cases. The details in respect of injured wild animals are not recorded in the State.

### Audit findings

The failure of the Department to protect and maintain wildlife habitats is leading to fragmentation and loss of wildlife habitats and consequent increase in HWCs. Audit verified the aspects that led to fragmentation and loss of wildlife habitats such as encroachments, diversion and unplanned developments, monoculture plantations, slow identification of elephant corridors, cattle grazing, invasive species, non-ensuring of food and water availability, etc. The effectiveness of preventive and mitigative measures taken by the Department such as construction and maintenance of preventive structures, Kumki elephant squads, early warning SMS alert system, fixing of radio collars on problematic animals, management of population, vista clearance, SARPA app, relocation of human settlements in forest lands, etc., were checked. The post HWC measures including compensation payment to HWC victims were verified for its economy, adequacy, timeliness, etc. Audit also observed the necessity for co-ordination with various stakeholders like Local Self Government Institutions, Revenue, Tourism and Agriculture Departments, local people, etc., to reduce the HWCs.

Thus, the audit findings were broadly grouped under four categories, viz., management of wildlife habitats (*Paragraph 2.1.7*), preventive and mitigative measures (*Paragraph 2.1.8*), post HWC measures (*Paragraph 2.1.9*) and co-ordination with all stakeholders (*Paragraph 2.1.10*).

#### 2.1.7 Management of wildlife habitats

**Failure of the Department to prevent the diversion of forest lands for non-forest purposes, protect the wildlife habitats from encroachments, unplanned development projects, etc., and maintain wildlife habitats by securing elephant corridors, removal of invasive species, ensuring food and water availability, etc., are the major reasons leading to HWCs in the State.**

As per NWAP 2017-31, the primary causes of HWC include the loss, degradation and fragmentation of many wildlife habitats, thereby increasing the chances of Asian elephants and many other wild animals moving out of natural habitat and encountering people. The lapses noticed in the management of wildlife habitats are mentioned below:

##### 2.1.7.1 Absence of carrying capacity studies of wildlife habitats

The carrying capacity of an environment is the maximum population size of a biological species that can be sustained by that specific environment, given the food, habitat, water and other resources available. Carrying capacity study is required to effectively manage the wildlife habitat in the State and thereby avoid HWCs.

It was observed that the Department has not conducted any carrying capacity studies of the wildlife habitats in the State.

#### **2.1.7.2 Large scale diversion of forest lands for non-forest purposes**

As per Department records 11,524.91 sq.km, which constitute around 29.66 per cent of the area of the State (38,863 sq.km.), is forest. Audit observed that 21.81 per cent (2,513.53 sq.km.) of this land is diverted for non-forest purpose and is generally not suitable for wildlife habitat. The major reasons are as follows:

- monoculture plantations (1,562.04 sq.km.) consisting of teak, acacia, eucalyptus, wattle, etc., having poor wildlife habitat (**Paragraph 2.1.7.7**);
- lease of land to Kerala State Electricity Board Limited (KSEBL), plantation activities of Public Sector Undertakings (PSUs) as well as private plantations, etc. (514.90 sq.km.);
- diversion under the Forest Conservation Act, 1980 (384.12 sq.km.) mainly for various projects of KSEBL, Irrigation Department, plantation activities of both private parties and PSUs, resettlement of people from project affected locations, pre 01 January 1977 encroachments<sup>7</sup>, etc.;
- post 01 January 1977 encroachments (50.25 sq.km., **Paragraph 2.1.7.4**);
- *pattas*<sup>8</sup> issued by Revenue Department in 2.22 sq.km of forest land in three Divisions<sup>9</sup>.

Apart from this, vested forests are isolated disjointed bits of forests mainly acquired by Government for cultivation purpose, and hence not suitable for wildlife habitation, especially wild elephants.

**Case Study 1: Fragmentation of forests in Wayanad District** - Wayanad district had the highest number of HWC claims in the State during the audit period. As per the Management Plan of Wayanad Wildlife Sanctuary, forest land of Wayanad district in 1950 was 1,811.35 sq.km which was reduced to 863.86 sq.km in 2021. There is a reduction of 947.49 sq.km forest with corresponding increase in area under plantation, cultivation, etc., leading to fragmentation of the once continuous vegetation cover.

Government reply (March 2023) is in acceptance of the Audit observation and it was stated that measures were taken up in right earnest for restoration of plantations to natural forests.

The measures for restoration of plantations were, however, not effective as Audit noticed several deficiencies as commented in **Paragraph 2.1.7.7**.

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<sup>7</sup> As per the Kerala Land Assignment (Regularisation of Occupation of Forest Lands prior to 01.01.1977) Special Rules, 1993 (KLA Special Rules 1993).

<sup>8</sup> The first and original record about the ownership of a property.

<sup>9</sup> Marayoor (0.88 sq.km), Mannarkkad (0.80 sq.km), Malayattoor (0.53 sq.km).

### 2.1.7.3 Unplanned development leading to increase in HWCs

Intrusion of humans and their activities into wildlife habitats are the prime reason for increase in HWCs. As per the NFP 1988, diversion of forest land for any non-forest purpose should be subject to the most careful examination by specialists from the standpoint of social and environmental costs and benefits.

Three development projects of the State which adversely impacted or have potential to adversely impact the HWC situation are as discussed below.

#### ➤ **Construction of NCC Airstrip adjacent to Periyar Tiger Reserve**

Kerala PWD started constructing an airstrip in 2017 for NCC cadets' flying training, in land under the possession of the Forest Department and only 630m from the Periyar Tiger Reserve boundary. The Chief Conservator of Forests (Wildlife), Kottayam reported (October 2021) to PCCF that the project was initiated without conducting Environmental Impact Assessment (EIA) and obtaining necessary environment clearances. The operation of the airstrip will affect the soundscape of the area which is rich in biodiversity including flagship species like elephant and tiger. This would further increase the HWCs. The Department failed to inform the Government in time about the conservation significance and adverse impact on wildlife. Only in October 2021, when the project was almost completed, the Department informed<sup>10</sup> the Government of the required clearances and the likely adverse impact on environment.

#### ➤ **Setting up of Indian Institute of Technology (IIT) campus in Palakkad**

A new IIT was set up in Palakkad district for which 500 acres of land was earmarked in 2015. The land included 18.14 ha of vested forest land, which had elephant presence and was part of Nilambur elephant reserve. As a result of this, elephant herds are frequent visitors to the campus as revealed in a JPV conducted along with Department Officials in September 2021. The elephants frequently damaged the boundary wall of the campus, the likely reason being to access water from the ponds located inside the campus. The Department had failed to timely inform the Government regarding the adverse impact on HWC due to the location of the project.



**Figure 2.1:** Elephant herds at under construction IIT campus Palakkad (September 2021)

<sup>10</sup> vide letter of PCCF(FM) dated 28 October 2021 addressed to the Principal Secretary to the Government, Forests and Wildlife Department.

➤ **Rehabilitation of landless tribals in Aralam Farm**

Aralam Farm having an extent of 7,000 acres of prime forest had been converted into the Central State Farm, Aralam for promoting agriculture in the region. Out of this, a total of 3,375 acres of land adjacent to the Aralam wildlife sanctuary was distributed to 1,500 tribal families by GoK, and the remaining area retained as Aralam Farming Corporation (Kerala) Ltd. (PSU). The tribal families residing in the region have been constantly troubled due to elephant visits. About 40 wild elephants are reported to spend most of their time within the farmland and it has become their habitat. During 2014-22, thirteen people were killed due to elephant attack.

The absence of proper planning and impact studies prior to starting development projects in the vicinity of forests have led to adverse effect on the wildlife habitats and consequent increase in HWCs.

As per the reply submitted by Government (March 2023), the natural Elephant corridors has been destroyed due to unplanned development of resorts, minor eco-tourism, trekking paths for entering people into forests, *etc.* It was further reiterated that the concerned Nodal Officers nominated for HWC issues shall be directed to look into the points observed and suggested by Audit.

The reply is, however, silent on the issues observed by Audit on the three development projects mentioned above.

**2.1.7.4 Failure of Department to evict/arrest encroachments**

Human encroachment on forests not only reduces the wildlife habitat but also increases the chances of HWCs. Identification of forest boundaries and demarcating the same using cairns/*jundas*<sup>11</sup> is significant to prevent encroachments.

As per Kerala Forest Statistics data as on 31 March 2021, 1,605.30 ha of area is under encroachment in the 10 selected Divisions, *i.e.*, except Parambikulam Tiger Reserve. Audit observed that this was underreported by 382.50 ha due to non-inclusion of encroachments in Malayattoor (28.50 ha) and Wayanad Wildlife Divisions (354 ha). Additionally, during the period from 2018 to 2021 encroachments had increased by 476.32 ha<sup>12</sup> in seven selected Divisions as detailed in **Appendix 4**. This indicates that the area under encroachment is increasing, and the actual extent of encroachment may be higher than reported.

Out of the total forest area of 4,537.752 sq.km coming under the eleven selected Divisions (eight Territorial Divisions and three Wildlife Divisions), notification is pending in respect of 54.134 sq.km. Out of a boundary length of 3,866.43 km, demarcation is pending for 513.13 km (13.27 *per cent*) as of 31 March 2021. In Malayattoor division, due to delay in demarcating the forest boundaries using

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<sup>11</sup> A mound of stones, earth, cement, *etc.*, built in the shape of a frustum of pyramid to mark boundaries of forest.

<sup>12</sup> Thiruvananthapuram (0.59 ha), Ranni (0.61 ha), Malayattoor (26.87 ha), Wayanad South (49.60 ha), Kannur (39.64 ha), Periyar East (4.38 ha), Wayanad wildlife (354.63 ha).



*jundas*, 28.50 ha of land out of 52.48 ha taken over by the Forest Department from Agriculture Department in 1980 was encroached.

Thus, the failure of the Department to timely complete the demarcation of forest boundaries and preventing encroachments is leading to fragmentation and degradation of wildlife habitats and consequent increase in HWCs.

Government replied (March 2023) that the Department is systematically verifying the data and efforts shall be taken to evict encroachments from notified forest land. In respect of demarcation of boundaries, it was stated that all vulnerable areas for encroachment are demarcated on priority basis. However, the balance consolidation of forest boundaries is not completed because of people's defense which leads to various court cases.

#### **2.1.7.5 Shortcomings in ensuring water and food availability within the forest**

The Department had identified ensuring food and water availability in the forest as one of the solutions to reduce HWC. The major habitat improvement activities undertaken by the Department to ensure food and water availability includes maintenance of *Vayals*<sup>13</sup>, construction and maintenance of check dams/ponds, growing fruit bearing trees, growing indigenous species, gully plugging, etc.

Following lapses were noticed in this regard:

- *Vayals* and grasslands are among the prime habitats of herbivores. The details of grassland and *vayals* were documented only in one<sup>14</sup> out of the eight test-checked territorial divisions.
- During 2017-22, as per performance budget of the Department, activities to ensure water in forest such as gully plugging, soil and moisture conservation, construction and maintenance of pond, check dams, waterholes were carried out in territorial and wildlife divisions. But during 2018-19, 2019-20, 2020-21 and 2021-22, the targets could not be achieved. Also, activities to ensure forage such as planting of indigenous species or fruit bearing trees and *vayal* maintenance in forest was done only under wildlife divisions.

Due to lack of habitat improvement works carried out, especially under territorial divisions, raids of wild animals like elephants in fringe areas could not be reduced.

Government assured (March 2023) that action would be taken to review the position and emphasis given on improving the wildlife habitat in territorial forest divisions and forest fringe areas also.

#### **2.1.7.6 Invasive species affecting wildlife habitats**

The Kerala Eco-restoration Policy, 2021 observes that the proliferation of invasive species has led to depletion of natural forests. The depleted habitats are forcing wild animals to stray out to human habitations and farmlands for food and forage, thus

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<sup>13</sup> *Vayals* are low altitude marshy grasslands with perennial availability of water and grass.

<sup>14</sup> Ranni division.

reportedly compounding HWCs. Eradicating such invasive species that harm the environment is of high priority.

It was observed that:

- In 2017-18, out of the total 2,556 ha of weed removal work carried out by the Department, only 73 ha belonged to territorial divisions. During 2018-19 and 2019-20, weed removal work was carried out only in wildlife divisions. However, the territorial and wildlife division-wise split up was not available in 2020-21 and 2021-22.
- *Senna Spectabilis (senna)*<sup>15</sup> was first planted as shade trees in the office compound at Muthanga in 1986. In 2012, *senna* had occupied 14.56 sq.km of the Wayanad WLS and as of 2020, it had spread to 78.91 sq.km (23 per cent of the total area of sanctuary). The intensity and extent of *senna* invasion in the sanctuary is alarmingly high and the regeneration of native species is almost absent in areas where there is abundance of *senna*<sup>16</sup>.



**Figure 2.2:** *Senna Spectabilis* invasion in Wayanad Wildlife Sanctuary (November 2021)

- During JPV (08 December 2021) conducted in Thondiyyar Section of Thekkady under Periyar East Division, the presence of several plants of *senna* was observed by the Audit team. The presence and weeding of *senna* was not part of the Division's management plan.
- As per the India State of Forest Report 2021, 490 sq.km of forest land in Kerala is covered with five major invasive species<sup>17</sup>. *Senna* does not feature in this report as an invasive species.

Government replied (March 2023) that removal of obnoxious species including invasive species affecting wildlife habitat is being taken up under Rebuild Kerala Development (RKD) project to reduce conflict.

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<sup>15</sup> It is a deciduous tree native to South and Central America. Due to its high rate of growth and arresting the growth of indigenous trees and grass species, it has become an invasive species in parts of Kerala, especially Wayanad WLS.

<sup>16</sup> Study by FERNS Nature Conservation Society and the Department.

<sup>17</sup> *Chromolaena odorata* (362 sq.km.), *Lantana camara* (87 sq.km.), *Ageratum conyzoides* (29 sq.km.), *Ageratum odenophora* (9 sq.km.), *Mikania micrantha* (3 sq.km.).

The reply however lacked specifics on containing the *senna* menace.

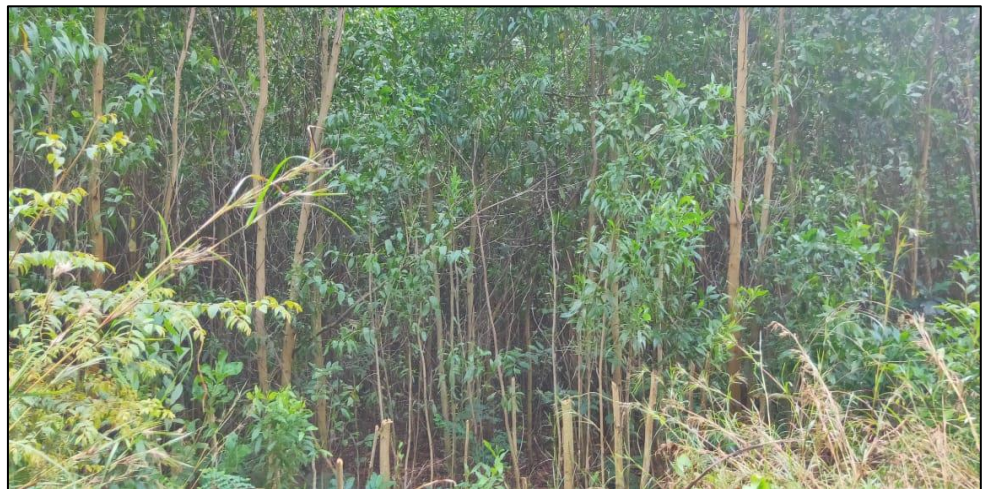
**2.1.7.7 Unscientific conversion of forest land to monoculture plantations affecting water and fodder availability**

As per NFP 1988 (item 4.3.3), exotic species should not be introduced, through public or private sources, unless long-term scientific trials undertaken by specialists in ecology, forestry and agriculture have established that they are suitable and have no adverse impact on native vegetation and environment.

The Department had a policy of converting 'low value' grasslands into plantations and extensive planting of non-native species like eucalyptus and wattle. These species became invasive over a period and started invading the grasslands and shola forests. These plantations have led to reduction in area of grasslands, loss of prime area of foraging of herbivores and adversely affected the hydrological functions of the grass land which in turn increased loss of soil moisture. The reduction in area of grassland destroys the wildlife habitat of elephants and other herbivores animals and forces them to come out of the forest in search of food and water.

Ultimately, the Department stopped planting of wattle since 1995, acacia and eucalyptus since 2018 and the working plans of all territorial divisions prescribed phased re-conversion of wattle, eucalyptus, acacia plantations to natural forest. But comparing the data in Kerala Forest Statistics 2016 and 2021 revealed that, as on 31 March 2021, the plantation area of acacia auriculiformis and wattle has increased by 1,245.09 ha and 836.95 ha respectively instead of reducing.

It was further seen that in three acacia plantations under Thiruvananthapuram division, eco-restoration work was carried out by planting other species like medicinal plants (4.16 ha) in Peringamala section in 2010; and bamboo (4.18 ha) and miscellaneous species (49.4 ha) in Bharathanoor section in 2017. During JPV (26 August 2021) it was observed that the replanted species growth was suppressed by acacia in many areas. This points towards gaps in the planning, implementation and monitoring of the eco-restoration work in the acacia plantations.



**Figure 2.3:** Bamboo plants suppressed by growth of erstwhile acacia plants which were cut and removed in Peringamala forest section under Thiruvananthapuram division

Government stated (March 2023) that acacia, eucalyptus and wattles were planted for supplying raw materials to various industries in public sector. Now, State had formulated eco-restoration policy and the exotic plants will be removed in a phased manner, so as to ensure availability of water and fodder for wild animals and improving its habitat. The reply is silent on the observation made by Audit on the increase in exotic plantation area, and failure of eco-restoration project, and any future plan of action to resolve the issue.

**2.1.7.8 Slow progress in securing elephant corridors**

Elephant corridors (ECs) are linear, narrow, natural habitat linkages that allow elephants to move between secure habitats without being disturbed by humans. The procedure involves identification of the corridors, securing them by acquiring land and making it constraint free and finally notification of the same as forest land. Protecting and securing the ECs was identified as a long-term measure to reduce HWC.

The Right to Passage Report, 2005 (RPR 2005) and Gajah Report 2010 identified four ECs in the State and presently, the Department had identified nine ECs. Out of these nine ECs identified, only the corridor at Thirunelli-Kudrakote was fully established. In respect of others, ECs were yet to be established.

The present status of these corridors are as follows:

**Table 2.4: Details of identified Elephant Corridors**

| Sl. No. | Name of the corridor (Year of identification)                  | Division under which the corridor falls                         | Corridor     |             | Present status   | Remarks  |
|---------|--|---|--------------|-------------|--|--|
|         |  |   | Length in km | Width in km |  |  |
| 1       | Kottiyoor- Periya (1996)                                       | Kannur, Wayanad (N)   | 3            | 0.1         | Out of 97.38 ha only 29.59 ha of land acquired.                                  | Land acquisition in slow progress  |
| 2       | Begur- Brahmagiri (2005)                                       | Wayanad WLS with Brahmagiri WLS & Nagarhole TR (Karnataka)      | 1            | 0.8         | Land to be acquired; area not ascertained  | Land not acquired due to non-availability of fund                              |
| 3       | Nilambur –Appankappu (2017)                                    | Nilambur North & South Divisions                                | 0.4          | 0.5         | Land to be acquired  |  |
| 4       | Periya at Pakranthalam (2019)                                  | Wayanad (N)   | 0.5          | 0.2         | Land to be acquired  |  |
| 5       | Thirunelli-Kudrakote (2005)                                    | Wayanad (N)   | 6            | 1 to 1.5    | Fully acquired and notified  | Nil  |
| 6       | Nilambur Kovilakam-New Amarambalam (2017)                      | Nilambur North & South Divisions                                | 1            | 0.5         | No acquisition required.   | Not notified – Forest land leased out to Plantation Corporation of Kerala Ltd. |
| 7       | Mudumalai – Nilambur via O’ Valley (Ouchterlony Valley) (2017) | Nilambur North Forest Division and Mudumalai Tiger Reserve (TN) | 35           | 0.1         | No acquisition needed on the Kerala side. Status in Tamil Nadu is not available. | Not notified   |

| Sl. No. | Name of the corridor (Year of identification) | Division under which the corridor falls | Corridor     |             | Present status            | Remarks |
|---------|---|---|--------------|-------------|---------------------------|---------|
|         |   |   | Length in km | Width in km |                           |         |
| 8       | Shanamangalam–Padiri (2021)                   | Wayanad (N)                             | -            | -           | Studies to be carried out | Nil     |
| 9       | Aryankavu (2021)                              | Thenmala Division                       | -            | -           | Studies to be carried out | Nil     |

(Source: Details furnished by the Department)

Among the pending eight ECs, there are frequent visits of elephants in three ECs (Begur - Brahmagiri, Nilambur – Appankappu, Periya at Pakranthalam). This situation underscores the importance of timely identification and acquisition of land for ECs.

The timely identification and providing hindrance free routes for the elephants would lead to reduction in HWC not only in that particular location but also in adjoining areas.

Government replied (March 2023) that action shall be expedited to complete the identification and acquisition of already identified corridors and new corridors if any.

**Case study 2: Not securing ECs in Chinnakanal – Mathikettan area in Udumbanchola Taluk in Idukki district:-** The area is home to a population of about 28 elephants, which are mostly confined to this area due to the availability of food and proximity to water from the Anayirangal dam. However, their habitat is heavily impacted by anthropogenic activities and the corridors facilitating their movement to other forest areas like Mathikettan Shola and Devikulam have been affected by land-use changes and the elephant population becoming increasingly disconnected from other habitats. Since 2005, there have been 34 human deaths, 179 property damages, 90 crop damages, *etc.*, due to elephant attacks. Additionally, seven wild elephants have died due to unnatural causes since 2010.

#### **2.1.7.9 Habitat intrusion through cattle grazing in forest lands**

Grazing inside forest causes habitat degradation as it affects the forage availability for the wildlife and leads to straying of animals into human habitations. It would also lead to spread of zoonotic diseases due to interactions between wild animals, humans and livestock. As per the NFP 1988, grazing and browsing in forest areas need to be controlled.

As per Section 3 of the Kerala Forest (Grazing) Rules, 1985, no person shall be allowed to graze his cattle in the reserve forests without obtaining proper permit for the purpose from the competent authority, *i.e.*, the Range Officer or any other officer authorised by him after realisation of prescribed fees. Exception is given only to tribals living inside forest area. Further, the Rules stipulate the action to be initiated (like impounding of cattle) against unauthorised grazing, grazing seasons and fees, *etc.*

Even though the management/working plans of all the selected Divisions recorded the negative effects of grazing in forest lands which includes forest degradation,

soil erosion, contagious diseases, *etc.*, the Department has not provided any information about the directions issued to control the grazing, permits issued to graze, grazing fees collected, *etc.*

During JPV, cattle grazing was observed in forest land under four<sup>18</sup> out of 11 Divisions visited. In Wayanad district where the incidence of HWC is high, as per Department data<sup>19</sup>, around 80 *per cent* of the estimated 10,000 cattle in the District graze in the forests.

Despite identifying grazing as a serious issue leading to increase in HWCs, the Department is struggling to manage and/or prevent illegal grazing in forest lands effectively.

Government replied (March 2023) that instructions are given from time to time through concerned supervisory authorities during Senior Forest Officers' meetings held regularly to strictly follow the Rules, Management Plan and Working Plan.

The reply does not give any information on directions issued to control grazing, permits issued to graze and grazing fees collected, and grazing is continuing unabated despite the best efforts claimed by the Government.

**Recommendations:**

- *Adequate steps should be initiated by the Department for eviction and prevention of encroachments, restoration of monoculture plantations to natural forests, relocation of forest settlements, to avoid fragmentation and degradation of forests.*
- *The Department should ensure effective wildlife habitat management by providing adequate resources to wild animals in order to retain them within the forest boundaries.*
- *Government should ensure that the entire boundary length of the notified area is clearly demarcated.*

**2.1.8 Preventive and mitigative measures to handle HWCs**

**Lapses in construction and maintenance of preventive structures, wildlife population management, radio collar and SMS alert system, vista clearance, *etc.*, were leading to HWCs.**

Human-wildlife conflicts can be challenging to manage, but there are preventive and mitigative measures that can be taken to reduce the risk of such incidents. The preventive and mitigative measures undertaken by the Department were verified and the lapses observed in this regard are mentioned below:

**2.1.8.1 Preventive structures against HWC involving elephants**

Wild elephants not only cause multiple damages such as human death/ injury, crop loss, property damage, *etc.*, but also its presence creates fear and affect social life.

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<sup>18</sup> Palakkad (16 September 2021), Malayattoor (30 September 2021), South Wayanad (27 October 2021), Wayanad wildlife (02 November 2021).

<sup>19</sup> Expert sub-group's report on addressing issues related to human wildlife interaction in Kerala submitted to State Planning Board in November 2021.

Preventive structures have a major role in reducing conflicts with wild elephants. Traditional solar fencing is the most cost effective and widely used preventive structure. Elephant proof trenches, elephant proof walls, rail fences and crash guard fences also play a significant role in reducing HWC. The existing preventive structures covers a total length of 2,994.92 km<sup>20</sup>.

Various lapses noticed in the construction and maintenance of preventive structures against elephants are discussed below:

➤ **Operation of Electric Fences without the approval of Electrical Inspectorate**

An electric fence is a barrier that uses electric shocks to deter animals from crossing its boundaries. It typically consists of a series of wires or conductive elements that are connected to a power source, such as a battery or an AC outlet. When an animal touches the fence, they complete an electrical circuit, which delivers a painful but non-lethal electric shock. The shock is intended to train the animal from attempting to cross the barrier.

Department uses solar power fences to prevent entry of wild animals, especially elephants, into fringe areas and private parties use mains operated and/or battery operated fences to protect their property from wild animal attacks. Based on the direction of Honourable High Court of Kerala, the Power Department, GoK issued a circular<sup>21</sup> (December 2010) directing that all officers of the GoK should ensure that there are no unauthorised electric fences in operation anywhere in the State. Accordingly, Electrical Inspectorate issued guidelines dated 17 November 2011 for installation of electric fence energiser to avoid danger to the life of human beings and animals. The approval of Electrical Inspectorate was required for the installation and operation of electric fences. The following issues were noticed in the installation of electric fence:

- Though solar fences were installed in all the Divisions, approval of Electrical Inspectorate was not obtained thus resulting in violation by the Forest Department.

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<sup>20</sup> Solar power fence - 2,348.14 km, Elephant-proof trench - 511.22 km, Elephant-proof wall - 66.26 km, Crash guard rope fence - 32.40 km, *Kayyala* (short walls created by locally available earth and stones) - 15.12 km, Rail fence - 10 km, Hanging fence - 9.70 km, Steel structures with spikes - 1.88 km and Bio-fence - 0.20 km as per Expert sub group's report on addressing issues related to human wildlife interaction in Kerala submitted to State Planning Board in November 2021.

<sup>21</sup> No.8096/B2/10/PD dated 17 December 2010.

- A total of 223 wild animals were electrocuted due to electric fences during 2017-22. This included 17 elephants, which was 49 per cent of the total unnatural elephant deaths. Out of this, one occurred at solar fence installed by the Department in Wayanad Wildlife Sanctuary. This indicates that the fences with irregular specifications were installed which proved fatal for the elephants.



**Figure 2.4:** Death of an elephant due to electrocution at Anakkalu, Malampuzha under Palakkad Division (November 2021)

- The Department does not have details of and/or control over the electric fences operated by private parties.

Though solar/electric fences are effective methods to prevent intrusion of wild animals into human habitats, the haphazard use of the same and installation of fences without approval of Electrical Inspectorate has led to death of wild animals and blocking of regular path of movement. Further, non-obtaining of approval of Electrical Inspectorate has also resulted in violation by the Forest Department.

In the Exit Meeting (February 2023), the PCCF admitted that the solar electrical fencing is blocking the movement of wild animals and only in few areas private parties are approaching Forest Department for instructions on installation of fences.

➤ **Absence of regular maintenance of Solar Power Fences**

Solar Power fences are successful only if it encircles human habitats to prevent the wildlife from entering the habitats. They require scrupulous daily maintenance like clearing vegetation near the fence on a regular basis, rectification of damages, if any, *etc.*, to ensure sufficient electric shock.

Audit noticed the following lapses in respect of solar fencing:

- In three selected Divisions, where data on solar fences was available, 93.91 km<sup>22</sup> out of the total 306.09 km of installed solar fences were not functional.
- During JPV conducted (August to December 2021) in 15 locations<sup>23</sup> coming under the selected Divisions along with officers from the Department, Audit noticed the following:

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<sup>22</sup> Mannarkkad (35.28 km), Palakkad (10.63 km), Malayattoor (48.00 km).

<sup>23</sup> Edavam in Palode range under Thiruvananthapuram division, Bimaram in Ranni range and Aakkemon Vadasserikara range under Ranni division, Karayoor sandal reserve and Vettukadu of Kanthloor range under Marayoor division, Mekkappala range and Palavanpadi in Vadattupara range under Malayattoor division, Dhoni in Olavakkod range and 53 quarry in Walayar range under Palakkad division, Thiruvizhamkunnu in Mannarkkad division, Pulpally and Irulam in South Wayanad division, Kurichiat in Wayanad wildlife, Kottiyoor in Kannur division, Thondiyar in Vallakadavu range under Periyar East division.



- ❖ Solar fences in eight locations<sup>24</sup> were non-functional.
- ❖ In four locations<sup>25</sup>, vegetation under the solar fences were not cleared.



**Figure 2.5:** Non-maintained solar fence - Vadattupara in Malayattoor division (30 September 2021)



**Figure 2.6:** Non-functioning solar fence - Bimaram in Ranni range (23 September 2021)

➤ **Lapses in maintenance of elephant-proof trenches and elephant-proof walls**

Elephant-proof trench (EPT) and elephant-proof wall (EPW) were envisaged to prevent entry of wild elephants into fringe areas. The EPTs require regular maintenance as these get damaged and/or filled up by the deposit of earth material due to action of animals, landslides, people, rainfall, *etc.* It was seen that:

- Out of nine selected Divisions in which EPTs were constructed, JPV was conducted (September to December 2021) in four locations in four Divisions<sup>26</sup> along with Department officials, and noticed non-maintenance of EPTs in all the four locations.
- Out of six selected Divisions in which EPWs were constructed, JPV was conducted (September to November 2021) in three locations in three

<sup>24</sup> Karayoor sandal reserve and Vettukadu of Kanthaloore range under Marayoor division, Mekkapala and Vadattupara in Malayattoor division, Ranni and Vadasserikara in Ranni division, Walayar in Palakkad division, Thondiyar in Vallakadavu range under Periyar East division.

<sup>25</sup> Edavam in Palode range under Thiruvananthapuram division, Bimaram in Ranni range under Ranni division, Dhoni in Olavakkod range under Palakkad division, Palavanpadi in Vadattupara range under Malayattoor division.

<sup>26</sup> Thondiyar section under Vallakadavu range of Periyar East division, Dhoni forest section under Olavakkod range of Palakkad division, Aralam farm under Kottiyoor range of Kannur division and Kuppadi forest station under Kurichiyad range of Wayanad wildlife division.

Divisions along with Department officials, and noticed damaged/non-maintained EPWs in two locations<sup>27</sup>.

The breach of EPT or EPW even at a single point would make it ineffective in the entire location. Hence, regular maintenance of EPT and EPW was required to prevent HWCs.



**Figure 2.7:** Damaged EPT - Periyar East Division (08 December 2021)



**Figure 2.8:** Damaged EPT - Wayanad wildlife division (27 October 2021)



**Figure 2.9:** Damaged EPW- Aralam Wildlife Sanctuary (16 November 2021)

➤ **Non-implementation of sanctioned fencing projects**

The number of cases of wildlife attack has been showing an increasing trend over the years. Timely implementation of HWC prevention projects was required to reduce the losses. One project for the benefit of farmers to protect agricultural crops from the attack of wild animals, viz., ‘Krishi Raksha Padhathi (KRP)’ and two projects to reduce HWCs, viz., construction of EPT and EPW

<sup>27</sup> Chelakolly in Chedleth range of South Wayanad division, Aralam farm under Kottiyoor range of Kannur division.

in Attappady and Agali ranges of Mannarkkad Division under Integrated Tribal Development Project (ITDP) and construction of crash guard fencing in Chedleth, Kalpetta and Meppady range of South Wayanad division were not implemented due to inadequate planning, absence of proper studies, procedural delays, etc., as detailed in *Appendix 5*. It is observed that:

- Out of a total 34,814 crop loss claims received during 2017-22, 27,133 claims were approved as on 23 December 2022, and an amount of ₹19.16 crore was paid as compensation. The timely implementation of the KRP would have reduced the crop losses due to HWCs and the compensation claims.
- There were 13 human deaths due to wild elephant attacks during the period from July 2020 to April 2022 in Attappady and Agali range, out of which 10 were tribal people.

Government replied (March 2023) that all the points observed in the report relating to ensuring effective preventive measures shall be looked into and remedial action will be taken.

#### **2.1.8.2 Other measures to reduce HWCs due to elephant attacks**

Other than preventive structures, Department use various other measures like *Kumki* elephant squad, tranquilisation and translocation, SMS alert system, etc., to reduce HWCs caused by elephants.

##### **➤ Formation of elephant squad - shortage of *Kumki* elephants**

In 2014, Department identified necessity of formation of elephant squads for reducing HWC. *Kumki* elephants are the trained elephants that are necessary for driving back the elephants straying into human habitations. In August 2017, Department decided to set up *Kumki* squad with 10 elephants. On finding that *Kumki* elephants are effective in reducing HWC, in February 2019 it was decided to train 20 elephants as *Kumki* elephants. The training period required for training a *Kumki* was three months.

Presently, Department has 11 *Kumki* elephants, out of which six are undergoing training and one of them is injured. Hence, effectively only four of them are fit for being used as *Kumki* elephants. Also, the *Kumki* elephants are generally stationed in Palakkad and Wayanad divisions and hence their service is restricted to these Divisions. These limited the effectiveness of using elephant squads.

Government replied (March 2023) that action would be taken to train the eligible and suitable elephants available with the Department for training them as *Kumki* elephants and utilize their services in HWC issues effectively. Further progress awaited.

##### **➤ Non-functioning SMS alert system**

SMS alert system was found to be effective in reducing the HWC in Tamil Nadu and West Bengal as reported in the HEC guidelines issued by MoEF in 2017.

The Department had installed (March 2017) early warning SMS alert system in 35 locations under eight<sup>28</sup> selected forest divisions. But the SMS alert system was not functional in any of the selected Divisions.

Government stated (March 2023) that action will be taken to review the SMS Alert system and make them functional and to utilize it effectively.

➤ **Non-fixing of radio-collars on problematic elephants**

Section 12 of the WPA 1972 permits scientific management of wild animals including translocation of any wild animals to an alternative suitable habitat, or population management of wildlife, without killing or poisoning or destroying any wild animals. The MoEF had issued guidelines (February 2005<sup>29</sup>) for submitting proposals for seeking permission for capturing problematic elephants which includes recommendation from a team of experts with Chief Wildlife Warden (CWW) as Convenor and a MoEF nominee.

Radio Collars can be used to track the problematic elephants and alert the farmers about their movements. For fixing the radio collars, the elephants should be captured with prior permission from the Central Government.

The Divisional Forest Officer (DFO) Palakkad had identified three problematic elephants and had requested<sup>30</sup> for permission to tranquilise and radio collar them. The DFO Palakkad had purchased three radio collars at a cost of ₹5.63 lakh in October 2018 which was sanctioned subsequently by CWW in November 2018. But till date (January 2023), no permission from the Central Government has been received and no radio collars were fixed.

The Department had failed to take necessary action to procure permission from the Central Government to capture the problematic elephants and fix radio collars. Timely radio collaring of the problematic animals could have helped in early warning of its presence thereby reducing the HWC.

The radio collars were purchased prior to getting permission to capture the problematic elephants from Central Government and these are now kept idle for more than four years in the office of the DFO, Palakkad.

Despite the above, in July 2021, the Department further proposed to purchase eight more radio collars.

The Government replied (March 2023) that radio collars available with the Department shall be used for monitoring problematic wild elephants when situation arise and on considering its necessity.

The reply is silent on the procedural lapses in purchasing the radio collars, and the idling of three radio collars in the office of the DFO, Palakkad, for more than four years.

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<sup>28</sup> Thiruvananthapuram, Marayoor, Malayattoor, Palakkad, Mannarkkad, South Wayanad, Wayanad wildlife and Kannur.

<sup>29</sup> vide letter No. 7-5/2000(PE) dated 08 February 2005.

<sup>30</sup> vide letter No. E2-5713/16 dated 29 August 2018.

### **2.1.8.3 Absence of effective strategy to deal with HWCs caused by wild boar, monkeys and peafowl**

Wild boars, monkeys and peafowl are prolific breeders and according to the Department their population have increased. The shortage of food and water in forests, attractive crops and garbage in human habitations, absence of natural predators (peafowl), *etc.*, are the possible reasons for their spreading to forest fringe areas and even far away human habitations leading to HWCs. The number of HWC claims received during 2017-22 due to wild boar attacks was 10,433 (including 21 human deaths) and that of monkey menace was 7,819.

- In respect of wild boar, the Department, using the powers vested under Section 11(1)(b) of WPA 1972, issued orders to cull problematic wild boars. During the period from June 2020 to May 2022, 2,395 wild boars were killed. From June 2022 onwards<sup>31</sup>, the power to cull problematic wild boars was handed over to LSGIs.
- Problematic monkeys were captured and relocated.

Audit observed that these were only short term measures and no long term effective strategy was implemented by the Department to keep these wild animals within the forest area. Also, in respect of peafowl no strategy was devised by the Department.

### **2.1.8.4 Slow progress in relocation of human settlements under Wayanad Relocation Project**

Relocation of families was identified as one of the long term mitigation measures to reduce HWC. There were 107 settlements, having 2,613 households within the boundaries of the Wayanad Wildlife Sanctuary. Due to increase in HWC, there was a demand from the inhabitants to relocate them. Accordingly, the Department submitted a project proposal for voluntary relocation of 800 families from 14 settlements under the Wayanad Relocation Package Phase I which was approved by GoI under Centrally Sponsored Scheme (CSS) and fund allocated by GoI during different periods starting from 2011.

Out of 14 settlements selected for relocation under Phase I, only eight settlements with 147 households were completely rehabilitated. In two<sup>32</sup> settlements, 174 households out of 283 have been rehabilitated, and no rehabilitation has happened in four<sup>33</sup> settlements.

It is observed that the project has been delayed by more than 10 years, and the delay was attributed to shortage of funds, delay in registration of land, procedural delays, delay in sanctioning of Central/State funds, *etc.*

Thus, purpose of creating an inviolate area for wildlife conservation was not achieved and the area continues to experience HWCs.

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<sup>31</sup> GO(Rt)No.239/2022/F&WLD dated 31 May 2022 to be read with GO (MS) No.29/2022/F&WLD dated 28 May 2022.

<sup>32</sup> Kurichiad, Chettiyalathur.

<sup>33</sup> Pambankolly, Manimunda, Pankalam, Kolott.

Government replied (March 2023) that the delay in implementing the project was due to meager relocation package provision and recently there has been increase in the package. The reply is not acceptable as the HWCs are continuing in the region and the Government has not fixed any timeline to complete the project.

#### ***2.1.8.5 Absence of vista clearance to minimise human encounters with wild animals***

Vista clearance is the activity of clearing vegetation along roadside and around human habitations to have a clear view of areas and avoid HWC. It is especially useful in areas of frequent human visitations including regular trek routes used by forest staff, public roads passing through the forest, roads leading to human settlements, etc.

Three instances on absence of vista clearance leading to HWC cases are discussed below:

- In Wayanad wildlife division, five instances of vehicle hit wild animal deaths, viz., one elephant, one leopard, two spotted deer, one gaur, were noticed. Death of a tiger close to road was also reported as per the offence cases register. These cases occurred in three road reaches<sup>34</sup>. Audit conducted (09 November 2021) a JPV in the portion of Sulthan Bathery – Pulpally road that passes through forest area and noticed absence of vista clearance. This would severely affect the on-road visibility and could lead to vehicle hit death of wild animals.



**Figure 2.10:** Vista clearance not done – Sulthan Bathery – Pulpally road under Wayanad wildlife division



**Figure 2.11:** Vista cleared road under South Wayanad division of the same road

- In Walayar range under Palakkad division, four elephant deaths<sup>35</sup> were reported due to train hit during the audit period. The frequency of vista clearance along the railway track which was done twice a year was observed to be inadequate, and this was suggested to be increased to a minimum of four per year in the meeting held between Railway and Forest Department on 10 August 2022.
- During JPV conducted (16 November 2021) at Aralam farm in Kannur division, absence of vista clearance was noticed in the roads passing through the farm. Eleven human deaths were reported in Aralam farm during 2014-22 due to wild elephant attacks.

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<sup>34</sup> Sulthan Bathery - Pulpally road, Mananthavady – Kutta Road, Sulthan Bathery – Mysore Road.

<sup>35</sup> One elephant in 2018 and three elephants in 2019.



**Figure 2.12:** Absence of vista clearance in Aralam farm

Government replied (March 2023) that the vista clearance to minimize human encounter with wild animals was being undertaken at certain areas on priority basis subject to availability of funds.

Specific replies on the instances pointed out in the paragraph were not furnished.

#### ***2.1.8.6 Absence of effective strategy to manage tiger population leading to increase in HWCs in Wayanad***

As per the data published in National Tiger Conservation Authority (NTCA) website an inviolate space of 800 to 1200 sq.km is required for a viable tiger population of 80 to 100 tigers. The number of tiger population and density (120 numbers in 344 sq.km.<sup>36</sup>) is very high in the Wayanad Wildlife Sanctuary compared to the two tiger reserves viz., Parambikulam (27 numbers) and Periyar (26 numbers). Even though Section 12 of the Wildlife (Protection) Act, 1972 (WPA 1972) permits population control of problematic animals through scientific management, no population management strategy like shifting to other tiger reserves with low density of tiger population was devised by the Department.

The number of HWC cases (based on claims received through e-district portal<sup>37</sup> during 2017-22) in respect of tiger was highest in Wayanad Wildlife Sanctuary (336 cases) and nearby ranges of Begur (139 cases) and Chedlath (132 cases) in North Wayanad and South Wayanad divisions respectively, which constitute 68.35 per cent of the total number of 888 cases in the State.

As per the Status of Tigers, Co-predators and Prey in India, 2018 report, Wayanad Wildlife Sanctuary was characterised by good prey and tiger density. The report observes that together with the adjoining tiger reserves of Karnataka and Tamil Nadu, this region is home to the largest tiger and elephant population in the world and suggested gazetting the sanctuary as a tiger reserve. Creating a tiger reserve would have ensured more allocation of Central funds, effective management of wildlife habitats and consequent reduction in HWCs. But the recommendations were not implemented by the Government till date (April 2023).

<sup>36</sup> 'Status of Tigers, Co-predators and Prey in India, 2018' report prepared by NTCA, Government of India, and Wildlife Institute of India, Dehradun in 2020.

<sup>37</sup> The online portal to provide Government services to citizens. HWC claims are submitted to Forest Department through e-district portal.

Government stated (March 2023) that the Department is planning to conduct tiger population estimation exclusively for Wayanad landscape and the issue on declaring Wayanad Wildlife Sanctuary as a tiger reserve was taken up in State Board for Wildlife meeting held on 27 December 2022. Further progress in managing the tiger population in Wayanad district and reduction in HWCs awaited.

#### **2.1.8.7 SARPA App and managing HWCs relating to snakes**

The Department operates a mobile application called SARPA (Snake Awareness Rescue and Protection Application) for systematic tracking of rescue and release of snakes from human habitations, creating awareness among public regarding snakes, helping public to find the nearest place where anti-venom treatment is available, *etc.* The Department had trained (November 2022) 1,660 volunteers consisting of Departmental officials and other public for scientific rescue of snakes.

During the period 2017-21, the number of incidents of snake bite was 2,919 which included 338 human deaths (KFS data).

Audit observed the following:

- Out of 1,660 certified rescuers, only 569 (34.28 *per cent*) rescuers have registered in the SARPA App (October 2022). It was reported by the Department that most of the certified snake handlers among the Department staff and watchers have not registered in the App.
- The list of anti-venom treatment hospitals was not available in the Department website. Even though report of snake bite is high in eastern areas of Kannur district, all the five anti-venom hospitals of Kannur listed in the app are located in the western side of the district which would create difficulties in travelling for the victims of snake bites.
- The registered volunteers are not covered under any insurance policy. So far one volunteer died due to snake bite and another injured, for which compensation under Kerala Compensation Rules, 1980 were only provided.

Government accepted (March 2023) that many of the Department personnel have not registered in SARPA and stated that instructions were given to all Assistant Conservator of Forests (SF) to monitor and ensure the registration of certified rescuers in SARPA.

In respect of anti-venom hospitals, Government replied (March 2023) that the list of hospitals in the State where anti-venom is available has been enlisted in SARPA App along with geo-tagging and contact details. Audit observation was on the non-availability of list of anti-venom treatment hospitals in the Department website, which is more convenient and quickly accessible, and the reply is silent in this regard.

It was further stated that insurance for the registered volunteers is under consideration of the Department.



### **2.1.8.8 Functioning of Rapid Response Teams constituted to deal with Human Wildlife Conflicts**

Government of Kerala accorded Administrative Sanction<sup>38</sup> (September 2011) for formation of five<sup>39</sup> Rapid Response Teams (RRT) to drive back wild elephants entering fringe areas causing damages to life and properties. As per the Guidelines for operation of RRTs to mitigate Human-Animal Conflict (RRT guidelines) issued by the Department (March 2019), the RRTs are to be headed by Deputy Range Forest Officer/Section Forest Officer and consist of two Section Forest Officers, four Beat Forest Officers and six Forest Watchers/Tribal Watchers.

Presence of a team of people led by well-trained officials and equipped to deal with conflict situations often pacify agitated people and help assure them safety. In respect of functioning of the RRTs, Audit noticed the following:

- The number of RRTs has increased to 15 due to increase in HWC. But Government sanction is pending for seven RRTs<sup>40</sup>.
- The RRT guidelines issued by the Department did not consider the Guidelines for Management of Human Elephant Conflicts (HEC guidelines) issued (October 2017) by MoEF in respect of constitution of RRTs, formation of Primary Response Teams, equipment, training, *etc.* The issues noticed in the five selected Divisions<sup>41</sup> where RRTs are functioning are detailed in the *Appendix 6*.

Government stated (March 2023) that approval process of temporary RRTs is being taken up and action would be initiated to fulfill the requirements of RRTs as per the guidelines.

#### **Recommendations:**

- *Timely construction, effective functioning and regular maintenance of preventive structures, wildlife population management, vista clearance, etc., would help reduce HWCs.*
- *Training more Kumki elephants and locating them in high elephant conflict areas, warning people on the movement of elephants using SMS alert system and tracking the movement of problematic elephants using radio collars, etc., would assist in reducing HWCs caused by elephants.*

<sup>38</sup> GO (Rt) No. 408/2011/F&WLD dated 16 September 2011.

<sup>39</sup> Nilambur, Wayanad, Palakkad, Kannur and Ranni.

<sup>40</sup> Thenmala, Konni, Munnar, Kasaragod, Aralam, Mannarkad, Agali.

<sup>41</sup> Thiruvananthapuram, Ranni, Palakkad, Kannur, Wayanad wildlife.

### 2.1.9 Post Conflict measures in Human Wildlife Conflicts

**Post human wildlife conflict measures were affected due to delay in compensation payment, irregularities and procedure lapses in approval of claims, absence of rehabilitation support, etc.**

Post HWC measures like timely and hassle-free payment of compensation, rehabilitation support, insurance, etc., can help in assuaging the public resentment. Observations in this regard are given below:

#### 2.1.9.1 Deficiencies in compensation framework

Audit test checked 858 claims in the selected Divisions and observed the following:

- **Absence of provision in e-district portal:** In the e-district portal there is no provision for claiming for loss of poultry, wooden trees and agriculture produces like coconut, arecanut, etc.
- **Absence of uniformity in fixing price:**
  - ❖ Even though Government has fixed the compensation rates for loss of crops<sup>42</sup> due to wild animal attacks, no rates were fixed for cattle/livestock loss on the basis of age, breed, milching, etc., in the e-district portal. In the selected Divisions, the claims were allowed based on the discretion of veterinary surgeon and the verifying Department officer. The compensation amount per cattle loss varied from ₹15,000 to ₹50,000 in the test checked claims.
  - ❖ In three Divisions<sup>43</sup>, compensation claims for loss of coconut due to monkey attack were not admitted whereas in three<sup>44</sup> other Divisions compensations ranging from ₹2.50 to ₹770 per coconut were paid.
  - ❖ In Marayoor Divisions, an individual claimed compensation for 85 coconuts on 20 February 2019, 30 coconuts on 10 September 2019 and 91 coconuts on 07 May 2020 due to attack of monkeys. The DFO admitted claims for an amount of ₹1,58,620 at the rate of ₹770 each which are the rates fixed for loss of coconut bearing trees.
- **Absence of rehabilitation support:** As per the Guidelines for Management of Human Elephant Conflicts (HEC Guidelines), 2017 issued by MoEF, the Department should directly meet all the medical expenses including post hospital expenses of the injured person. The affected person should be suitably rehabilitated. NGOs with appropriate expertise should be involved to rehabilitate the injured person and/or next to kin, in case of death of a person.

NWAP suggested putting in place arrangements so that the persons injured by wild animals receive quick and proper medical treatment and rehabilitation

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<sup>42</sup> GO(MS) No.02/2015/F&WLD dated 08 January 2015.

<sup>43</sup> Malayattoor, Mannarkkad and South Wayanad.

<sup>44</sup> Thiruvananthapuram, Marayoor, Kannur.

support including wheelchairs, prosthetic limbs and plastic surgery whenever required.

The Kerala Compensation Rules, 1980 or orders issued thereon/thereafter do not stipulate such rehabilitation support measures. Audit observed that in the absence of orders/instructions as per guidelines, follow up for providing rehabilitation support is not ensured.

Government stated (March 2023) that action shall be taken to consider proposal for providing rehabilitation support on need base.

- **Absence of SMS based application status system:** An SMS based system, like that followed in Revenue Department, would help the applicant know the status of their claim application. But this was not made available by Forest Department. In Malayattoor Forest Division, a clerk misutilised the BiMS<sup>45</sup> for preparing false bills and thereby an amount of ₹5.53 lakh relating to 11 beneficiaries were transferred to his account during the period from August 2019 to April 2020. An SMS based application status system would have prevented such a misappropriation.

As per the Government reply (March 2023), compensation for crop damage was being made based on the approved Government Order. The reply is, however, silent in respect of discrepancies noticed on the compensation claims for loss of coconut. In respect of compensation for cattle loss, it was stated that the assessment of loss was made by authorized officer, *i.e.*, Veterinarian, considering all possible aspects including age, milching/non-milching, *etc.* The reply is not acceptable as in the absence of any benchmark rates for cattle/livestock based on category, age, milching/non-milching, *etc.*, the assessment of cattle/livestock loss is arbitrary as pointed out by Audit. No reply has been furnished on lack of provision for claims on loss of poultry, wooden trees and agriculture produces like coconut, arecanut, *etc.* The Government also stated that possibilities of SMS based application status system shall be explored and implemented accordingly.

#### **2.1.9.2 Delay in payment of compensation to HWC victims**

NWAP suggested streamlining the official procedure for payment of ex-gratia relief to the victims of HWC to ensure that the relief is disbursed immediately with minimal paperwork and hindrances. Compensation for loss due to HWC is administered by the Kerala Compensation Rules, 1980. As per Kerala State Right to Service Act, 2012 applicable to the Department, the DFO has to issue sanction order within 30 days in the case of application for compensation of crop damage by wildlife.

The status of claims received during 2017-22 and settled as on 16 December 2022 in respect of the selected Divisions is given in **Table 2.5** below:

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<sup>45</sup> Bill Information and Management System (BiMS) is an e-Bill portal for claim settlements by Drawing and Disbursing Officers (DDOs). The DDOs can prepare online contingent bills and e-submit to treasury through BiMS.

**Table 2.5: Status of claim settlement**

| Particulars                       | 2017-18 | 2018-19 | 2019-20 | 2020-21 | 2021-22 | Total  |
|-----------------------------------|---------|---------|---------|---------|---------|--------|
| Total Claims received             | 5,044   | 5,694   | 5,464   | 4,672   | 4,673   | 25,547 |
| Approved                          | 4,356   | 4,879   | 4,631   | 3,250   | 2,151   | 19,267 |
| Rejected/Resubmitted              | 364     | 409     | 353     | 319     | 365     | 1,810  |
| Total Pending                     | 303     | 397     | 473     | 1,097   | 2,323   | 4,593  |
| Pending with Forest Range Officer | 208     | 193     | 219     | 321     | 459     | 1,400  |
| Pending with DFO                  | 95      | 204     | 254     | 776     | 1,864   | 3,193  |

(Source: Data from e-district portal)

The following observations on claim settlement are noticed:

- Out of the 25,547 claims received, 19,267 claims were approved, and 4,593 claims (17.98 per cent) were pending. Out of these 2,270 claims were pending for more than one year.
- The total pending claims for the period 2017-22 after deducting the approved and rejected/resubmitted claims from the total claims received was 4,470. But the total pending claims as per the e-district portal was 4,593, a difference of 123<sup>46</sup>. The Department must carry out a reconciliation of the same.

Government accepted (March 2023) that there are instances of delay in payment of compensation, and these are due to lack of fund availability. Action is being taken to make the payment of compensation at the earliest possible time.

The reason for discrepancy in pending claim figures were not furnished.

### **2.1.9.3 Absence of socio-economic impact studies on HWCs**

As per NWAP 2017-31, the increase in HWC leads to growing antipathy among the people towards wildlife conservation resulting in retaliatory killings or injuries to animals. The study on socio economic impact of HWC in the State will throw light on the difficulties faced by people and the initiatives that need to be taken up by the Department to ensure harmonious co-existence of humans and wildlife. But no such study has been conducted by the Department. During JPVs conducted (September - October 2021) in four locations<sup>47</sup>, Audit noticed instances where there

<sup>46</sup> 25,547-(19,267+1,810) = 4470; 4,593-4,470 = 123.

<sup>47</sup> Irrattavali under Thiruvizhakunnu forest station in Mannarkad Division; location near track B railway line in Palakkad Division; Kumbalathodu and Vadakkumbhagam under Mekkappal forest station and Anamukku under Vadattupara forest station, under Malayattoor Division.

was abandoned agriculture land/houses, people were afraid to attend functions, there was fear of losing job opportunities, etc.

The details of socio-economic impact studies conducted in the State, if any, were not furnished. Further reply awaited (April 2023).

***Recommendation: Streamlining the process of settling HWC claims, timely payment of compensation, rehabilitation support, etc., would reduce the apathy of people towards protection of wild animals and ensure confidence.***

#### **2.1.10 Co-ordination with all stakeholders to reduce HWCs**

**Lack of co-ordination with various stakeholders like LSGIs, Agriculture Department, Revenue Department, etc., was affecting the HWC measures of the Department.**

Effective co-ordination with all stakeholders like LSGIs, Revenue, Animal Husbandry, Agriculture, Tourism Departments, etc., is crucial for the successful implementation of HWC preventive and mitigative measures. By working together, the Department can develop and implement solutions that promote harmonious co-existence of humans and wildlife. The observations in this regard are given below:

##### ***2.1.10.1 Non-involvement of LSGIs and Agriculture Department to dissuade cultivation of attractive crops in fringe areas***

National Wildlife Action Plan 2017-31 suggests participation of LSGIs in promotion of alternative cropping practices among villagers. Further, creating awareness among farmers in fringe areas to avoid cultivation of crops attracting wildlife was identified as one of the solutions to reduce HWC by the Department.

Out of total 49,364 HWC claim applications received during the audit period, 34,814 claim applications (70.53 per cent) were related to crop loss.

Usually, elephants raid crops because they are more palatable, more nutritious and have lower secondary defences than wild browse plants. Crops like plantain/banana and pineapple attract elephants whereas crops such as mango ginger, lemon, etc., are financially attractive and not raided by any animals. The Department has not involved LSGIs and Agriculture Department to address this issue and devise an effective strategy to persuade the farmers to shift to these alternative crops.

Government accepted (March 2023) the Audit suggestion on involving concerned stakeholders and assured that action will be taken to make people living in forest fringe areas aware and promote alternative crops.

### **2.1.10.2 Delay in formation and convening of Inter Departmental Co-ordination Committees**

According to the advisory<sup>48</sup> issued by MoEF, the Government should constitute Inter Departmental Co-ordination Committees at State Level<sup>49</sup> and on the recommendation of CWW, at District Level<sup>50</sup> in all or identified districts of the State that are vulnerable to HWC. The SLCC should meet at least once in six months and DLCC at least once in three months.

On 25 October 2021, PCCF recommended proposal to the GoK for constitution of the committees. Government issued order on 09 December 2021 forming 14 DLCCs, one in each district. During 2021-22, only seven DLCCs convened in February - March 2022.

Audit observed delay of more than 10 months in constitution of DLCCs. No meetings were held by seven DLCCs (March 2022), which shows slackness on the part of Department in prevention and management of HWC.

The Government replied (March 2023) that meeting of all the DLCCs have been convened by December 2022 and the follow up action taken therein is being looked into for future course of action. Details of SLCC meeting conducted was not furnished, and the reply lacked assurance on conducting periodic meeting of DLCCs/SLCCs for addressing the HWC issues in the State.

### **2.1.10.3 Co-ordination between Government Departments to avoid duplication of Insurance Claims**

Pradhan Mantri Fasal Bima Yojana (PMFBY) is the Government sponsored crop insurance scheme which covers crop damage by wild animals which was implemented through State Agriculture Department. Similarly, Animal Husbandry Department has insurance schemes for cattle loss. The Kerala Compensation Rules, 1980 do not prohibit receipt of government sponsored insurance claims in addition to the compensation provided under the Rules. Hence, while applying compensation through the e-district portal, there is no provision for seeking information about whether the cattle/ crop have already been covered under any insurance coverage of the Government. The possibility of getting claims from multiple Government sources cannot be ruled out.

Government assured (March 2023) that action shall be taken to modify the application for compensation through e-district portal system to avoid duplication of Insurance Claims. Compliance awaited.

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<sup>48</sup> F. No. 8-60/2020 WL dated 06 February 2021.

<sup>49</sup> State level co-ordination committee (SLCC) to be headed by the Chief Secretary, CWW as Member Secretary and representatives from various Departments like Home, Finance, *etc.*, and LSGIs.

<sup>50</sup> District level co-ordination committee (DLCC) to be chaired by the District Collector, DFO/Wildlife Warden of Forest District Headquarters as Member Secretary and comprise of district level officers of various Departments/organisations included in the SLCC.

#### **2.1.10.4 Absence of co-ordination with different stakeholders**

Audit noticed that co-ordination with Departments like Revenue, Tourism, Animal Husbandry, etc., and LSGIs are necessary to mitigate HWC lapses. But absence of co-ordination was noticed in the following cases.

➤ **Revenue Department:**

The following issues were noticed:

- ❖ Revenue Department modified the status of 1,902.33 ha of forest land in Marayoor division as revenue land based on re-survey from 1993 onwards.
- ❖ *Pattas* were issued by Revenue Department in forest lands as mentioned in **Paragraph 2.1.7.2**.
- ❖ Encroachment of forest lands generally occur in fringe areas.

The absence of adequate consultation among the Departments during re-survey and issue of *pattas* in forest fringe areas are leading to long term disputes and shrinkage in forest lands. Lack of coordinate effort in identifying and evicting the encroachers result in fragmentation of wildlife habitats apart from worsening the HWC situation in the State.

➤ **Animal Husbandry Department:**

Cattle grazing in forest land was found to be one of the major causes of HWC (**Paragraph 2.1.7.9**). Co-ordination with Animal Husbandry Department was required to create awareness among the cattle farmers about the issue of zoonotic diseases, and other HWC issues due to grazing.

➤ **Local Self Government Institutions:**

Active participation of LSGIs is required for preventing and mitigating HWCs. LSGIs may be involved for regular maintenance of preventive structures. Dumping of garbage in fringe areas is one of the major causes for intrusion of wild boars and monkeys into human habitations and thereby leading to HWC. Co-ordination with LSGIs for timely removal of these garbage would decrease the intrusion of wild animals to human habitations.

➤ **Tourism Department:**

Tourism activities in certain areas near forests have led to increase in HWCs. For example, there has been an increase in HWCs in Anayirangal and adjacent areas of Idukki due to increased tourism activities. In January 2021, a woman tourist staying in a tent in the fringe area of a forest was killed by a wild elephant attack in Meppady. Additionally, tourists visiting resorts in the Kumizhi enclosure in the Muthanga range have been reported to disturb wild animals by creating loud noise and engaging in hunting.

The Forest Department has not issued directions to tourist resort operators and/or tourists staying in fringe areas to ensure responsible tourism initiatives in co-ordination with Tourism Department.

Government replied (March 2023) that tourism outside forest areas is managed by Tourism Department. However, necessary guidelines shall be considered

and issued for taking desired measures on conservation of wildlife/wild animal in respective areas after undertaking appropriate studies.

Government assured (March 2023) that points observed in the Report shall be reviewed and appropriate action will be taken to address the issue.

**Recommendations:**

- *The Department should coordinate with all stakeholders to reduce the occurrence and impact of HWCs in the State.*
- *LSGIs and Agriculture Department may be directed to promote cultivation of alternative crops in fringe areas through training, providing saplings, targeted loans, incentive for income loss, ensuring market for the produce, etc.*

**2.2 Failure of Forest and Wildlife Department in identifying forest land received in lieu of land transferred for road resulted in non-execution of compensatory afforestation and reconstruction of a State Highway**

**Divisional Forest Officer failed to identify the vested forest land when proposed by the Public Works Department for purchasing from a private party and handing over for compensatory afforestation.**

Section 2(ii) of Forest (Conservation) Act, 1980 stipulates that State Governments shall seek prior approval of Government of India (GoI) for use of any forest land for non-forest purpose. As per Section 4 of the Kerala Private Forests (Vesting and Assignment) Act, 1971, all private forests so long as they remain vested in the Government, be deemed to be reserved forests constituted under the Kerala Forest Act, 1961 (4 of 1962), and the provisions of that Act shall apply to such deemed to be reserved forests.

The Public Works Department (PWD), Government of Kerala (GoK), had sought approval of the Ministry of Environment, Forest and Climate Change, GoI for diversion of 4.05 ha of forest land in Nemmara Forest Division for development of Nemmara-Nelliyampathy road between chainage KM 8/000-30/022 through Forest & Wildlife Department (F&WLD), GoK. The GoI approved (October 2006) diversion of land with a condition stating that equivalent non-forest land along with cost for raising compensatory afforestation should be transferred to F&WLD by the user agency.

The PWD, GoK identified a private land comprising 4.07 ha, which was reported as suitable for compensatory afforestation by the Divisional Forest Officer (DFO), purchased and handed over (December 2006) the same to F&WLD. However, F&WLD later realised (December 2013) that the land was vested forest land. Compensatory afforestation could not be carried out, as hassle-free land was not yet handed over (February 2023) in lieu of the diverted land.

Under Rebuild Kerala Initiative (RKI), PWD had proposed and accorded Administrative Sanction (August 2020) to reconstruct roads damaged in 2018 floods which included the Nemmara- Nelliyampathy State Highway for ₹105.48



crore. The DFO, Nemmara made it clear (October 2020) to PWD authorities that the land transferred to PWD for construction of road has not been de-notified from forest land and prior permission from F&WLD is required for construction/maintenance activities there. As the State Highway is passing through Nelliampathy Reserve Forest area, the German Bank financing RKI insisted on obtaining concurrence from the F&WLD and has not issued 'No objection' for tendering the work.

Audit observed the following:

- an amount of ₹42.48 lakh was deposited with F&WLD as net present value and for compensatory afforestation, but compensatory afforestation has not taken place in the transferred land even after sixteen years (2022); and
- this prevented reconstruction of a road, ravaged by flood, for which Administrative Sanction was obtained (August 2020) for ₹105.48 crore under RKI, and thereby denied a facility due to the public.

The F&WLD replied (January 2023) that the Additional Chief Secretary and CEO, RKI entrusted (January 2021) the District Collector, Palakkad to find an alternate land to transfer to F&WLD for compensatory afforestation. The process of transferring compensatory land to F&WLD has not been completed so far (February 2023).

The Government replied (March 2023) that there were 34 bits covered in the vested forest notification number (B2-3590/2001 dated 28April 2001), lying outside the already prepared periphery sketch of VFC item No.35, and there were no sketches showing the entire vested area available at the time of taking possession of the land. The officials were unable to identify that the land proposed for handing over was a vested forest at the time of transfer of the land by the PWD authorities, and intimated the same in March 2014 only. It was further stated that the user Department is responsible for transferring hassle-free land to the F&WLD and this has not been received so far. Hence, the Department has not issued non-objection for the road work under RKI (March 2023).

The reply is not acceptable as it is the responsibility of the F&WLD to have a clear demarcation of its own land.

Thus, delay in identification of forest land by F&WLD and non-handing over of hassle-free land for compensatory afforestation by PWD acted as a hindrance to road infrastructure development project and depriving the public of a basic facility.

***Recommendations: The Government may give strict direction to the F&WLD to maintain and update records of land under the Department including vested forest land to avoid disputes and to prevent encroachments. Also, the Department should liaise with the PWD to get the alternative land for compensatory afforestation so that the road is reconstructed as per the objective of Rebuild Kerala Initiative.***

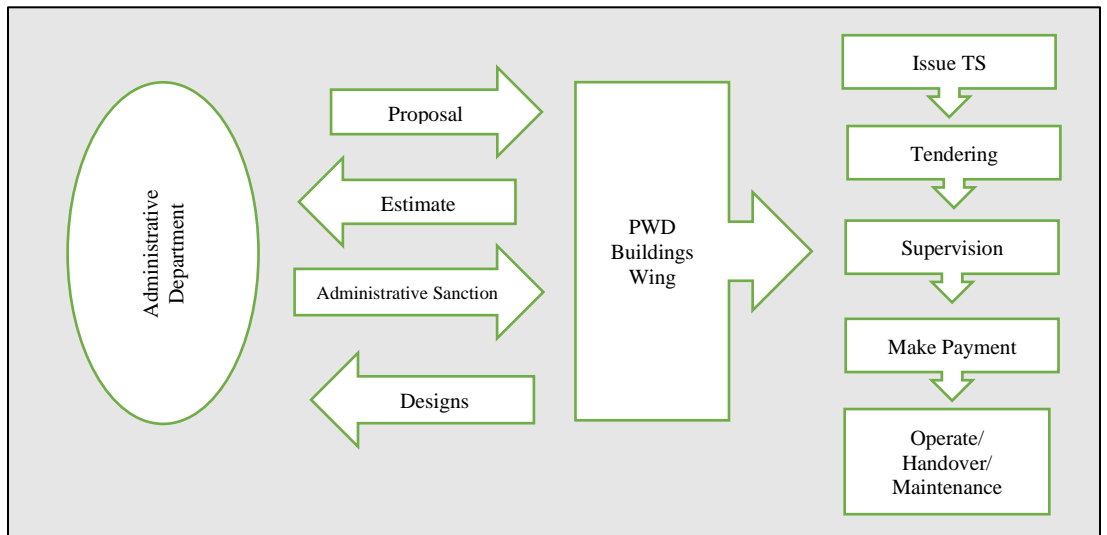
**Public Works Department**

**2.3 Construction and maintenance activities by the Buildings Wing of Kerala Public Works Department**

**2.3.1 Introduction**

The Public Works Department (PWD) is the statutory authority<sup>51</sup> for designing, planning, monitoring, constructing and undertaking maintenance of public works of the State Government, such as buildings, roads, *etc.*, irrespective of the source of funds for the same. The Buildings Wing of Kerala PWD is responsible for the construction and maintenance of Government buildings, *viz.*, (i) residential buildings such as staff quarters (ii) Government non-residential general purpose office and administrative buildings relating to ‘General Services’ (Public Service Commission, Jails, Stationery & Printing, *etc.*), ‘Social Services’ (Education, Sports, Art & Culture, Medical & Public Health, Family Welfare, Social Welfare, *etc.*) and ‘Economic Services’ (Agriculture, Animal Husbandry, Fisheries, Co-operation, *etc.*) (iii) functional buildings coming under the Social and Economic Services, *viz.*, school buildings, hospital buildings, agriculture colleges, *etc.* Further, the Wing is mandated to ensure that the desired life of the Government buildings was achieved by complying with Quality Control (QC) aspects in construction and by executing periodic and preventive maintenance of existing assets. The Buildings wing deals with the planning, project preparation, construction, maintenance and arrangement of works including water supply, electrification and electronic works of Government buildings.

**Chart 2.1: Schematic diagram of execution of works in PWD**



The Secretary to Government of Kerala heads the PWD. The Chief Engineer (Buildings) (CE) assists the Government in planning and executing the construction and maintenance activities entrusted to the Buildings Wing. The Buildings Wing of the Department consists of 16 Buildings Divisions under three Circle Offices and a

<sup>51</sup> Section 101 of KPWD Manual

Judicial Circle in the State. The Wing maintains 11,613 buildings (January 2023) spread across 14 districts of the State under different categories, viz., offices, residential and functional buildings.

### 2.3.2 Audit objectives

To examine whether:

- the planning for construction and maintenance of buildings including internal roads and connected structures were comprehensive and effective;
- the financial management of the buildings wing is effective and measures to achieve economy in expenditure and optimum revenue realisation was ensured while implementing construction and maintenance activities;
- the construction and maintenance works were executed in compliance to existing regulations/stipulations; and
- the monitoring and internal control mechanism of the Wing is adequate and effective in achieving the objectives of construction and maintenance of public buildings.

### 2.3.3 Audit criteria

The audit is conducted based on the following criteria:

- i. Kerala Public Works Department (KPWD) Manual
- ii. Kerala Public Works Account (KPWA) Code
- iii. Kerala Financial Code
- iv. Kerala Store Purchase Manual
- v. Standard Bid Document (SBD)
- vi. Quality Control Manual of PWD
- vii. Contract Agreement Conditions
- viii. Government Orders/Circulars/Guidelines

An entry meeting with the Secretary to Government was held on 30 August 2022 to explain the objectives of audit. On conclusion of audit, an exit meeting to discuss the audit findings was conducted on 16 February 2023.

The Compliance Audit was conducted from April 2022 to January 2023 covering the period from 2019-20 to 2021-22. Five out of 16 Buildings Divisions, viz., Special Buildings Division, Thiruvananthapuram and Buildings Divisions of Kottayam, Kozhikode, Wayanad and Thrissur were selected using stratified random sampling method. Out of 513 works executed by these divisions during 2019-2022, 104 works (49 completed, 54 ongoing and one foreclosed), including 13 deposit works, amounting to ₹447 crore were selected using stratified random sampling. This included cent *per cent* works costing more than ₹10 crore, 25 *per cent* costing between ₹one crore to ₹10 crore and 10 *per cent* of works costing below ₹one crore executed by the Divisions during the above period. Apart from these, 25 maintenance works were also selected randomly. The observations are based on test-check of records maintained in the selected Divisions and all Circle

Offices<sup>52</sup>, relevant information from other Departments and by conducting Joint Physical Verification (JPV).

### **Audit Findings**

The deficiencies at various stages of construction and maintenance of buildings undertaken and awarded by PWD, observed during the course of audit are explained in the ensuing paragraphs.

### **2.3.4 Planning and Estimation**

#### **The lapses in estimation and deficiencies in planning for construction and maintenance of building works resulted in time overrun, cost overrun, non-adoption of green building concepts and inadequate maintenance of buildings.**

Sections 104.1 and 702.1 of KPWD Manual describes requirement of planning to be carried out by the Department. The Planning section in the CE's office is responsible for preparation of Budget proposals, collection and processing of progress reports in co-ordination with the Circle and Division offices and review current performance, identify resources, define new financial year's targets and review performance, progress and achieving objectives.

#### **2.3.4.1 Deficiencies in planning and non-achievement of five-year plan targets**

As per Section 206.1 of KPWD Manual, the CE shall be responsible for preparing annual plan, five years' development plan including preparation of the Budget proposals and Annual Administration Reports. Further, he shall plan, organize and co-ordinate building works based on budget allocations. Audit observed that though the CE prepared the annual and five years' development plans, preparation of five years' development plans was not in accordance with the provisions of KPWD Manual as discussed below.

- As per Section 213.1.1 of KPWD Manual, CE was to ensure that preparation of five-year development plan should start from the Division level. However, only annual plans were prepared by the Divisions. Non-compliance to manual provisions adversely affected the long-term planning process as is evident from the non-completion of works taken up during earlier years and issues related to maintenance activities as mentioned in subsequent paragraphs (*Paragraphs 2.3.4.4 to 2.3.4.6*).
- The main priority of the Buildings Wing for 13<sup>th</sup> Five Year Plan (FYP) (2017-22) was to complete the ongoing works in a time bound manner. However, as per data maintained by PWD, even after the end of 13<sup>th</sup> FYP (March 2022), a total of 97 projects<sup>53</sup> (each costing more than ₹one crore) sanctioned by the Government with a total outlay of ₹1,038.66 crore during the 11<sup>th</sup> (2007-12) and

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<sup>52</sup> Buildings North Circle, Kozhikode; Buildings Central Circle, Thrissur; Buildings South Circle, Thiruvananthapuram; Judicial Buildings Circle, Ernakulam.

<sup>53</sup> Data of ongoing projects (above ₹ one crore) available in PWD website.

12<sup>th</sup> (2012-17) FYPs were not completed as of October 2022 as shown in **Table 2.6**. Out of these, 41 projects belong to selected divisions.

**Table 2.6: Incomplete projects of previous FYPs**

(₹ in crore)

| Year in which AS received | Number of projects | Outlay          | Range of physical progress (per cent) | Projects yet to start |
|---------------------------|--------------------|-----------------|---------------------------------------|-----------------------|
| 2010-11                   | 1                  | 15.00           | 92                                    | NA                    |
| 2013-14                   | 4                  | 19.51           | 25 to 95                              | NA                    |
| 2014-15                   | 10                 | 27.81           | 23 to 99                              | NA                    |
| 2015-16                   | 19                 | 601.54          | 0 to 98                               | 1*                    |
| 2016-17                   | 63                 | 374.80          | 0 to 99                               | 4*                    |
| <b>Total</b>              | <b>97</b>          | <b>1,038.66</b> |                                       |                       |

\*these projects do not come under the samples selected

- The general objective set for 13<sup>th</sup> FYP (2017-22) included shifting of all Government offices functioning in rented buildings to own buildings. In the absence of a perspective plan, it could not be materialised even at the end of the plan period. Audit observed that various Departments of the Government had incurred an amount of ₹190.92 crore<sup>54</sup> towards rent during the period from 2019-22 as shown in **Appendix 7**. Now the same goal is rolled over to 14<sup>th</sup> FYP (2022-27) with a target period of another five years. Similarly, projects were taken up by the wing in a phased manner. Though in the work file, the phases are recorded as completed, Audit, during JPV (18 January 2023), noticed buildings idling for want of extension projects, which revealed lapses in holistic planning of projects and its continuity.

Government replied (February 2023) that due to lack of funds, many proposed projects, including the shifting of Government offices from rented to own buildings, are being carried out in phases. The COVID pandemic caused a slowdown in works from December 2019 to 2021, resulting in stalled projects due to lack of funding for contractors. Additionally, most projects with a 20 per cent budget provision in the FY 2022-23 under the PWD head were sanctioned without ensuring availability of land or are yet to be identified by relevant Departments.

The reply was not tenable since the Government could not attribute any specific reason for delayed works pertaining to earlier FYP periods. Moreover, plan for shifting offices from rented buildings to own buildings was not based on any prioritised list of buildings or any database of rented buildings.

#### **2.3.4.2 Non preparation of Performance Budget**

Section 707 of KPWD Manual envisages preparation of Performance Budget by the Buildings Wing. This method of budgeting was intended to enable a department to set out in the budget document the objectives of the Department during a year, the programs and activities by which these objectives are proposed to be realized,

<sup>54</sup> As per VLC data and Finance Accounts of respective years.

the expenditure to be incurred on each of these programs and activities during the year, indicating the broad physical achievements that is possible. Further, this is a useful management tool both for the Legislature and the Departments in programming and evaluating the performance of the Departments. Despite this, Audit noticed that the CE did not ensure the preparation of the Performance Budget so far.

Failure of the Buildings Wing in this regard rendered the effectiveness of the planning and budgeting process non-measurable with reference to planned financial outlays and physical outcomes.

Government replied (February 2023) that Agriculture, Forest & Wildlife and Water Resources Departments were selected for Performance Budget preparation, while PWD was chosen for Concurrent Monitoring and Evaluation of Schemes.

The reply is not tenable since Concurrent Evaluation is a monitoring tool and Performance Budget is a planning tool and hence both are necessary for effective planning and measurement of outcomes. The preparation of the Performance Budget would have aided in the efficient planning of Buildings Wing.

#### **2.3.4.3 Inadequate promotion of Green Building Concepts**

##### **➤ Green Building Policy, 2013**

Government of Kerala approved Green Building Policy, 2013 (GBP) with the objective of ensuring environment friendliness, conserving natural resources, energy efficiency, *etc.*, by using solar panels and other non-conventional sources, waste management strategies, *etc.*, in construction of buildings.

Even after a delay of 10 years, the CE was unable to take effective action to promote GBP in the State. Elements of GBP were not seen incorporated in any of the test-checked buildings.

Government replied (February 2023) that the buildings designed by PWD are climate responsive and environment friendly by including all possible economically viable parameters of a green building. However, Audit noticed during JPV of selected completed buildings that in none of the buildings, provision for solar panels, water conservation, waste management strategies, *etc.*, were given, though this was one of the main objectives of GBP. Moreover, Government did not provide the details or list of environment friendly parameters adopted by the Department.

##### **➤ Non-adoption of GRIHA certification for PWD buildings**

GRIHA (Green Rating for Integrated Habitat Assessment) is a rating tool that helps people assess the performance of their building against certain nationally acceptable benchmarks. It evaluates the environmental performance of a building holistically over its entire life cycle, thereby providing a definitive standard for what constitutes a 'green building'.

Government of India adopted (2007) GRIHA as the National Rating System for green buildings. Subsequently (2009), three-star GRIHA rating was made

mandatory for all Government buildings and the Central PWD adopted GRIHA for its buildings.

Audit observed that while the Local Self Government Department (LSGD) adopted (February 2021) green building standards in the State, Buildings Wing of Kerala PWD was yet to adopt the standards for its buildings.

Non-adoption of Green Building Policy concepts by PWD indicated its reluctance to adopt the green initiatives in the construction of environment friendly buildings.

Government replied (February 2023) that obtaining a rating and approval for every PWD building under GRIHA is not financially viable, and therefore, only two buildings were registered for GRIHA rating as a pilot project. However, the PWD is currently developing its own rating system, which will include sustainability and green building concepts as parameters.

Audit observes that it is important for the Government to prioritise sustainable and green building concepts for long-term benefit of the environment and the people. Non-adoption of GRIHA rating and/or developing its own rating system even after a period of 13 years indicates indifference of the Department in adopting green building concepts in the State.

#### ***2.3.4.4 Arrangement of works without ensuring hindrance free land***

As per Section 2003 of KPWD Manual, before bids are invited for a work the Executive Engineers (EEs) concerned were to ensure that there should be 100 *per cent* possession of hindrance free land.

Scrutiny of 104 work files selected for detailed audit revealed that 34 works were arranged without ensuring 100 *per cent* possession of hindrance free land, as detailed in ***Appendix 8***. It was observed that:

- the main obstacles which led to non-availability of hindrance free land were underground cables, demolition of old buildings, removal of trees, clearances from other agencies, *etc.*
- non-availability of hindrance free land delayed commencement of the works up to 17 months<sup>55</sup> which resulted in subsequent extension of Time of Completion (ToC).

From these, it is evident that PWD did not ensure hindrance free land before inviting tenders/awarding the works, resulting in time overrun.

Government replied (February 2023) that there are delays in removing the hindrances by client Departments like Health, Education, *etc.* In respect of underground cables and other service lines, the same are to be shifted by the concerned service providers through the client Department and the delay in this process causes inordinate delay in construction.

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<sup>55</sup> NABARD - RIDF - XXI - 2015-16 Infrastructure work - Construction of Multipurpose Hospital Block of District Hospital, Mananthavadi, Wayanad.

Reply was not acceptable since the KPWD Manual provisions require that all the hindrances should be removed before initiating tender process.

#### **2.3.4.5 Lapses in Investigation**

As per Section 1402 of KPWD Manual, it is most important that every work shall be properly investigated, and all relevant data collected and correlated before finalizing the design and estimate for the work. As per Section 1601.1.2 of KPWD Manual, detailed estimate shall be prepared after detailed investigation of the site by the concerned authority based on approved designs only. The AE concerned was to ensure proper site investigation prior to preparation of detailed estimates.

Test check of work files in the selected Divisions revealed lapses in investigation and estimation in seven works as detailed in **Appendix 9**.

Audit observed the following discrepancies during execution due to lapses in site investigation in works as given below:

- In seven<sup>56</sup> out of 104 selected works, the scope of the works was changed, and extra items were added after commencement of the works consequent to site related issues.
- In one<sup>57</sup> ongoing work, the Administrative Sanction (AS) and Technical Sanction (TS) was required to be revised.
- In three<sup>58</sup> works, an additional expenditure of ₹2.78 crore was necessitated.

The Government replied (February 2023) that it is planning to strengthen the investigation wings by creating district-wise units and assured that henceforth no further change in scope of work after commencement will be allowed to happen. The CE replied that the subsequent changes were incorporated on the basis of issues noticed during the execution of works. The reply is a vindication of the audit observation.

#### **2.3.4.6 Lapses in planning for maintenance activities of buildings**

Sections 2501.1, 2501.9, 2801.1 and 2802.1 of KPWD Manual stipulate the importance of maintenance activities of buildings and the duties of Divisional Officers (DO) and higher officials in preparation and requisition for annual grants

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<sup>56</sup> 1. Construction of multi-storied building for functioning of various Commissions at Pattom, Thiruvananthapuram 2. Rajiv Gandhi Institute of Technology, Kottayam - Construction of Building for Architecture Block 3. Construction of Court Complex at Irinjalakuda 4. Construction of first and second floor for 450 bedded Hostel for Ladies at Govt. Medical College, Kottayam 5. Construction of Model Residential School at Maruthonkara, Kozhikode 6. Construction of male and female ward to Gandhigram Hospital of Dermatology, Koratty, Thrissur 7. District Jail Mananthavady, construction of Superintendent quarters, Staff quarters & Rest Room for staff.

<sup>57</sup> Rajiv Gandhi Institute of Technology, Kottayam - Construction of Building for Architecture Block.

<sup>58</sup> 1. Rajiv Gandhi Institute of Technology, Kottayam - Construction of Building for Architecture Block (₹ 1.63 crore) 2. Construction of first and second floor for 450 bedded Hostel for Ladies at Govt. Medical College, Kottayam (₹ 0.80 crore) 3. Construction of Model Residential School at Maruthonkara, Kozhikode (₹ 0.35 crore).



for maintenance of buildings. Failure of DOs in complying with the provisions related to maintenance activities led to the following deficiencies.

➤ **Lack of Maintenance Schedule**

Section 702.1.2 of KPWD Manual stipulates that annual plans should include programme schedule for maintenance works, continuing works and new works. However, Audit noticed that maintenance schedules and estimation for maintenance were not prepared and forwarded to planning section. Priority list of buildings for routine ordinary maintenance/repairs were also not maintained in the selected Divisions.

Absence of maintenance schedule and priority list of buildings for maintenance works indicated that execution of periodic maintenance was not ensured in all the buildings. Failure in maintenance planning adversely affected implementation of maintenance activities as referred to in **Paragraph 2.3.6.8**. This would adversely affect the strength and longevity of the buildings in addition to higher cost for future maintenance activities.

Government, in its reply (February 2023), assured that programme schedules for maintenance works, continuing works and new works as well as priority list of buildings for routine/ordinary maintenance will be prepared as stipulated.

➤ **Inadequate database of buildings**

As per Section 2901.1.3 of KPWD Manual, a Register of Buildings should be maintained in each Buildings division in the prescribed form<sup>59</sup> and the register should include details such as year of construction, cost, use of building, occupant, maintenance cost, *etc.*, of all buildings under its charge. Audit observed that none of the selected divisions had maintained register of buildings with the required details. Furthermore, the building registers maintained in the sub-divisions were found to be lacking in updation and necessary details.

As part of implementation of Project Information and Cost Estimation (PRICE) software in PWD, which is developed for the preparation and online processing of estimates, Government of Kerala (GoK) instructed<sup>60</sup> (April 2019) to enter all the details of assets as stipulated in the PRICE database. However, Audit noticed that the data on buildings available in PRICE was incomplete. Information/details, such as original cost of construction, date of construction/completion, *etc.*, which are vital for preparing maintenance estimates were not entered in PRICE. This adversely affected the maintenance planning.

The Government reply (February 2023) is silent on the inadequate database of buildings. All the details on buildings should be entered in the PRICE software in order to use it as an effective tool for maintenance activities.

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<sup>59</sup> Appendix 2800 A.

<sup>60</sup> GO(Rt)No.2997/2019/Fin dated 11 April 2019.

#### **2.3.4.7 Laxity in disaster preparedness**

In May 2019, the State Disaster Management Authority (SDMA) released 'Monsoon Preparedness and Response Guidelines' which were subsequently updated in 2020, 2021 and 2022. The guidelines mandated that every Government Department should develop and execute preparatory measures ahead of the monsoon season. Clause 7.1.30.2 of the Guidelines (2019) specified that PWD was responsible for conducting structural audits of hospital and office buildings and providing the necessary information to SDMA. However, it was found that the Department neither performed any structural audits of buildings in the State nor did the CE issue necessary directions to field offices to conduct such audit as required.

The SDMA issued these guidelines after the State was affected by natural disasters such as severe cyclone (Ockhi) and floods in 2018. The failure of the PWD Buildings Wing to carry out the mandated structural audits not only rendered the efforts of the SDMA futile but also increased the risk to the occupants of Government buildings in the event of future natural calamities.

Government replied in the exit meeting (February 2023) that early action will be taken to comply with the SDMA guidelines.

#### **Recommendations:**

- *The Department should undertake long term planning with achievable targets for construction and periodic maintenance of buildings to ensure safety, durability, cost savings, and energy efficiency.*
- *Department needs to ensure cent per cent hindrance free land prior to arrangement of works so as to ensure achievement of targets without undue delay.*
- *Responsibility needs to be fixed in respect of projects remaining incomplete due to lapses on the part of departmental officials.*
- *Compliance with the SDMA guidelines is to be ensured to strengthen and complement the disaster preparedness of the State.*

#### **2.3.5 Financial Management**

**The lapses in financial management of the Buildings Wing resulted in idling accumulation of deposits, non-realisation of lapsed deposits, security deposits, risk and cost, external fund and non-fixing of maintenance grant.**

The expenditure for construction and maintenance of non-residential office and administrative buildings are booked under the PWD Major Heads 2059/4059, and expenditure for construction of functional buildings of other departments are booked under their respective capital Major Heads for which the Chief Engineer (Buildings) is the Chief Controlling Officer.

Expenditure incurred by Buildings Wing towards construction and maintenance activities for various Departments during the period 2019-22, were as shown in **Table 2.7.**

**Table 2.7: Expenditure by Buildings Wing on construction and maintenance activities-Year-wise**(*₹ in crore*)

| Year               | Construction    | Maintenance   | Bill Discounting System Charges <sup>61</sup> | Grand Total     |
|--------------------|-----------------|---------------|---|-----------------|
| 2019-2020          | 566.09          | 94.35         | 2.27  | 662.71          |
| 2020-2021          | 731.67          | 125.82        | 2.49  | 859.98          |
| 2021-2022          | 775.52          | 142.52        | 1.42  | 919.47          |
| <b>Grand Total</b> | <b>2,073.29</b> | <b>362.69</b> | <b>6.18</b>                                   | <b>2,442.16</b> |

(Source: Table 2.7 VLC figures)

General Education (₹ 881.98 crore), Medical & Public Health (₹530.53 crore) and Public Works (₹750.70 crore) Departments together constituted 89 *per cent* of the total expenditure for the three years.

### 2.3.5.1 Deposit works

As per Article 2.1.1 (14) of Kerala Public Works Account Code (KPWA Code), deposit works refers to such works of construction or repair, the cost of which is not met from the budget provision of PWD. In this type of works, the intending Department draws the funds from their budget provision and transfer credit the same to the Civil Deposit Head of Account, in the name of the respective EE under whose jurisdiction the work is to be executed.

#### ➤ Management of deposits

Article 15.5 of KPWA Code prescribes for maintenance of the schedule of deposit works which should show the deposit-wise receipt, expenditure and balance and a deposit register showing the month-wise opening balance, receipts, adjustments and closing balance of each separate deposit item and the total amount of deposit works to be taken up. However, it was observed that none of the selected Divisions were maintaining the register. As a result, the total number of deposit works to be taken up was not traceable which adversely affected monitoring of deposits resulting in non-execution of deposit works and accumulation of deposits.

Government assured (February 2023) that deposit register as prescribed in the KPWA Code will be maintained in all the Divisions.

#### ➤ Idling and unsettled deposits

As mentioned above, user Departments transfer credit funds in the Civil Deposit head favouring Divisional Officer (DO) for execution of various projects through BiMS<sup>62</sup>. Even though the details of idling deposits and the concerned

<sup>61</sup> BDS-Bill Discounting System- GoK introduced (2015) this system for the purpose of settlement of pending bills due to contractors through banks.

<sup>62</sup> Budget Information and Management System of Government of Kerala.

non-initiated works were called for, the selected Divisions could only provide the amount and number of works from April 2016 onwards, which was available in BiMS (except Kozhikode Buildings Division, where details from 2004-05 were provided). The details are shown below in **Table 2.8**.

**Table 2.8: Idling deposits under selected Divisions**(*₹ in crore*)

| Name of Division                         | Amount idling under deposits |         |         | Total         |
|--|------------------------------|---------|---------|---------------|
|  | Upto 2019-20 <sup>#</sup>    | 2020-21 | 2021-22 |               |
| Wayanad                                  | 1.39                         | 1.59    | 8.16    | 11.14         |
| Kozhikode                                | 88.44                        | 5.01    | 21.50   | 114.95        |
| Thrissur                                 | 10.42                        | 15.07   | 24.76   | 50.25         |
| Kottayam                                 | 7.34                         | 2.91    | 12.06   | 22.31         |
| Special Buildings,<br>Thiruvananthapuram | 7.94                         | 4.26    | 15.60   | 27.80         |
| <b>Total</b>                             |                              |         |         | <b>226.45</b> |

<sup>#</sup>for Kozhikode, the figures relate to the period from 2004-05 and for other divisions, from April 2016 only  
(Source: Data received from the Divisions concerned)

Audit observed the following:

- An amount of ₹226.45 crore (received from 2004-05 in Kozhikode Division and from April 2016 till March 2022 in other selected divisions) was idling under the deposit head of account at the selected Divisions as per data provided by the Divisions. There were various reasons for idling of such deposits like works not required by the client department, site-related issues, non-availability of hindrance-free land, social issues *etc.*
- The Buildings Wing did not take any action to verify the accumulated deposits and initiate works. The deposits were idling for more than 15 years in certain cases. As the funds to the tune of ₹226.45 crore was not used for asset creation, the intended objective of the user Department has not been achieved. Moreover, as the funds were transferred to PWD, there is a possibility of recording such amounts as final expenditure in the accounts of the user Departments.
- In addition to this, an amount of ₹39.13 crore in respect of 525 works pertaining to the audit period remained unsettled (as of December 2022) even after completion of works.

Audit observed that there was no mechanism in place to review and monitor the utilization of funds received from other departments for executing various deposit works. This resulted in significant delays in initiating such works and accumulation of funds under the deposit head. This delay also meant that the intended objectives of the user departments were not met within the expected time frame. This can also lead to diversion of funds.

Government replied (February 2023) that the CE (Buildings) will examine idling deposits in the Buildings Divisions.

The reply, however, lacked assurance on the part of the Government to develop a system in the Department to monitor the deposits, in order to avoid accumulation/idling of Government funds in public account for years, consequently affecting the budgetary controls of the Government.

### **2.3.5.2 Unclaimed security deposits not credited to Government account**

As per para 15.4.1 (iii) of KPWA Code, deposits remaining unclaimed for more than three complete account years at the end of March every year should be treated as Lapsed Deposits and credited to Government account.

On scrutiny of Security Deposits (SD)<sup>63</sup> other than Bank Guarantee (BG) held in all Circles and at the selected Divisions, it was noticed that SDs amounting to ₹3.57 crore<sup>64</sup> received from 1996-97 to 2015-16 were remaining unclaimed and still not credited to Government accounts as lapsed deposits upto 2021-22. Further, monthly/yearly closing statement of SDs, including lapsed SDs, were not maintained by any of the selected Divisions. The SEs at Circles and the EEs at Divisions were to devise a system to monitor the SDs and to initiate appropriate action as required.

Government replied (February 2023) that action will be taken to credit the unclaimed deposits to Government accounts in respect of balances remaining unclaimed for more than three complete accounting years.

### **2.3.5.3 Lapses in management of Security Deposits worth ₹11.32 crore**

According to Section 2009.7 of KPWD Manual and Standard Bid Document (SBD) Clause 7.2, Performance Guarantee (PG) at five *per cent* of contract amount should be submitted within 14 days of receipt of Letter of Acceptance (LoA) by the successful bidder. At least 50 *per cent* of PG shall be in the form of Treasury Fixed Deposit (TFD) in the name of Agreement Authority for a period not less than 28 days after the completion of Defect Liability Period (DLP) and balance PG in the form of BG. Bank Guarantee shall be submitted before executing agreement and shall be valid till 28 days after the completion of DLP of work. The BG on installment basis with lesser period of validity shall not be accepted. Further, an Additional Performance Guarantee (APG) for unbalanced price<sup>65</sup> in addition to the PG in all cases where the quoted rate falls below 10 *per cent* of the estimate cost needs to be furnished.

The SEs and EEs of Circles and Divisions respectively being agreement authorities were responsible to ensure that adequate guarantees with due coverage are collected

<sup>63</sup> Term Deposits, National Savings Certificate, Postal Savings Account, Treasury Savings Account, etc.

<sup>64</sup> Wayanad ₹71,476 (32 nos) + Kozhikode ₹19.75 lakh (15 nos) + South Circle ₹1.90 crore (248 nos) + Judicial Circle ₹27.57 lakh (38 nos) + Kottayam ₹4.64 lakh (7 nos) + Thrissur ₹36.87 lakh (58 nos) + Thiruvananthapuram Special Building Division ₹3.71 lakh (3 nos) + Central Circle ₹73.7 lakh (69 nos).

<sup>65</sup> In case the agreed price is below more than 10 *per cent* of estimated price, unbalanced price represents the amount which is less than 10 *per cent* of the difference of the estimated price and agreed price.

prior to executing agreements with the contractor or in case of extension of ToC. However, verification of securities (₹ 20.93 crore) maintained in respect of 104 selected works at the Divisions and records at the Circle Offices revealed that in 29 instances in respect of 22 works BGs amounting to ₹11.32 crore were not collected/extended/invoked or short-collected or expired or released prior to completion of DLP as of October 2022. Out of these 22 works, seven works were completed, 10 works were ongoing and five works were terminated. Thus, in respect of five terminated works, the Government have already suffered loss due to not recovering the risk and cost or LD and in case of 10 works Government is at a potential risk if the contractor defaults. Category-wise details of the instances are given in **Table 2.9** below.

**Table 2.9: Details of Bank Guarantees**

(₹ in crore)

| Issue of PG/APG   | No. of instances | Amount       |
|---|------------------|--------------|
| Non/Short collection                                    | 4                | 2.28         |
| Extension of ToC without extending PG                   | 14               | 2.96         |
| Extension of ToC without extending APG                  | 5                | 3.51         |
| BGs expired in respect of works terminated with R&C     | 5                | 1.66         |
| BG released prior to completion of DLP by Circle Office | 1                | 0.91         |
| <b>Total</b>  | <b>29</b>        | <b>11.32</b> |

(Source: Data received from the Divisions concerned)

BG is a promise from a bank that the liabilities of a contractor will be met in the event of failing to fulfil his contractual obligations. Non/short collection of PG/APG and non-intimation to bank prior to lapse of validity of BG amounts to undue favour to the contractor and a potential loss to the exchequer if the conditions of the PG/APGs are not adhered to by the contractor during the DLP. Details of cases given in **Appendix 10**.

Government replied (February 2023) that all the instances will be examined by the Chief Engineer (Buildings) and action would be taken.

#### **2.3.5.4 Non-realisation of Risk and Cost liability**

According to Section 2116.2.1 of KPWD Manual, an amount equal to 30 per cent of the cost of the remaining works at agreed rates of a terminated contract shall be recovered from the defaulted contractor towards risk and cost (R&C). The contractor shall be directed to remit the R&C amount within three months. Further, as per Clause 15.4, 15.5 and 15.6 of Part II General Conditions of Contract (GCC), in the event of termination, the employer shall be entitled to recover liquidated damages (LD) up to 10 per cent of the contract value and forfeit the SD made by the contractor to make good the losses besides getting the work completed by other means at the R&C of the contractor.

The SEs were responsible to realise the R&C, while assessment of R&C was to be done by the EEs concerned. However, Audit observed that in four Buildings Circles, 13 works were foreclosed at the R&C of the contractors. But, in nine out of 13 works, an amount of ₹8.71 crore was outstanding for collection as R&C and

in four works (out of nine) the LDs amounting to ₹1.09 crore was not collected. Moreover, in four out of the 13 works the R&C liability is not yet calculated and realised from the contractor. The details are given in **Appendix 11**.

Further, in one work<sup>66</sup>, the contract was awarded to an inexperienced contractor violating clauses 2.2 and 2.4 of Part VI pre-qualification information and consequent termination of work with R&C.

Government admitted (February 2023) the flaws in the recovery of risk and cost in the cases pointed out by Audit. In respect of five cases, the Department assured of taking immediate action and in the remaining cases, action is being initiated to recover the amount.

#### **2.3.5.5 Non-fixing of Maintenance Grant**

As per Section 2802.1 of KPWD Manual, each building or group of buildings in one campus forming one administrative unit shall have an annual maintenance grant fixed by the CE (Buildings). This grant is intended to meet the cost of ordinary repairs such as petty repairs to walls, floors, doors and windows, roof, *etc.*, white washing, painting, *etc.*, which are of a recurring nature. Further, total budget provision is allotted by CE (Buildings) among the Divisions under the different sub heads in April every year and the DOs shall plan their maintenance programs within the funds so allotted. The grant for ordinary repairs to be fixed is two *per cent* of capital cost and the grant fixed for every building shall be revised once in every five years or as often as found necessary.

However, Audit noticed that the CE did not fix and provide the maintenance grant to the DOs as envisaged, which resulted in lack of periodical maintenance of Government buildings. This indicated that maintenance activities were not given due priority as envisaged in KPWD Manual.

Government replied (February 2023) that EEs of Buildings Divisions are submitting the maintenance requirements to the planning wing every year, based on which budget estimates for maintenance works are submitted by the Finance Wing. Funds released are allotted by CE based on Administrative Sanction and priority list. But the reply is silent on fixing an annual maintenance grant for all the Government buildings as envisaged in KPWD Manual.

#### **2.3.5.6 Lapse of external financial assistance**

The work ‘Construction of women’s hostel for CKGM College, Perambra in Koyilandy’, was sanctioned (September 2011) by the Government with a total outlay of ₹1.50 crore. The outlay included assistance of ₹0.60 crore from University Grants Commission (UGC). Based on the AS, the UGC deposited (May 2013) the first tranche of the assistance to the tune of ₹0.30 crore in the deposit account of EE, Buildings Division, Kozhikode. Due to the delay in starting the work, UGC did not release the balance assistance of ₹0.30 crore. The TS for the work was issued

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<sup>66</sup> Construction of additional block building to Ladies Hostel in Government College, Chittur.

by the SE (North Circle) only in August 2017, *i.e.*, after a lapse of six years of issuing the AS despite several reminders from the College authorities.

It was observed that delay in execution of the project by PWD was due to procedural lapse in the Department which not only resulted in lapse of UGC assistance of ₹0.30 crore, but also created additional burden to the State exchequer. The work was completed (February 2020) with a total expenditure of ₹1.02 crore. Thus, the proposed women's hostel could be realised only after a gap of nine years.

Government replied (February 2023) that the case will be examined, and necessary action for having lapsed the fund will be taken by the CE (Buildings).

However, no further reply was received on this issue from the Chief Engineer (Buildings) (April 2023).

***Recommendations: Department should conduct reviews of deposits and securities, realise risk and cost, liquidated damages, insurance, etc., in time, fix responsibility in respect of lapses in financial management, provide maintenance grants and ensure appropriate use of allotments.***

### **2.3.6 Execution of Projects**

**The construction and maintenance activities of the Buildings Wing suffered because of time overruns due to non-compliance with prescribed procedures such as investigation, issuing Technical Sanction without ensuring proper design, detailed estimation and handing over the site without removing hindrances. Lapses in ensuring competitive bidding, insurance, liquidated damages, adequate Defect Liability Period, inspection of buildings and idling of buildings were noticed.**

#### ***2.3.6.1 Detailed estimate and Technical Sanction without structural design***

As per Section 1501 of KPWD Manual, the competent authority, as prescribed in the delegation of powers, shall approve the design of any kind of structure before the detailed estimate is prepared. The Assistant Engineer/Assistant Executive Engineer and the Executive Engineer shall personally inspect the site and see that the proposed design can be implemented on ground.

Further, as per Section 1601.1.2 of KPWD Manual, detailed estimate as per Appendix 1600D [check list for detailed estimate (Item No. 10 of the check list is detailed drawings and designs)] shall be submitted to accord TS for all works. This shall be prepared after detailed investigation of the site by the concerned authority after considering different items of specifications and cost involved. Further, by issuing TS, the competent technical authority is satisfied about the suitability of work in all respects.



Audit observed that in three<sup>67</sup> works, the CE issued TS without obtaining structural designs which resulted in substantial change in the scope of work such as omission of items, execution of additional items, variation design mix for RCC, etc., as mentioned in **Appendix 9**.

The CE (Buildings) accepted (March 2023) that TS was issued prior to obtaining structural designs in the cases pointed out by Audit. But the reason for the same was not furnished.

### 2.3.6.2 Time overruns in construction

As per Section 2112 of KPWD Manual, time shall be considered as the essence of contract. The extension of ToC that can be granted for a work at a time shall not exceed 25 per cent of the original time or six months, whichever is less. The maximum extension that can be granted for a work shall be limited to half the original ToC. Further, as per clause 19.2 of SBD, a hindrance register shall be maintained by the Departmental officer at site for recording various hindrances encountered during execution.

The Departments of the Government such as PWD, Health, Education, Revenue, etc., issue AS with specific objectives and entrust the Buildings Wing to construct buildings in a time bound manner. After obtaining AS, the Buildings Wing conducts soil investigation at the proposed site of construction, obtain architectural and structural drawings from the Chief Architect and the CE (Design & Administration) respectively. Technical Sanction (TS) is issued by the competent authority as per the financial delegation<sup>68</sup> as mentioned in 200B of KPWD Manual after preparing detailed estimates.

Audit analysed 104 selected works and observed that 87 works (84 per cent) did not adhere to the time schedule as mentioned in **Table 2.10** below.

**Table 2.10: Delay in execution of works**

| Range of delay  | Ongoing   | Completed | Total     |
|-----------------|-----------|-----------|-----------|
| 1 to 12 months  | 36        | 31        | 67        |
| 13 to 24 months | 7         | 9         | 16        |
| 25 to 50 months | 3         | 1         | 4         |
| <b>Total</b>    | <b>46</b> | <b>41</b> | <b>87</b> |

The following were observed:

- There was delay ranging from one month to 50 months for completion of 87 works (**Appendix 12**).
- Delays in completing the projects were primarily caused by avoidable factors, such as insufficient site investigation, failure to clear hindrances, changes in

<sup>67</sup> 1. Construction of male and female ward at Gandhigram Hospital of Dermatology, Koratty, Thrissur 2. Construction of Golden Jubilee PG Block at Government Arts and Science College, Kozhikode 3. Construction of Multipurpose Hospital block at District Hospital Mananthavady, Wayanad.

<sup>68</sup> Chief Engineer (Unlimited); Superintending Engineer (upto ₹250 lakh); Executive Engineer (upto ₹100 lakh) (Authority : GO(P)No.111/2019/Fin dated 21-08-2019).

location, and design revisions requested by user Departments, as well as delays in receiving structural designs. In addition, Covid-19 and related issues were cited as factors beyond the control of the Department, which also contributed to delays during 2019-22.

- In 45 works, ToC was extended above 50 per cent upto 333 per cent of the original ToC as against the admissible 50 per cent.
- In the selected divisions, hindrance registers were neither maintained properly nor submitted along with all the applications for ToC extensions.
- Construction delays have a significant adverse impact on the timely delivery of benefits to schools, colleges, hospitals, and offices operating in rented buildings.

In reply, Government/Department (February 2023) attributed the delays to various factors such as delay in approval of designs/estimates by the user Department, delay in conducting the soil investigation due to presence of hindrances and delay in obtaining structural drawing, pandemic situations, adverse climate, etc.

The reply was not acceptable since these issues other than pandemic or floods could have been prevented if planning, investigation and estimation were properly conducted and works were executed in a time bound manner.

#### **2.3.6.3 Awarding of works without ensuring competitive bidding**

As per existing norms<sup>69</sup> all tenders with amount of ₹five lakh and above shall be procured only through electronic procurement system. The GO was issued in line with Central Vigilance Commission (CVC) guidelines to ensure actual price discovery through competitive bidding process.

Audit observed that in six<sup>70</sup> works under the selected Divisions as in **Appendix 9**, original/additional works were arranged by the SE/EE without resorting to price discovery in a transparent manner and through competitive bidding which was an undue benefit/favour to the selected bidder and against the spirit of the GO and CVC guidelines.

CE replied (February 2023) that urgency, convenience, changes proposed by user department, etc., were reasons for entrustment of work without re-tendering/tendering. Reply is not acceptable as it vitiated the principles of transparent bidding.

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<sup>69</sup> G.O (P) No.324/2015/Fin dated 30 July 2015.

<sup>70</sup> 1. Construction of Multi-storied building for functioning of various Commissions at Pattom, Thiruvananthapuram 2. Construction of Model Residential School at Maruthonkara, Kozhikode 3. Construction of Golden Jubilee PG Block at Government Arts and Science College, Kozhikode 4. Govt. Taluk Hospital, Vatakara, Kozhikode 5. Urgent maintenance works for manufacturing unit at Central Prison, Thrissur 6. Infrastructure works for additional hospital building in Taluk Hospital, Sulthan Bathery, Wayanad.

#### 2.3.6.4 Lapses in ensuring Insurance Policies for works

As per contract condition No. 12 of SBD (August 2017), contractors should take insurance policies effective from the start date till the end of DLP (coverage value: 0.5 per cent of contract amount – minimum ₹two lakh and maximum ₹five lakh)<sup>71</sup> within 15 days of agreement. The insurance was intended to cover the events which are due to the contractor's risks such as (a) loss of or damage to the works, plants and materials; (b) loss of or damage to equipment; (c) loss of or damage to property (except the works, plant, materials and equipment) in connection with the contract; (d) workman compensation policy to cover personal injury or death. Further, in the event of the contractor not producing the insurance policy, the Engineer-in-charge may effect the insurance which the contractor should have provided and recover any such premiums which the Employer has paid from the payments otherwise due to the contractor. Further, as per the contract data, if the contractor fails to produce the insurance policies within 15 days of the start date of the work, 0.2 per cent of contract amount should be deducted.

Audit noticed that in 55 out of 57 works (**Appendix 13**) from the sample selected, the EEs neither obtained insurance policies for ₹1.31 crore<sup>72</sup> from the contractors, nor effected the required deductions amounting to ₹37.27 lakh<sup>73</sup> which unduly benefited contractors.

The Government, in its reply (February 2023), accepted the audit observation and assured that the above provision will be strictly complied with in future. CE replied that in one case insurance has been submitted, in 21 cases action is being initiated to recover the fine, in 17 cases even though part of SBD, the insurance provision was not added as a clause in LoA, in 15 cases insurance provision shall be complied with in future, and in one case no reply furnished. The reply is not acceptable as no action is initiated in 33 cases and the reply is silent on taking insurance in 54 cases till the completion of DLP.

#### 2.3.6.5 Non imposition of Liquidated Damages

As per clause 14 of SBD, milestone dates shall be specified in the contract data. Further, in the event of the contractor failing to comply with the milestones, he shall be liable to pay liquidated damages (LD) as provided for in the contract.

As per clause 15 of SBD, if the Contractor fails to maintain the required progress in terms of the agreed time and progress chart or to complete the work and clear the site on or before the date of completion of contract or extended date of completion, he shall pay as compensation, LD at one per cent<sup>74</sup> of the contract value per week

<sup>71</sup> Item 21 of Part IV of contract data included in the SBD (p.91).

<sup>72</sup> Wayanad: ₹ 15.57 lakh + Kozhikode: ₹ 35.02 lakh+ Thrissur: ₹ 37 lakh + Kottayam: ₹ 26 lakh + Special Buildings Thiruvananthapuram: ₹ 17.54 lakh.

<sup>73</sup> Wayanad: ₹ 5.19 lakh + Kozhikode: ₹ 7.47 lakh+ Thrissur: ₹ 11.44 lakh + Kottayam: ₹ 7.30 lakh + Special Building Thiruvananthapuram: ₹ 5.86 lakh.

<sup>74</sup> 0.1 per cent per week as per KPWD Manual.

of delay or part thereof. The aggregate of such compensation / compensations shall not exceed ten *per cent* of the contract value. It was observed that:

- Despite the contractors not achieving the milestones, the agreement authorities such as SEs/EEs did not levy the LD as per contract conditions which resulted in undue benefit to the tune of ₹28.98 lakh to the contractors in three<sup>75</sup> works.
- In another work<sup>76</sup> though the contractor deserted the work without any recorded reasons for more than 48 weeks, no action was initiated to collect the LD as envisaged in KPWD Manual. The amount of LD worked out as per the manual provisions amounted to ₹66 lakh<sup>77</sup>.
- Though milestones are fixed and made part of the agreement, no system existed in the divisions to assess the achievement against the milestones and to regulate the payments to contractors accordingly. The EEs of the executing divisions are responsible for non-imposition of LD.

In reply (February 2023), Government has acknowledged the lack of a project management system that clearly defines and monitors the achievement of milestones. Furthermore, they have pointed out that in many projects, delays cannot be solely attributed to contractors, so LDs are not imposed. The Government has assured to direct implementing authorities to impose LDs when contractors are responsible for the delays. However, the Government did not mention about the recovery of LDs in the case of works mentioned in the paragraph, in which delay was due to the contractors.

### **2.3.6.6 Defect Liability Period**

Government vide GO (P) No.161/2019/Fin dated 25 November 2019 modified the Defect Liability Period (DLP) for different types of works to ensure the minimum guarantee of public works under Civil, Electrical, Mechanical and Electronic Engineering Wings. As per the GO, DLP of Original Works-Buildings shall be 60 months. The modified DLP shall be applicable with effect from 25 November 2019 to all public works being executed through all Engineering Departments, PSUs and accredited agencies in the State. Audit noticed that in 23 building works (**Appendix 14**), works sanctioned at a total contract value of ₹42.80 crore and for which the agreements were executed after the date of the GO, the DLP provided was 36 months only.

The SEs/EEs who executed the work agreements were to ensure that the DLP in the contract is fixed as 60 months instead of 36 months. The shortened DLP poses a risk of defects occurring between the 37<sup>th</sup> and 60<sup>th</sup> month, which would compel the Government to spend funds from the exchequer to rectify the issues.

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<sup>75</sup> 1. Construction of school building of GHS, Kurumbala (₹7,31,341) 2. Construction of school building of Government UP school, Chennaiode (₹7,42,902) 3. PHC Kottur, Kozhikode (₹14,24,243).

<sup>76</sup> Construction of Architectural Block at the Rajiv Gandhi Institute of Technology, Pampady, Kottayam.

<sup>77</sup> ₹13.67 crore x 0.1 *per cent* x 48 weeks = ₹ 66 lakh.

Additionally, due to the failure of the agreement authorities to fix the DLP of 60 months in the contract, the securities worth ₹2.14 crore<sup>78</sup> will have to be released prematurely to the contractors 24 months in advance, resulting in undue benefit to them. The SEs/EEs who executed the work agreements were responsible for the lapse.

CE stated (March 2023) that though DLPs provided was for 36 months, securities will be released only after 60 months. Revised agreements modifying the DLP to 60 months should be executed to avoid any future claims for release of security on expiry of 36 months, and the validity of SD/BG got extended accordingly. In respect of one work<sup>79</sup> the AE reported (12 November 2019) that the site was ready for starting the work and the same intimated to the contractor, hence the DLP of the GO shall not be applicable. But the reply is not acceptable as the agreement was executed only on 04 December 2019, *i.e.*, after the date of GO.

### 2.3.6.7 Idling buildings

As per Section 2113 of KPWD Manual, completion certificate shall be issued by the agreement authority after satisfactory completion of works. Further, as per Section 2119 of KPWD Manual, completed building should be handed over to the user department by the engineer concerned.

- In respect of three works (two selected), Audit observed that the buildings were idling (October 2022) because the works were not completed in all respects. As per the records of the Division, the three works were completed and for two works completion certificates were issued. JPVs were conducted (October 2022) and the following points were noticed in this regard as shown in **Table 2.11**.

**Table 2.11: Idling of Buildings**

| Sl. No.      | Name of work   | Cost incurred (₹ in crore) | Reasons for idling   | Date from which the building is idling | User Department     |
|--------------|--|----------------------------|--|--|---------------------|
| 1.           | Construction of GHSS Parayanchery, Kozhikode                           | 1.81                       | Fire stair, flooring, handrail works, toilets, installation of lift, electricity & water connections for first & second floor not completed. (Figures 2.13 & 2.16) | March 2022                             | General Education   |
| 2.           | Construction of Academic block of SARBTM College, Koyilandi, Kozhikode | 4.91                       | Classrooms and facilities like staircase were not completed with allotted funds due to diversion of funds for additional structural work. (Figure 2.14)            | July 2022                              | Higher Education    |
| 3.           | Construction of ministerial staff quarters for GEC, Wayanad            | 7.88                       | Quarters not occupied due to lack of road access and unwillingness of staff (Figure 2.15)  | April 2019                             | Technical Education |
| <b>Total</b> |  | <b>14.60</b>               |  |  |                     |

<sup>78</sup> Five per cent of the total APAC(₹42.80 crore) for the 23 works.

<sup>79</sup> Construction of new building for Government LP School Kaipamangalam, Thrissur.



Idling  
Buildings



**Figure 2.13:** GHSS Parayanchery, Kozhikode - stair without handrails provided



**Figure 2.14:** Academic block of SARBTM, Kozhikode – staircase not completed



**Figure 2.15:** Staff quarters GEC, Wayanad - idling due to lack of access road



**Figure 2.16:** GHSS Parayanchery, Kozhikode - uncovered space for installation of lift

- In two divisions<sup>80</sup>, out of 95 completed buildings, 24 buildings (**Appendix 15**) constructed at a total cost of ₹25.50 crore were not handed over (October 2022) to the user Department even after a period of eight to 44 months. Besides this, there was delay ranging from eight to 20 months in handing over 10 buildings to the user Department as detailed in **Appendix 16**.

Reasons for idling of the above buildings were stated to be due to non-taking over of buildings by the user Departments due to lack of intended facilities and non-issue of completion certificates due to delayed preparation/sanction by the competent authorities.

In this regard Audit observed that if the completed buildings are not used, quality deterioration of fittings will occur and the DLP will be over without being utilised.

As per reply of CE (March 2023), out of the 22 buildings, only six buildings are yet to be handed over to user Departments and instructions have been issued to hand over the buildings. In respect of 16 buildings, CE stated that the buildings were handed over on completion, though documents were not maintained. KPWD

<sup>80</sup> Kozhikode and Wayanad divisions.

Manual stipulates issuance of completion certificate in the prescribed format and as such, the handing over of the buildings should have been documented. In the absence of proper documentation, it is difficult to ascertain the claim of the Department. In respect of delay in handing over of 10 buildings, it was stated that the handing over was delayed due to COVID, non-availability of water, procedural issues, and for the remaining two works, instructions have been issued to hand over the buildings. These two instances reveal the laxity of the Department in timely transfer of the completed buildings to the user Departments and non-maintenance of proper building records.

### **2.3.6.8 Lapses in implementation of maintenance activities of buildings**

Various sections in KPWD Manual details the maintenance activities of buildings. This indicates the importance of maintenance in the preservation and upkeep of buildings. The significant provisions for maintenance activities of buildings are as detailed below.

As per Section 2501.1 of KPWD Manual, maintenance of existing buildings is important than continuous creation of new assets to avoid deterioration of structures. As such, it is mandatory to conduct periodical maintenance of the existing assets to achieve their design life<sup>81</sup>.

According to Section 2800 of KPWD Manual, all Government buildings are to be maintained properly by PWD. In addition, Sections 2802 and 2804 stipulates that PWD Engineers shall be responsible for its upkeep, inspection and maintenance with periodicity of ordinary repairs. A timetable for the various operations in the different buildings under each Section shall be drawn out and adhered to by the AE.

Section 2802.2 of the KPWD Manual elaborated the periodicity of repairs of certain items in Government buildings. This includes, apart from others, white washing, painting of iron works, *etc.*, to be carried out annually and distemper washing (if provided), painting of walls, wood works and doors and windows, *etc.*, once in two years. As there is no annual maintenance schedule, the annual or biannual repairs to all existing buildings were not carried out and the maintenance of buildings were done based on request received from the user Departments.

According to Section 2804.2 of KPWD Manual, certain items of repairs of emergency nature shall be attended to immediately by the concerned AE under intimation to the immediate superior officers. Further, as per Section 2804.3, cracks, if any, noticed in any part of the building needs to be investigated thoroughly and cause ascertained before taking remedial measures.

Audit observed the following lacuna in the preservation of buildings:

- None of the divisions test-checked prepared a priority list of buildings which were due for ordinary repairs. Further, funds provided for repairs were not adequate for maintenance activities. Failure of the Buildings Wing in obtaining the required fund for maintenance approved from Government, coupled with

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<sup>81</sup> Life of column structures: 75 years, load bearing structure: 55 years (Central PWD norms).



Buildings with  
lack of maintenance  
facilities

absence of planning and prioritisation, as discussed in *Paragraph 2.3.4.1*, resulted in lack of periodical maintenance of buildings.

- None of the five selected Buildings Divisions followed the above procedure for conducting routine maintenance activities. Instead, maintenance works on buildings were carried out by the Divisions based on requests received from the users. Routine maintenance works were to be undertaken to ensure timely upkeep and usable condition of the building during its design life. As such, periodical maintenance was not ensured in any of the buildings.

Audit noticed that the inspection of buildings/structures as required were not carried out by EE/AEE/AE. During JPV (October 2022 & January 2023) conducted in selected buildings, several defects in the buildings such as cracks on the surface wall, damage to floor tiles, growth of trees and moss, water logging on the roofs, leakage of concealed pipes and taps, drizzling of water into the rooms, *etc.*, were noticed. Bad condition of public toilets in Civil Station due to lack of proper maintenance was also noticed during the JPV.



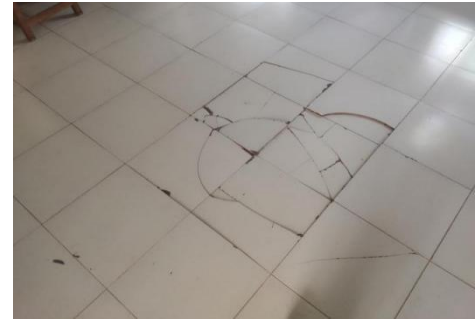
**Figure 2.17:** Vegetation growth on building at ITI, Chakkai, Thiruvananthapuram



**Figure 2.18:** Exposed reinforcement at EC Block, CET, Thiruvananthapuram



**Figure 2.19:** Cracks and vegetation growth in Pavamani Quarters, Kozhikode



**Figure 2.20:** Cracked floor tiles at Chemical block, GEC, Kozhikode





**Figure 2.21:** Badly maintained toilet at Civil Station, Thrissur



**Figure 2.22:** Cracked tiles in Ministerial Staff Quarters, Kozhikode

Government replied (February 2023) that paucity of funds was the main reason which affected maintenance works like face lifting of Civil Stations and other major buildings and assured that prioritised list of buildings would be prepared from the current year for effective maintenance. It was also planned to implement running contract for periodic maintenance of buildings.

As per Appropriation Accounts 2021-22, it was mentioned that during 2019-20 and 2020-21 the entire provision under 2059-60-053-93 was surrendered and for 2021-22 under 2059-80-053-99, the anticipated saving was 25 *per cent* of the original grant or appropriation. From this it is evident that the Department's claim regarding shortage of funds affected maintenance activities of buildings is incorrect.

### 2.3.6.9 Inspection of buildings under the Divisions

As per Section 202.6 of KPWD Manual, EE is responsible for the proper maintenance and upkeep of all buildings under the Division. Further, the EE, AEE and AE are required to inspect the buildings under their charge at the required periodicity for the purpose of identifying defects, safety certification and for preparation of annual estimates for maintenance, as mentioned in **Table 2.12**.

**Table 2.12: Periodicity of inspection of buildings**

| Authority (Section No.)                          | Quantity and periodicity   | Purpose  |
|--|--|--|
| Executive Engineer (EE) (202.6), (2804)          | All major buildings once a year & 50 <i>per cent</i> of other buildings under his charge | Identifying defects  |
| Asst. Executive Engineer (AEE) (1010), (2804)    | All buildings once a year  | Ensuring safety for use  |
| Assistant Engineer (AE) (1010) / AE (Electrical) | All buildings twice a year   | Issuing safety certificates, ensuring safety, preparation of estimates for maintenance, quality control, check measurement |

Audit observed that in none of the selected Buildings Divisions, the EEs, AEEs and AEs conducted the periodical inspections of buildings as stipulated.

In the absence of periodical inspections, proper upkeep and maintenance of buildings/structures were not prioritised and implemented as required. Moreover, the requirement of finding the defects in time and attending to it then and there to avoid further deterioration of the structure were also not followed in any of the Divisions test checked.

Government accepted (February 2023) the Audit observation and stated that CE has given directions to the officials to conduct periodic inspections to ensure proper maintenance of buildings.

***Recommendations: The Department should ensure timely completion of projects and handing them over to the user Departments without delay to ensure accomplishment of intended benefits. In order to avoid financial liabilities by way of claims the Department should adhere to obtaining insurance policies for works before effecting payments. Department should impose liquidated damages if milestones are not achieved due to fault of contractors. Department should ensure timely maintenance in order to assure the longevity of buildings.***

### **2.3.7 Quality control, Monitoring and Internal control issues**

***Implementation of Quality Control measures in construction activities was inadequate due to lack of timely monitoring of quality control aspects.***

*Significance of Quality Control and Periodic Inspections in Ensuring Building Safety: Lessons Learned from the High Court Complex at Ernakulam.*

*The High Court Complex at Ernakulam was built during 1994 to 2005, with a total area of 52,333 sq.m. over nine floors incurring an expenditure of ₹53.51 crore. The work was arranged through three contractors viz., Sri. I Basheer, Sri. P T Mathai and Sri. K V Joseph & Sons and the work was executed by the EE, Buildings Division, Ernakulam. In 2014, cracks were found at the bottom of the column of 'B Block', prompting a detailed technical study by National Institute of Technology, Trichy (2015). Study report indicated instances of lapses in Quality Control in construction. Rehabilitation work was undertaken in two phases, with the first phase completed in March 2019 and the second phase ongoing. Similar cracks were found near the VIP parking area, and a detailed technical study/structural inspection was entrusted to Kerala Highway Research Institute. A preliminary inspection found corrosion of reinforcement of beams and roof slab suspected due to moisture leakages through cracks. Another technical inspection found cracks and exposed reinforcement, recommending remedial measures to rehabilitate the Block.*

*The studies indicated significance of quality control during construction and the importance of periodic inspections to ensure timely rectifications of minor defects.*

#### **2.3.7.1 Quality Control issues in building works**

Different types of materials and grades of mortar/concrete are used for the construction of building works. As per Section 2 read with Appendix C9 of KPWD Manual, the contractor is responsible for sample collection, testing the samples and grades of materials used for the works and submission of test result to the Engineer.

The Engineer can authorise payment for the work if he is satisfied with the test results. Failure of the EEs in this regard led to following lapses.

➤ **Failure to include list of mandatory Quality Control (QC) tests in tender and contract documents**

As per Section 2103 of KPWD Manual, a list of mandatory tests should be prepared and attached with the tender documents. The SEs/EEs who arranged the work were to ensure compliance to this provision. However, Audit noticed that this provision of the Manual is not adhered to by any of the tendering authorities. Inclusion of the mandatory tests as part of the tender documents would ensure compliance to the QC conditions.

The CE stated (February 2023) that in PRICE software necessary slots are provided for uploading quality test results and based on this further processing of bills are done.

➤ **Failure to conduct QC tests**

As per Section 602.3 of QC Manual, the contractor shall produce manufacturer's quality certificate for each supply of cement and steel used in the work which should be ensured by concerned Engineer-in-charge. Further, as per Section 2404 of KPWD Manual and Section 7.1 of QC Manual, contractor shall carry out the required first tier QC tests at his own cost during the course of a work, for all works costing above ₹15 lakh.

Section 400 to 600 of QC Manual prescribes the frequency of samples of test and the procedure to be adopted for sampling to be conducted by the contractor for each type of materials/grades of mortars/concrete/steel, *etc.* Further, random sampling procedure shall be adopted to ensure that each concrete batch shall have a reasonable chance of being tested, that is the sampling should be spread over the entire period of concreting and cover all mixing units. Required first tier tests for the materials/mortar/concrete/steel, *etc.*, and their frequency are as detailed in **Appendix 17**. Second-tier QC checks/tests are to be done by the QC wing of PWD on a random basis. The third tier of QC is technical audit by external agency/expert empanelled for the purpose and shall be done for completed projects, which are above ₹five crore.

As per Section 202.6 of KPWD Manual, the EE should ensure that all mandatory tests have been performed at each stage of a running bill, before making payments. EE shall verify and ensure availability of the required test equipment for field tests as well as an updated copy of specifications and copies of accepted schedule at sites of works. However, in the test checked files the following lapses were observed:

- Contractors are responsible for collection of samples, testing the samples (First tier QC test) and submission of test results along with the CC bills for making payment. But in respect of 14 number of works (**Appendix 17**), neither test results were submitted along with CC bills, nor the sanctioning

authority insisted for the same before passing the bills. In the remaining cases only a limited number of tests were conducted.

- Important tests such as slump, water, specific gravity, bend/re-bend which were essential for the first-tier quality control were not conducted in any of the test checked works except in two<sup>82</sup> cases, of which in one instance the water quality test was done only when CTE pointed out the lapse.
- Manufacture quality certificates in respect of cement and steel used in work were found to be kept in five works only.
- There was no evidence of conducting QC tests of masonry works in 40 works as given in **Appendix 18**.
- Appendix for QC monitoring to be submitted along with every CC bill were not properly submitted in any of the test-checked divisions except Wayanad.
- The above instances indicate that the Buildings Wing did not insist on conducting and submitting the mandatory QC tests and its results which can affect the quality of work.

In respect of 16 works in which no tests were conducted, no specific reason was provided for not conducting QC tests in 11 works, and in 5 works it was stated that tests were conducted/not required. Also, in respect of 40 works, CE did not provide clear remarks regarding 28 works. In the remaining 12 works, CE claimed that slump test, water quality test, masonry tests and cube tests were conducted. However, the reply is not acceptable since results of the above tests were not produced to Audit for verification. As such, due to lapses on the part of EEs of Divisions to comply with provisions of KPWD/QC Manuals, conduct of the above tests remained doubtful.

➤ **Failure to conduct routine pile test**

As per Section 305.2 of QC Manual, routine pile test, a qualitative test to obtain the assurance on the structural stability of the construction should be conducted in the manner prescribed in IS 2911 part 4. Further, the EEs of the Divisions were to ensure that the test is conducted as prescribed. Pile foundation was adopted in seven<sup>83</sup> out of the 104 selected works. However, in none of these seven works, routine pile load test was conducted. Non-conducting of the test seriously compromised the quality assurance.

Government replied (February 2023) that specific report on the above-mentioned works will be provided by CE after getting detailed report from the respective division offices.

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<sup>82</sup> Construction of Naval Training Centre at I Kerala NCC, Aakkulam, & Five storied building for Vigilance and Anticorruption Bureau Phase I, Muttathara, both at Thiruvananthapuram.

<sup>83</sup> 1. Construction of Court Complex, Irinjalakuda (Phase.I), Thrissur 2. GHSS Kattoor, Thrissur 3.Revenue Tower Nedumangad, Thiruvananthapuram 4. Construction of Naval Training Centre at I Kerala NCC, Akkulam, Thiruvananthapuram 5. Multi-purpose Hospital Block at District Hospital, Mananthavady, Wayanad 6.Taluk Hospital, Sulthan Bathery, Wayanad 7. Golden Jubilee PG Block at Government Arts & Science College, Kozhikode.

However, CE has not provided any detailed reply till date (April 2023).

➤ **Mix design**

According to Section 2208.9.2 of KPWD Manual, all materials shall be got approved by the concerned AE or AEE, as the case may be, and job mix formulae/ mix design shall be got approved by the concerned EE. For this, the relevant details have to be submitted at least 20 days ahead of the planned date of commencement of work.

Audit observed that in 11 works (*Appendix 19*), mix designs were not prepared and/or approved by the Divisional Officers, resulting in compromising of quality assurance. The EEs of Divisions were to ensure preparation of the mix designs as required.

In reply, CE (February 2023) accepted that mix designs were not approved in these cases, and it was assured that in future, adequate care would be taken to see that all the mix designs will be got approved by the agreement authority in advance before actual execution of works at site.

➤ **Guarantee Bond for leak-proof / termite proof works**

As per Part VI of the SBD, Guarantee Bond for termite-proof/water and leak-proof work is to be obtained/collected from the contractor to ensure guarantee and liability of the contractor for such works for 10 years, wherever such items of works are provided in the estimate.

In four works<sup>84</sup> where such items were executed, no Guarantee Bonds were collected by the EEs from the contractors for ensuring guarantee of the works as required.

Government replied (February 2023) that specific report on the above-mentioned works will be provided by CE.

However, CE has not provided any reply in this regard (April 2023).

➤ **Intimation of contracts to QC wing**

As per Section 8 of QC Manual, the agreement authority shall forward copy of contract documents to the AEE of the QC Lab concerned within 10 days of executing the agreement for conducting second tier QC check at QC lab of PWD.

Audit noticed that in respect of works executed by SE (Judicial Circle) and EE of the selected Divisions, copy of contract documents are not forwarded to QC lab. Consequently, those works may escape from the ambit of second tier QC tests.

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<sup>84</sup> 1. Construction of I and II floor for 450 bedded hostel for ladies at Government Medical College, Kottayam (GMCK) 2. Providing lady bystanders area and toilet facilities at III floor of cardiology and cardiothoracic block at GMCK 3. Construction of 50 bedded ward and administrative block at Primary Health Centre, Vamanapuram, Thiruvananthapuram 4. Construction of new Revenue Tower at Nedumangad, Thiruvananthapuram.

Government assured (February 2023) that strict instructions will be issued to agreement authorities in this regard and will be monitored through internal audit.

#### **2.3.7.2 Lapses in setting up of Field Lab at site**

As per Section 7.1 of QC Manual, the contractor shall establish an onsite laboratory with calibrated equipment if the estimated project cost is above ₹two crore.

Setting up of field lab was mandatory for the works costing above ₹two crore for continuous monitoring of quality in works. Out of 104 selected works, 54 works were ongoing, out of which cost of 26 works were above ₹two crore. JPV conducted at seven out of the 26 ongoing work sites revealed that while no separate field labs were set up in five sites, equipment for field labs were randomly placed at two sites as given in *Appendix 20*.

Besides, in all the 42 selected works above ₹two crore, the records maintained at the Divisions did not contain any documentary evidence for setting up of the field lab as required. Due to the absence of equipment, engineering personnel and non-production of all test results along with the running bills, Audit could not ensure that first-tier quality control tests with the required frequency and specifications were conducted during execution.

The CE replied (February 2023) that field labs had been established in all the sites and the tests were properly conducted. The reply was not acceptable as no documentary evidence to ensure the proper functioning of field labs were available in the files. Also, the same was confirmed through the JPVs conducted.

#### **2.3.7.3 Absence of Project review and monitoring mechanism**

According to Section 2106 of KPWD Manual, the progress report of the work is very important for PWD and the Government as it enables them to monitor the progress of each work. Progress report in the prescribed form shall be forwarded by the AE to AEE and to EE on monthly basis. The EE shall forward consolidated progress report of the works to the CE and SE before 15<sup>th</sup> of every month. Further, the EE shall review progress of works monthly, the SE quarterly and the CE half yearly. The physical and financial progress of each work shall be analysed in detail with the concerned field officers and bottlenecks if any and remedial measures suggested for speedy execution of the work including observations of the reviews shall be recorded in the minutes and shall be forwarded to all subordinate officers.

Audit observed the following:

- Though soft copies of the progress of works are updated from the field offices as required, there was no evidence of convening reviews at Circles and Divisions. The minutes of the meeting conducted on the progress of work was not maintained and communicated to field officers.
- In the works test checked, though milestones are mentioned in the contract data, achievement of the milestones were not verifiable since the milestones in terms of physical quantities or financial progress were not worked out. As

such, in none of the selected works achievement of milestones was reviewed, which led to delay in completion of the works.

Despite the review and monitoring of projects at the apex level through progress reports, Audit observed that issues related to each work like hindrance free land, proper estimation, timely design, quality control, *etc.*, and weaknesses in contract management were not analysed and/or resolved. This indicated lack of effectiveness of the review and monitoring mechanism.

Government replied (February 2023) that the project review and monitoring mechanism is implemented through Project Management Software (PMS) which is also monitored at the Government level. Instructions have also been issued for ensuring the timely review of projects.

Audit, however, observes that the efficacy of the system remained doubtful due to persistent issues leading to delays, contract management, *etc.*, as discussed in the earlier paragraph.

➤ **QC Monitoring**

As per Appendix I & III of the QC Manual, check list for QC and concrete pour monitoring are required to be prepared. These appendices were designed to ensure that the prescribed quality control procedures adopted in construction were carried out properly. But four<sup>85</sup> out of five selected Divisions did not ensure that the appendices were prepared in the prescribed manner and attached with the work bills before sanctioning the payment.

In the absence of the above Appendices, conduct of mandatory Tier I quality tests by the contractor were not ensured by EE while passing the bills which affected quality assurance of works to that extent. Lack of assurance in quality control in building construction may lead to negative consequences such as safety hazards due to structural failure, structural defects leading to cracks, leaks, foundation problems, increased maintenance and repair costs and reduced design life.

Government replied (February 2023) that PWD has taken all effective measures for ensuring quality of works. As part of this, PWD has published Quality Manual. The tests as per the Manual are conducted at site. But in certain cases, for works which were executed in previous years, certain defaults in the implementation of mandatory quality tests are noted. This is now corrected. At present in the online bill preparation through PRICE software, necessary slots are provided for uploading quality test results and based on this only further processing of bills is done. Reply was not tenable since Audit has noticed non-conducting of QC tests in works as mentioned in earlier paragraphs, which could have been detected if the above-mentioned Appendices were prepared properly.

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<sup>85</sup> Kozhikode, Thrissur, Kottayam, Thiruvananthapuram Special Buildings Divisions.

➤ **Non/Short deployment of contractor’s engineering personnel at site for monitoring the work**

As per the provision in SBD, Special conditions of contract (SCC), Item No. 16.1, the contractor shall employ engineering personnel, during the tenure of the contract for works supervision, depending upon the cost of work as shown in **Table 2.13**.

**Table 2.13: Personnel to be deployed for work supervision**

| Cost of work           | Details of personnel required                       |
|------------------------|---|
| ₹5 lakh to ₹75 lakh    | One Diploma (Civil Engineering) holder              |
| ₹75 lakh to ₹150 lakh  | One Engineering Graduate + One diploma holder       |
| ₹150 lakh to ₹250 lakh | Three Engineering Graduates + One diploma holder    |
| ₹250 lakh to ₹500 lakh | Four Engineering Graduates + Two diploma holders    |
| ₹500 lakh to ₹20 crore | Three Engineering Graduates + Three diploma holders |
| Above ₹20 crore        | Four Engineering Graduates + Five diploma holders   |

In the case of non-deployment of engineering personnel, Clause 16.2<sup>86</sup> of SBD provides for recovery of amount equivalent to cost of remuneration of the number of personnel absent. Further, as per norms, the details of engineering persons employed should be attached with each running account bill.

Audit observed that in thirteen works against which 43 engineering personnel were to be deployed, in seven works there was no evidence regarding employment of any engineering personnel and in six works there was only eight engineering personnel deployed, as per the certificate produced along with the bills (**Appendix 21**). No details in respect of the equivalent amounts assessed and/or recovered are available in the files.

Joint Physical Verification conducted (17 January 2023) in respect of four ongoing works revealed that the engineering personnel available at the sites were only one each as against the required 25 number of persons, as given in **Appendix 21**, which indicates lapses in QC monitoring of work during execution.

The Government replied (February 2023) that in some cases, situations arose where contractors has not deployed necessary staff. In such cases strict directions will be issued. All measures will be taken by the CE (Buildings) to ensure compliance with the SBD clause at all levels. Specific replies on the works pointed out will be submitted soon. However, specific reply from CE is still awaited (April 2023).

<sup>86</sup> Special Conditions of Contract.



**2.3.7.4 Third tier QC (Technical Audit)**

Section 7.3 of QC Manual provides for conduct of Technical Audit by an external agency/expert selected for the purpose after the completion of a project having cost above ₹five crore. This will form the third tier of QC system.

Audit observed that the Department has not selected any such agency/expert and no Technical Audit of completed projects was conducted as required.

Government assured (February 2023) that necessary action will be taken in this regard at the earliest.

**2.3.7.5 Internal inspections**

As per Circular No. 79/2019/Fin. dated 19 September 2019, all Departments are required to submit details of offices to be inspected during the financial year to Government during the first month (April) of the financial year itself. As per Sections 202.4 (Item No.9) and 202.6 (Item No.37) of KPWD Manual, SEs and EEs should conduct periodical inspections of the Division offices and Sub-divisions respectively at least once in a year.

The details of internal inspections conducted and shortfall in respect of the five selected Divisions and three Circle offices is given in **Table 2.14**.

**Table 2.14: Internal inspections conducted during 2019-2022**

| Inspecting authority                      | Inspections due | Inspections conducted | Shortfall | Percentage of short fall |
|---|-----------------|-----------------------|-----------|--------------------------|
| SE (North)                                | 18              | 6                     | 12        | 67                       |
| SE (Central)                              | 9               | 9                     | 0         | Nil                      |
| SE (South)                                | 21              | 3                     | 18        | 86                       |
| EE (Wayanad)                              | 9               | 5                     | 4         | 44                       |
| EE (Kozhikode)                            | 9               | 2                     | 7         | 78                       |
| EE (Thrissur)                             | 12              | 0                     | 12        | 100                      |
| EE (Kottayam)                             | 15              | 2                     | 13        | 87                       |
| EE Special Buildings (Thiruvananthapuram) | 15              | 0                     | 15        | 100                      |

Audit observed that:

- Internal inspections within the Buildings Wing were not effective since all the Divisions and two of the Circles were not following the schedule for internal inspection.
- CEs office is also not preparing annual plan for internal inspections as directed by the Government.

Timely conduct of internal inspections is important to ensure effective internal control to assess the organizations systems and procedures in the areas of financial management, viz., budgeting and expenditure control, technical matters, viz.,

estimation, execution and quality control, *etc.* As such, lack of internal inspections could have left any deficiencies in the above areas unnoticed.

Though COVID related issues were stated (April 2023) to be the main reason for non-conduct of inspections, it is not acceptable as the lapses were throughout in all the three years. Moreover, one of the Circles conducted inspections as required highlighting the importance of prioritizing internal controls. Therefore, it is essential that the Department take steps to address the lapses and prioritize the timely and effective conduct of internal inspections in the future.

Government replied (February 2023) that the CE had given directions to conduct periodical inspections at Division offices and Sub-divisions as per provisions of KPWD Manual.

### 2.3.7.6 Maintenance of important registers

According to Kerala Financial Code Volume I, maintenance of control registers is mandatory in every office. KPWD Manual also prescribes for maintenance of certain registers as part of internal control mechanism. Audit noticed that the Divisions were not maintaining some of the important registers as mentioned in **Table 2.15**.

**Table 2.15: Non-maintenance of important registers**

| Section of KPWD Manual            | Name of the Register                                 | Purpose of the register   | Remarks  | Risk   |
|-----------------------------------|--|---|--|--|
| 2901.1.3 read with Appendix 2800A | Register of Buildings                                | Inventory of all buildings under each division with details of all periodical works done, disposals by dismantling or sale, <i>etc.</i>                                   | In the absence of this register, alterations/disposals due to old age, details of old structures and all periodical works done on the structure of buildings were not verifiable. Details of all structure originally borne on the physical register vis-a-vis asset data on PRICE was not verifiable. | If not maintained regularly, it will adversely affect the longevity of old structures and may pose hazards to its inhabitants. |
| 2801.1.3.1                        | Register of Inventory                                | Building-wise inventory of all fixtures <i>viz.</i> , electrical, civil and furniture provided, got signed by the user Department/person at the time of first occupation. | In the absence of this register, details of the inventories provided in each building at the time of handing over was not verifiable.  | Lack of inventory may result in losses by way of damages, theft, <i>etc.</i> , remaining unaccounted for.                      |
| Section 4.2.7 of KPWA Code        | Register of Divisional Accountant's audit objections | The Divisional Accounts Officer is required to maintain a Register of Objections raised during processing and verification of CC bills in KPWA Form 57.                   | In the absence of this register, objections raised during the processing of CC bills could not be reviewed periodically to ensure that the objections have been rectified.   | Non-rectified objections may result in undue advantages to contractors and thereby loss to exchequer                           |
| 202.6                             | Register of check                                    | EE has to test check 10 <i>per cent</i> of value of all works beyond the TS power of  | The check was intended as an internal control system to prevent overpayment on account of  | Lack of check measurement register may result  |

| Section of KPWD Manual | Name of the Register | Purpose of the register                                  | Remarks   | Risk  |
|------------------------|----------------------|--|---|---|
|                        | measurements         | AEE and maintain a register for such check measurements. | incorrect measurement, adoption of incorrect specification, <i>etc.</i> Therefore, in the absence of this register, it was not verifiable whether the EEs were implementing the above internal control. | in incorrect measurements going unnoticed thereby affecting the quality assurance and giving undue benefit to contractors |

The EEs were responsible for ensuring the proper maintenance of the required registers. However, due to failure of the EEs in this regard, planning and monitoring of assets, shortfall in inventories provided, check of persistent irregularities and assurance of accuracy in payment of bills, *etc.*, were not assured.

Government replied (February 2023) that the CE had given strict instructions to all Divisions for proper maintenance of registers.

#### ***2.3.7.7 Absence of performance appraisal of contractors***

According to Section 2004.1 of KPWD Manual, a record of appraisals of contractors over the years will serve as a useful tool while taking decision about award of works to that contractor and also while renewing the registration. Such a proforma will be filled by each EE with whom the contractor is working, countersigned by the Deputy CE concerned and submitted to the CE.

Audit noticed that performance appraisal of contractors as envisaged in KPWD Manual was not kept in any of the Divisions. It was observed that if such exercise is carried out, it can be a tool in improving quality of works and can help in eliminating contractors who do not have clean track records.

Government replied (February 2023) that discussion is going on for developing a performance appraisal of contractors and uploading the same in PRICE Software. A committee shall be constituted to frame the criteria for performance appraisal of contractors.

Eventhough the Government assured to form a committee to frame the criteria for performance appraisal, no effective mechanism is in existence for monitoring the performance of contractors despite the provision for the same being available in KPWD Manual for the past 11 years.

#### ***2.3.7.8 Chief Architect's certification on buildings constructed by PWD***

As per proceedings of the Department Tender Committee, on completion of construction of buildings, the Chief Architect will issue a Certificate to the effect that the building is constructed as per the approved drawings, observing the provisions of National Buildings Code/Kerala Municipal Buildings Rules. However, the direction is not complied with in any of the completed building works in the selected Divisions, thus defeating the very purpose of the certification.

While accepting the above, Government stated (February 2023) that certification is not done since the constructions are completed only in a phased manner, and that Chief Architect's suggestions are incorporated during the construction activity. Government assured that a technical committee including the Chief Architect will be constituted to inspect the building before handing over.

#### ***2.3.7.9 Non-compliance to provisions of GST***

Section 37 of the Goods and Service Tax (GST) Act 2017 mandates issuance of an invoice or a bill of supply for every supply of goods or services. The invoice should contain description, quantity and value and such other particulars in case of supply of service. However, Audit noticed that none of the Divisions test-checked obtained the GST invoices from the contractors.

The GST invoice is an important document since it evidences the supply of goods or services which is also a mandatory document for the recipient to avail Input Tax Credit (ITC) wherever applicable. Since the rental charges collected from PWD rest houses attract GST, this can be availed as ITC while submitting returns, which will be an additional revenue to the State. In the absence of the GST invoices, there is risk of loss of revenue to the exchequer on this account.

Government replied (February 2023) that detailed reply will be furnished after obtaining remarks from the Divisions.

However, reply of the Chief Engineer has not yet been received (April 2023).

#### ***2.3.7.10 Inadequate safety and sanitary measures at site***

As per Clause 62 of SBD, the contractor shall, at his cost, provide temporary safety measures required during construction to avoid any chance of mishaps. Further, as per Clause 68.4 of SBD, it shall be the responsibility of the contractor to ensure that protective gears shall be provided and is always worn by all personnel working at the site during the term of the work.

As per Clause 69.2 of SBD, the contractor has full responsibility for maintaining the site in good and clean condition and removing all trash and debris daily to the satisfaction of the Engineer. The contractor is responsible for providing adequate sanitary facilities and maintaining them in a clean and healthy condition. If the contractor fails to comply with the above, the Engineer-in-Charge will have the authority to get the same cleaned by an external agency and debit the expenses incurred to the contractor's account.

During JPV (October 2022), Audit observed the following:

- Labourers were working without wearing helmets, safety jackets, etc., in seven work sites<sup>87</sup> of Special Buildings Thiruvananthapuram, Kozhikode and Wayanad Divisions. Non-compliance to the conditions would risk the safety of the labourers.
- In the work 'Construction of Additional Block for Dental College, Kozhikode', the debris were seen dumped inside the rooms which were already completed during the first phase of construction, which violated Clause 69.2 of SBD.
- JPV was conducted (November 2022) at seven sites under Wayanad Division and it was observed that the contractor had not provided sanitary facilities for Engineers and labourers at three<sup>88</sup> sites. Non-compliance of this condition could compromise cleanliness and hygiene at the work site.

Government replied (February 2023) that lack of awareness of SBD conditions among contractors was the main reason for non-compliance. The Government assured that awareness classes will be arranged for contractors in this regard. However, Audit observes that agreement authorities and field staff of the Department are also responsible for non-compliance in this regard.

***Recommendation: The Department should strictly implement quality control in works by improving review/monitoring and establish proper internal control mechanism.***

#### ***2.4 Modification of Bill of quantities and non-levy of liquidated damages led to an undue favour to the contractor of ₹21.84 crore***

**Modification of Bill of Quantities after executing agreement resulted in extra financial commitment of ₹6.97 crore to the exchequer and undue financial benefit to the contractor to the tune of ₹14.87 crore.**

Government of Kerala (GoK) implemented<sup>89</sup> Kerala State Transport Project (KSTP) with financial assistance from World Bank for the improvement of state highways. The 2<sup>nd</sup> phase<sup>90</sup> of KSTP included the upgradation work of 54 km of Thalassery- Valavupara road (UG III)<sup>91</sup>. The work awarded (May 2013) to

<sup>87</sup> 1. Construction of additional block for Dental College, Kozhikode 2. New building at Mental Health Centre, Kozhikode 3. Govt. Taluk Hospital, Vadakara, Kozhikode 4. Construction of multipurpose Hospital Block at District Hospital, Mananthavady, Wayanad 5. Additional Hospital Building at Taluk Hospital, Sulthan bathery, Wayanad 6. Additional Hospital Building at Taluk Hospital, Vythiri, Wayanad 7. Office complex for accommodating various commissions at Pattom, Thiruvananthapuram.

<sup>88</sup> 1. Multipurpose Block, District Hospital, Mananthavady, Wayanad 2. Additional Hospital Building, Taluk Hospital, Sulthan Bathery, Wayanad 3. Additional Hospital Building, Taluk Hospital, Vythiri, Wayanad.

<sup>89</sup> In two phases between June 2002 and April 2021.

<sup>90</sup> June 2013 to April 2021.

<sup>91</sup> UG III- Upgradation of Road from Thalassery (Km 01+200) to Valavupara (Km 55+200) of SH 30.

M/s.SACYR – ESSAR<sup>92</sup> was later terminated (April 2015) at the risk and cost of the contractor. The balance work was split into two works - UG IIIA<sup>93</sup> (29 km) and UG IIIB<sup>94</sup> (25 km). KSTP tendered (July 2015) the first reach of work - UG IIIA on *item-rate basis* and awarded (January 2016) the work to M/s Dinesh Chandra R Agrawal Infracon (P) Ltd, Ahmedabad (contractor) for ₹156.33 crore.

Audit scrutiny of the files of the Office of the Executive Engineer, KSTP, Kannur revealed undue favour to the contractor and additional expenditure of ₹21.84 crore as detailed below:

**(a) Modification of Bill of quantities after executing Agreement resulted in additional expenditure of ₹6.97 crore to the Government**

In the Estimate Bill of quantities (BoQ), KSTP provided<sup>95</sup> item No:1700-10 ‘Construction of precast RCC drain of M20 Grade including steel reinforcement’ for a total quantity of 5,292 m<sup>3</sup> @ ₹12,215/m<sup>3</sup> (₹6.46 crore) against which the contractor quoted ₹4,200/m<sup>3</sup> (₹2.22 crore) in the Agreed BoQ<sup>96</sup> i.e, 66 per cent less than the original estimate. Unit of measurement of the item was cubic metre (m<sup>3</sup>) in the Estimated and Agreed BoQs.

After commencement of the work (June 2016), the contractor informed (March 2017) the Project Management Team (PMT) of KSTP that the rate for the said item was quoted considering the unit of measurement as linear metre (Lm). The contractor pointed out that the unit of measurement of the item was linear metre in the Special specifications<sup>97</sup> in tender documents, which superseded the BoQ as per the ‘Priority of documents’<sup>98</sup>. The contractor requested (March 2017) to modify the unit of measurement of the item as linear metre, on that ground.

On the basis of the request made by the contractor, the Chief Engineer (CE), Projects, KSTP directed (August 2017) not to operate the item- 1700-10 any further and to substitute it with a new variation item. Subsequently, the PMT issued (August 2018) a variation order<sup>99</sup> (VO 2-4) for item no:1700-10, but changing the unit of measurement as linear metre and increasing the quantity of the item to 23,891 Lm (5,567 m<sup>3</sup>) amounting to ₹9.32 crore. As per the VO, unit rate for the new item was ₹3,899/Lm (₹16,733/m<sup>3</sup>).

Audit observed (October 2020) that discrepancy in units of measurement for the same item of work in separate documents enabled the contractor to request for

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<sup>92</sup> Euro-Indian Joint Venture.

<sup>93</sup> UG IIIA – Upgradation of the road from Thalassery to Kalarode (Km 01+200 to Km 30+000).

<sup>94</sup> UG III B – Upgradation of Road from Kalarode to Valavupara (Km30+000 -Km55+200).

<sup>95</sup> Bill.No:4- Drains and Walling.

<sup>96</sup> Part of the agreement.

<sup>97</sup> Special specifications comprise amendments/modifications/additions to the MoRTH specifications of items referred in General specifications and items not covered in it.

<sup>98</sup> Clause 1.5 of Particular conditions.

<sup>99</sup> A variation order is a written agreement to modify, add to, or otherwise alter the work from that set forth in the contract. Variation order in KSTP works is similar to the Revised Estimate in PWD works.

change in the unit of measurement, after commencement of work. This lacked justification on the following grounds:

- i) In case of item rate contracts, bidders are bound to quote their rates specifically for each item of work. For the aforesaid item, the contractor quoted the rate against the quantity expressed in cubic metres in the BoQ. Moreover, the contractor had given (September 2015) written statement that they have examined and had no reservations to the tender documents.
- ii) The contractor did not raise any queries on the BoQ/specifications in the pre-bid meeting held in August 2015. The Department and the contractor entered into agreement (January 2016) in mutual acceptance of all the facts and figures in the attached documents, including BoQ.
- iii) In the second part of the work, *i.e.*, UG IIIB, both the estimated and agreed rates of 'Construction of precast RCC drain of M20 Grade including steel reinforcement' were in cum.

Though the contractor quoted the rates against the quantity in cum, the CE/PMT approved (August 2017) the proposed change in unit of measurement to Linear metre, thereby granting an undue benefit to the contractor. This resulted in extra financial liability to the Government amounting to ₹6.97 crore as given in **Table 2.16** below:

**Table 2.16: Extra financial liability on total quantity of the item of work**

| Particulars                     | Item of work                                   | Quantity   | Rate (₹)                           | Total cost(₹)      |
|---------------------------------|--|--|------------------------------------|--------------------|
| Estimated BoQ                   | 1700-10:                                       | 5,292 m <sup>3</sup>   | 12,215/m <sup>3</sup>              | -                  |
| Variation Order -2-4 (A)        | Construction of precast RCC drain of M20 grade | 23,891 Lm  | 3,899/Lm (₹16,733/m <sup>3</sup> ) | 9,31,51,009        |
| Agreed BoQ (B)                  | including steel reinforcement                  | 5,566.60 m <sup>3</sup><br>(23,891 Lm x 0.233m <sup>3</sup> *) | 4,200/m <sup>3</sup>               | 2,33,79,720        |
| <b>Excess liability (A - B)</b> |  |  |                                    | <b>6,97,71,289</b> |

\* As per rate analysis of similar work 'Upgradation of road from Pilathara (Km 0+000) to Pappinisseri (Km 20 + 800) of SH-67' conducted during the same period.

In its reply, KSTP stated (January 2023) that it had initiated the variation item to avoid the probability of the contractor raising claims citing discrepancies and that there was no financial loss to the Government as the rate quoted by the contractor for VO-2 was less than the original rate.

The reply is not acceptable as it is the prerogative of the contractor to satisfy himself of all doubts before making the quote and signing the agreement. Further, the departmental authorities should have made a thorough scrutiny of the documents during the selection and finalisation of the tender. The variation order for the item was issued in excess of 44 *per cent* of the estimated amount which benefitted the contractor resulting in loss to the Government. As such the claim of KSTP that the issuance of variation order benefitted the Government is not acceptable.

**(b) Non imposition of liquidated damages amounting to ₹14.87 crore for the extension of time of completion**

As per the agreement (General condition 8.7, Delay Damages) if the contractor fails to comply with sub clause 8.2 (Time for Completion), the contractor shall pay delay damages to the employer for that default. Clause 2116.1 of KPWD Manual also provides for compensation for delay/ liquidated damage. As per the Contract Data, delay damages for Milestone I<sup>100</sup> was ₹3,00,000/day and for Milestone II<sup>101</sup> was ₹5,00,000/day; the maximum amount being limited to 10 *per cent* of the final contract price.

As the contractor, M/s Dinesh Chandra R Agrawal Infracon (P) Ltd., Ahmedabad could not achieve the required progress for Milestones I and II, four extensions of time of completion (EoT) were granted<sup>102</sup> by the Project Director without imposing any delay damage, although the reason for the delay was due to lack of sufficient men and machinery. The sluggish progress regarding the work was pointed out several times by the PMT/CSC (2019 and 2020).

Non-imposition of delay damages resulted in undue benefit to the contractor to the tune of ₹15.63 crore (maximum amount limited to 10 *per cent* of contract price as detailed in agreement).

In its reply KSTP stated (January 2023) that recommendation for extension of time was not due to the fault of the contractor; but it was confirmed by KSTP that an amount of ₹76.11 lakh was deducted as liquidated damages. The reply is contradictory as it has been stated that the extension was not due to the fault of the contractor, but liquidated damages has been partially deducted. However, Audit observed that the Construction Supervision Consultant and KSTP requested the contractor several times to restart the work.

KSTP gave undue favour to the contractor by issuing variation order after finalisation of tender and extra time for completing the work. This has resulted in extra financial commitment to the Government.

The matter was referred to Government as Statement of Facts (September 2022) and Draft Paragraph (December 2022). Reminder for reply was issued in February 2023 and DO reminder from Principal Accountant General was also issued in March 2023. Senior Deputy Accountant General visited the Secretary, PWD for the reply by the end of March 2023. In addition, contacted the Department several times telephonically too. Despite all the efforts taken by this office the Government reply is still awaited (December 2023).

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<sup>100</sup> 10 Km. Continuous Stretch of Road from Km 01/200 to 11/200. Completion up to BC level – 15 months from date of commencement (26/09/2017).

<sup>101</sup> 28.80 Km. Continuous Stretch of Road from Km 01/200 to 30/000. Completion in all respect in 24 months from date of commencement (26/06/2018).

<sup>102</sup> upto 31/03/2019, 31/12/2019, 31/03/2020 and 31/10/2020.



**Recommendation: The Government may direct KSTP to examine item-wise rates quoted by contractors with estimated PAC before finalising a tender in order to safeguard the interests of the Government.**

**2.5 Incorrect estimate leading to excess expenditure and undue benefit to an accredited agency**

**Public Works Department entrusted the construction of two flyovers to an accredited agency based on incorrect estimates by NH Division, Kozhikode resulting in excess expenditure and undue benefit to the agency to the tune of ₹2.87 crore.**

Government of Kerala (GoK) implemented (June 2015) District Flagship Infrastructure Project (DFIP) for infrastructure development in all districts, utilising 50 per cent of the additional revenue generated from sale of fuel in the State. GoK issued (February 2016) Administrative Sanction (AS) for 10 works during the first phase, which included construction of flyovers at Thodayad and Ramanattukara<sup>103</sup> under National Highway (NH) Division, Kozhikode. The PWD, vide G.O. (MS) No.7/2016/PWD dated 20 February 2016, approved the entrustment of the works to Uralungal Labour Contract Co-Operative Society Ltd., (ULCCS) without following tender procedures and in violation of GO(P)No.453/2015/Fin dated 09 October 2015, wherein it was specified that maximum value of single work that could be entrusted to an accredited agency was ₹50 crore. The works were entrusted at estimate rate<sup>104</sup> (with cost index @ 38.10 per cent) with provision for actual conveyance of materials brought to site.

In connection with the entrustment and execution of the works, Audit noticed the following irregularities which resulted in escalation of project cost:

**(a) Excess expenditure of ₹1.76 crore due to the provision of actual conveyance for materials instead of standard carriage**

GoK, while approving the provision for actual conveyance in the AS, insisted on the scrutiny of Detailed Project Reports (DPR) of the subject works by the Chief Technical Examiner (CTE)<sup>105</sup> before issuing Technical Sanction. Accordingly, CTE observed that the estimate was not prepared using Project Information & Cost Estimation (PRICE)<sup>106</sup> Software, which allowed only standard carriage (5 km) and not the actual conveyance; extra conveyance was covered in cost index for the district adopted in the estimate. Hence the rates adopted in the sanctioned estimates

<sup>103</sup> Construction of Flyover at km 14/700 Thodayad Phase I and Construction of Flyover at km 27/330 Ramanattukara Phase I along NH 66 Bypass (Old NH 17).

<sup>104</sup> Based on 2014 Delhi Schedule of Rates (DSoR), (Thodayadu - ₹59 crore and Ramanattukara- ₹85 crore).

<sup>105</sup> The Chief Technical Examiner (CTE) is a part of Finance Department. The role of CTE is to inspect different aspects such as materials, earthworks, initial and final levels, agreements, etc. in respect of public works undertaken by various departments.

<sup>106</sup> PRICE software is an initiative of Government of Kerala for unifying the work methodology and rates across the State based on CPWD DSoR, which incorporates all aspects of management of public works comprising of estimate preparation, RE, eMBook and eBills.

should have been reviewed by Chief Engineer (CE) to avoid any loss to the exchequer, as no competitive tenders were invited. The Technical Sanction authority should have considered modifications to the rates only after analysing the site-specific difficulties.

Based on the observations of the CTE, GoK repeatedly directed<sup>107</sup> the Chief Engineer (NH) (CE) to take urgent action. However, the CE continued to endorse the justifications of the Executive Engineer (EE), NH Division, Kozhikode that the PRICE software was not implemented in NH Wing during the preparation of DPR of the works and that as GoK granted actual conveyance in the AS, considering the requirement of huge quantities of good quality construction materials in highway projects and non-availability of quarries within five km, the provision for actual conveyance was included in the Technical Sanction also.

Even before the AS for the works was granted, in response to the CE's direction (August 2015) to resubmit the estimates of both the works with minimum carriage for materials, the EE re-submitted (September 2015) the estimate without any modification justifying that the works would consume huge quantities of construction materials and it was not practically possible to arrange all those materials locally or even from within the district and hence the conveyance charges of all materials were as per actual distance.

Audit observed the following:

- The CTE had observed that all other public works in Kozhikode then, were being executed without actual conveyance. Hence the EE's conclusion that it was not practical to arrange all those materials locally lacked justification. This has been reiterated (November 2017) by the Government as well.
- The non-compliance of directions from higher authorities/ Government by the SE/EE resulted in undue benefit to the contractor and consequent loss to the State exchequer, due to the provision of actual conveyance in the estimate. Audit calculated the loss due to allowance of actual conveyance for materials in case of four major items included in both works, which amounted to ₹1.76 crore (*Appendix 22*).
- There was lapse on the part of the CE in not implementing the GoK order, which directed to prepare cost estimates of all public works by various engineering departments through PRICE software with effect from September 2015. Moreover, the Government had ordered that all AS exceeding ₹50 lakh should be issued only through PRICE software. The preparation of estimates for the works outside PRICE software facilitated the inclusion of actual conveyance for materials in estimate.

The Public Works Department replied (January 2023) that in order to ensure the required strength of concrete and uninterrupted supply of immense quantities of materials no cost index was applied and actual conveyance charges have been allowed. It was also pointed out that PRICE software is only a mechanism or

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<sup>107</sup> 08/11/2016, 27/03/2017 and 15/11/2017 (Thodayad) and 20/09/2016 and 28/03/2017 (Ramanattukara).

guideline for the preparation of an estimate and hence the principle governing the estimation is MoRTH specification which is indisputably on a higher footing. The reply is not acceptable since the CTE's observation that all other public works in the District were being implemented without actual conveyance. Further, Government ordered that all public works with AS exceeding ₹50 lakh should be issued only through PRICE software to avoid cost escalation due to various reasons and hence it is not just a mechanism or guideline for preparation of estimate.

**(b) Undue benefit of ₹1.11 crore to the contractor due to inclusion of unwarranted provisions in the estimate**

During the scrutiny of estimates of both the works, Audit noticed inclusion of separate items of work, which were already covered in other items. The unnecessary provisions resulted in additional expenditure, thereby extending undue financial gain to the contractor, as given in **Table 2.17**. The excess expenditure has been worked out in **Appendix 23**.

**Table 2.17: Unwarranted provisions in the estimate**

| Sl. No. | Item of work   | Reason for duplication of payment  | Excess expenditure (₹) |
|---------|--|--|------------------------|
| 1       | Pile load test   | As per MORTH data 12.37 (Specifications 1118), the item is incidental to the work of boring piles and not to be included separately.   | 27,67,500              |
| 2       | Chipping and removing excess length of RCC pile  | As per MORTH Specifications 1118 and 1119, the work is included in contract unit rate for installation of piles and not to be included separately  | 9,06,533               |
| 3       | Driving down MS liner already fabricated to the required depth                           | As per MORTH Specifications 1118 and 1119, the work is included in contract unit rate for permanent steel liners and not to be included separately   | 8,32,650               |
| 4       | Bored cast in situ reinforced piles (rock penetration of 60 cm depth in each bore hole). | As per MORTH Specifications 1118 and 1119, the length of pile in the finished structure complete in place is measured, limited to that shown and ordered by the Engineer. There is no distinction between penetration through hard strata or rock and socketing into rock. | 47,34,282              |
| 5       | Bored cast in situ M 35 grade RCC pile   | As per the approved rate analysis of sub-data of M35 concrete, five <i>per cent</i> of cost of material and labour was allotted towards underwater concreting. As the subject works do not require under water concreting, the extra five <i>per cent</i>                  | 19,12,604              |

| Sl. No.            | Item of work | Reason for duplication of payment   | Excess expenditure (₹) |
|--------------------|--------------|---|------------------------|
|                    |              | allowed on cost of material and labour on this account in the data was irregular. |                        |
| <b>Grand Total</b> |              |   | <b>1,11,53,569</b>     |

Audit observed that the inclusion of the above items were superfluous and hence their inclusions in the approved estimate resulted in excess expenditure of ₹1.11 crore.

The Technical Sanction implies that the competent technical authority is satisfied about the quantities, specifications, and rates of different items of work and the suitability of the work to meet the requirements and structural soundness. The subject works were entrusted to an accredited agency at estimate rates, which were not at all competitive. Audit observed that the CE accorded Technical Sanction without due diligence, thereby incurring avoidable excess expenditure of ₹2.87 crore.

The Public Works Department replied (January 2023) that the specifications for pile load test under clause 1118 and 1119 of MoRTH specification is a cumbersome procedure and in the absence of data, it has to be worked out separately. It was also replied that in the rate analysis there was no provision for chipping and removing of excess length of RCC pile and hence included as a separate item. As far as socketing of the pile in hard rock, the extra amount was granted for avoiding the extra cost to be sanctioned for driving through hard rock. The reply is not tenable as it is against the 'Specifications for road and bridge works' published by MoRTH and also against MoRTH Standard Data Book for the said items of work; the additional items were already covered under other items of work included in the estimate.

The awarding of works without tendering was violation to then existing Government order on maximum value of single work that can be awarded without tendering. Further, entrustment of the work based on incorrect estimate resulted in excess expenditure to the exchequer and undue benefit to the contractor to the tune of ₹2.87 crore.

The matter was referred to Government as Statement of Facts (October 2022) and Draft Paragraph (December 2022). Reminder for reply was issued in February 2023 and DO reminder from Principal Accountant General was also issued in March 2023. Sr. Deputy Accountant General visited the Secretary, PWD for expediting the reply by the end of March 2023. In addition, the Department was contacted several times over telephone. Despite all the efforts taken by this office, the Government reply is still awaited (December 2023).

***Recommendation: The Government may give strict directions to the department officials to adhere to the Rules and guidelines and to observe due diligence while preparing estimates for various works.***

**2.6 Irregular repayment of duly recovered amount by reopening closed work bills and improper adjustments made in the final bills resulting in loss to Government**

**Loss to Government to the tune of ₹134.32 lakh occurred due to reopening and irregular refund in respect of three closed work files and improper adjustments made in the final bills of three work files in PWD Roads Division, Kasaragod.**

Prior to September 2003, for road works under Public Works Department (PWD), the Department procured and supplied bitumen to the contractors as per quantity of work executed and the cost of departmental material was recovered from the contractor at the time of payment of Running Account Bills. But Government, vide G.O No.50/2003 PWD dated 6 September 2003, had dispensed with the departmental supply of bitumen except in case of small works costing up to ₹six lakh (enhanced to ₹one crore through the revision of KPWD Manual in 2012) and authorized the contractors to purchase bitumen directly from M/s Bharat Petroleum Corporation Ltd., (BPCL) and submit invoices for reimbursement. Since the cost of bitumen is borne entirely by the Department, it is treated as departmental bitumen and the cost of the bitumen was then recovered from the contractor's Running Account Bills.

This system was introduced to insulate the contractor's from suffering loss due to increase in the price of bitumen in the market and also to benefit the Department when the price of bitumen decreases in the market.

Out of 557 works for which payments were released by Executive Engineer (EE), PWD Roads Division, Kasaragod during July 2018 to March 2021, Audit test checked (April/July 2021) 53 work files and observed that in respect of three closed work files even though the Department had recovered the cost of bitumen the Divisional Accountant (DA) and the EE had re-opened the files and extended undue benefit to contractors by irregularly sanctioning repayment of ₹71.49 lakh. In respect of three other works, there was non/short recovery and refund of recovered amount in subsequent bills to the tune of ₹62.83 lakh. The details are given in **Appendix 24**.

The following observations are made in this regard:

- By interpreting the recovery of cost difference of bitumen as a mistake, the DA *suo-moto* or based on request of the contractors, reopened the accounts of three works (Sl. No. 1 to 3 of **Appendix 24**) and the Executive Engineer approved the repayment of ₹71.49 lakh.
- In order to process the repayments, the DA had relied on Clause 28 of the contract agreements which states that no departmental materials shall be supplied to the contractor. Since the materials are purchased by the contractor the word differential cost is not applicable. But this is a misrepresentation of the fact that, the estimate cost of bitumen is recoverable from the contractor at the rates mentioned in the agreement, which is clearly stated in the agreement schedule. This system of recovery

and reimbursement existing in the Department since 2003 helps protect the contractor when there is hike in market prices, and gives benefit of price drop to the exchequer.

On bringing these irregularities to the notice of the Superintending Engineer, PWD (Roads) North Circle, Kozhikode (SE), an internal audit of PWD Roads Division, Kasaragod was conducted (August 2021) by the SE and the report of SE concurred with the findings of Audit. The SE also admitted that the Divisional authorities had violated the extant procedures and that excess amounts had been paid to the contractors. It was also stated that re-opening of the files after final payment and the release of the already recovered cost of bitumen was viewed seriously and that directions will be issued to the Divisional Authorities.

Government, in its reply, stated (April 2023) that Chief Engineer (Roads) has been instructed to make all recoveries and credit to the respective head of account within one month and to initiate departmental action against the DA and the EE for the irregularities.

The irregular refund and improper adjustments in respect of duly recovered cost of bitumen in these works had resulted in loss to the exchequer.

**Recommendation:** Government should issue suitable instructions to the departmental officials to guard against such malpractices in future.

## Directorate of Mining and Geology

### 2.7 Mining activities in Kerala

**Sustainable mining operations are essential for revenue generation and for development of the State. But exploitation of mineral resources should be done in a controlled manner to avoid environmental degradation and depletion of resources. There is also a need for proper system of collection of mineral revenue due to Government. The Mines and Minerals (Development and Regulation) Act, 1957 and Kerala Minor Minerals Concession Rules, 2015 provides for regulation of mining operations through granting of mining licences/ permits, fixing and collection of mineral revenue, defining of illegal mining and punishments therefor. Deficiencies were, however, observed in rules/ guidelines and its enforcement which led to illegal mining, over-exploitation of mineral resources, and loss of revenue. Further, the impact of illegal mining on environmental degradation was not assessed by Government/ Department of Mining and Geology for remedial action.**

#### 2.7.1 Introduction

Minerals are finite and non-renewable natural resources and, hence, their exploitation should be guided by long term national goals and perspectives. Minerals are categorised as Minor minerals and Other or Major<sup>108</sup> minerals. The

<sup>108</sup> Connotes 'specified minerals' and 'notified minerals' listed in First Schedule and Fourth Schedule, respectively, to the Mines and Minerals (Development and Regulation) Act, 1957.

respective State Governments are the owners of all minerals located within the boundary of the States. Mineral reserves in Kerala (State) are scant, and include heavy mineral sands<sup>109</sup>, Building Stone, ordinary earth, *etc.*, as shown in **Appendix 25**. Minor minerals constituted 97.37 *per cent* [4,929.74 lakh Metric Tonnes (MT)] of the total mineral reserves (5,063.10 lakh MT) in the State. Mining activity in the State was mainly confined to the extraction of Granite Building Stone (GBS) which constituted 98.75 *per cent* of the total minor mineral reserves in the State. Government earns mineral revenue by granting concessions for mining. Mineral revenue comprised royalty<sup>110</sup>, price<sup>111</sup>, surface rent<sup>112</sup>, dead rent<sup>113</sup>, compounding fee, *etc.*, accruing to Government of Kerala (GoK).

The Department of Mining and Geology (DMG), functioning under the Department of Industries and Commerce, GoK, oversees the mineral exploration and mineral administration in the State. DMG has a Directorate, 14 District Offices (one in each district), three Mineral Squads<sup>114</sup>, and laboratories for testing minerals, gems and chemicals. The administrative head of DMG is the Principal Secretary to the GoK, Department of Industries and Commerce, who is assisted by the Director of Mining and Geology.

DMG conducts prospecting of minerals through its Exploratory and Prospecting Division. Its activities include preliminary and detailed geological mapping, trenching, pitting, drilling, sampling and chemical analysis, and mineral identification of samples. Further, prospecting studies are also conducted for deposits of minerals.

DMG issues quarrying permit which is granted for a period not exceeding one year at a time and quarrying lease as a mining lease granted for a period from five to 12 years. The process of granting or rejection of quarrying permit/ lease is as follows:

- submission of application for quarrying permit/ lease with required documents;
- mining plan<sup>115</sup>;
- Environmental Clearance (from Ministry of Environment, Forest and Climate Change/State Level Impact Assessment Authority, wherever applicable);
- No Objection Certificate (NoC) from revenue authorities if the quarrying area is *poramboke* land/revenue land;

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<sup>109</sup> Ilmenite, Rutile, Zircon, Monazite and Sillimanite.

<sup>110</sup> The amount to be paid in advance by every applicant for a quarrying permit at the rates specified in KMMC Rules.

<sup>111</sup> Twice the amount of royalty as provided in Rule 108 (2) of KMMC Rules.

<sup>112</sup> Rent payable to Government every year for surface area allotted to quarrying permit holder/ lessee, not exceeding the assessable land tax.

<sup>113</sup> Rent payable by a lessee to Government every year (except for first year) from the date of execution of mining lease at applicable rate or amount of royalty payable, whichever is higher.

<sup>114</sup> Operating in northern, central and southern regions of Kerala.

<sup>115</sup> A comprehensive document showing *inter alia* the precise area of excavation of mineral, the nature and extent of mineral deposit, and the annual programme for excavation (Rule 55 of KMMC Rules).

- NoC from Forest Department if the quarrying land is forest land;
- NoC from statutory authorities (Pollution Control Board),
- issue of Letter of Intent for permit/ lease, and
- site inspection and inquiry by Geologist.

Thereafter, the application is disposed of by granting mining permit/ lease and if rejected, an opportunity of being heard will be provided to the applicant. In the case of mining lease, a lease deed is to be executed within six months of granting the lease.

### 2.7.2 Audit objectives

The objectives of the Compliance Audit were to ascertain whether

- regulatory framework for mining activities was adequate;
- mining receipts were assessed and collected as per rules; and
- action against illegal mining was taken as per rules.

### 2.7.3 Audit criteria

Audit criteria for Compliance Audit were derived from the following sources:

- Mines and Minerals (Development and Regulation) Act, 1957;
- Kerala Minor Minerals Concession Rules, 2015;
- Kerala Land Conservancy Act, 1957;
- Kerala Minerals (Prevention of Illegal Mining, Storage and Transportation) Rules, 2015;
- National Mineral Policy, 2019; and Notifications/ orders issued by Government of India, GoK.

### 2.7.4 Audit scope and methodology

Audit selected six<sup>116</sup> (out of 14) districts in the State based on Stratified Random Sampling and then selected 55 (out of 502) quarrying leases on judgemental basis from these six districts for detailed scrutiny. Other records of DMG and those related to extraction of major minerals by two Public Sector Undertakings<sup>117</sup> (PSUs) were also examined. *Google Earth Pro*<sup>118</sup> was used to independently identify and report on cases of illegal mining. Audit was conducted from November 2021 to July 2022 and from February 2023 to March 2023, covering the period from April 2016 to March 2022.

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<sup>116</sup> Idukki (10 out of 18 leases), Kannur (10 out of 53 leases), Kollam (10 out of 23 leases), Kottayam (10 out of 20 leases), Thiruvananthapuram (10 out of 52 leases) and Wayanad (all five leases) districts were selected.

<sup>117</sup> Mining permits for major minerals in the State were granted to The Kerala Minerals and Metals Limited (KMML) and Malabar Cements Limited (both State PSUs), and to IREL (India) Limited, a Central PSU. The records of KMML and IREL (India) Limited were examined in audit.

<sup>118</sup> Software provided by Google that ties extensive satellite data together into one system to visualise the Earth and study various geographic aspects. It allows users to search for specific co-ordinates and download files of geo-spatial data in a specified format.



Audit commenced with an Entry Conference (December 2021) with the Principal Secretary (Industries and Commerce), GoK and the Director of Mining and Geology wherein the objectives, criteria, scope and methodology of audit were explained. Initial draft report was issued (January 2023) to GoK and replies of the Director of Mining and Geology received thereto have been considered and suitably incorporated in this report. Replies from Department of Industries and Commerce, GoK are awaited. The draft report was discussed (May 2023) in Exit Conference with the Principal Secretary (Industries), GoK and the Director of Mining and Geology.

### **2.7.5 Status of previous Audit Report**

A Performance Audit on 'Licensing and monitoring of quarrying of minor minerals' covering the period from 2011-12 to 2015-16 was conducted during February – July 2016 and included in the report (Audit Report No. 6 of 2017) of the Comptroller and Auditor General of India for the year ended 31 March 2016. It examined whether licences were issued in accordance with rules, monitoring of the compliance with the terms and conditions of licence and existing system was effective in curbing illegal mining.

The Public Accounts Committee discussed (August 2022) the Performance Audit Report. The recommendations of the Committee are awaited (March 2024).

### **Audit Findings**

On scrutiny of the records, the following were observed.

### **2.7.6 Inadequacy in regulatory framework for mining activities**

Article 246 of the Constitution of India empowers the Parliament to enact laws regarding regulation of mines and mineral development under the control of the Union *i.e.*, Major minerals. State Governments are empowered to enact laws related to regulation of mines and development of Minor minerals subject to the provisions of Union List.

Government of India (GoI) promulgated the Mines and Minerals (Development and Regulation) Act, 1957<sup>119</sup> (MMDR Act) for development and regulation of mines and minerals. GoK notified (February 2015) the Kerala Minor Mineral Concession Rules, 2015<sup>120</sup> (KMMC Rules) for granting quarry lease/ permit and regulating mining activities in the State, and the Kerala Minerals (Prevention of Illegal Mining, Storage and Transportation) Rules, 2015 for curbing illegal mining<sup>121</sup> activity and unauthorised transportation of minerals. The National Mineral

<sup>119</sup> As amended from time to time, the last amendment being in March 2022.

<sup>120</sup> In supersession of the Kerala Minor Mineral Concession Rules, 1967.

<sup>121</sup> As defined in Rule 2 (viii) of the Kerala Minerals (Illegal Mining, Storage and Transportation) Rules, 2015.

Policy - 2019 of GoI, which replaced the National Mineral Policy - 2008, also defined the role of States in the regulation of minerals.

Audit analysed the adequacy of regulatory framework to govern and regulate mining operations in Kerala and observed the following shortcomings.

#### **2.7.6.1 Absence of exclusive mineral policy for the State**

A mineral policy aims to ensure scientific and systematic exploration of mineral resources, and effective regulation and sustainable development of the mining sector. The Ministry of Mines, GoI advised (2010) the State Governments to frame State Mineral Policy based on the Model Mineral Policy 2010 drafted by it.

Audit observed that GoK did not design a mineral policy for the State despite the directions of Ministry of Mines. The State did not have a policy on issues related to mining operations such as exploration and auction of minerals, rehabilitation of affected persons/ areas and proper plan of sustainable mining, identification of potential revenue, restoration of mines, utilisation of technology in detecting encroachments/ illegal mining *etc.* This prevented the State from effectively estimating mineral resources through prospecting and exploration, auctioning of minerals and planning for prudent utilisation of minerals, thereby depriving the State of potential revenue.

DMG stated (March 2023) that it would bring the matter of framing of mineral policy to the attention of GoK for necessary action.

#### **2.7.6.2 Absence of legal provision for auctioning of minor minerals**

Sections 10 B and 11 of MMDR Act prescribe auction by competitive bidding to be followed by States for grant of any mining lease. Ministry of Mines, GoI issued (August 2015) directives to States to adopt a transparent system of auction for issue of concessions for minor minerals as done for major minerals. Ministry of Mines, GoI launched (February 2017) a web portal<sup>122</sup> and mobile application named Transparency, Auction Monitoring and Resource Augmentation (TAMRA) to monitor clearances and approvals in relation to grant of mineral licences, and State Governments were required to regularly update information in TAMRA.

Audit observed that GoK neither implemented TAMRA nor framed any rule for auctioning of mineral licences/ leases as required by MMDR Act and the directives of GoI. GoK did not auction mineral blocks by competitive bidding and Licences were issued on 'first come first serve' basis. The system lacked transparency and fairness and did not ensure that all eligible persons get a fair opportunity of competition. It also posed the risk of foregoing higher revenue by the GoK.

DMG stated (March 2023) that Department of Land Revenue has issued guidelines for auction of minor minerals in Government land and the process of auction is under progress. It added that a Joint Working Group had conducted field inspection and delineated boundary of auctionable area in respect of two bauxite mineral blocks in Kasaragod district, and a report has been submitted to GoK.

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<sup>122</sup> <https://www.tamra.gov.in>.

The fact, however, remained that KMMC Rules were yet to be amended to enable auctioning of minerals and to make the process of granting of mining leases transparent.

**Recommendation: GoK should formulate a mineral policy for effective estimation and prudent utilisation of mineral resources in the State and frame rules for auctioning of mineral licences/leases in a transparent manner.**

### 2.7.7 Deficiencies in KMMC Rules with respect to realisation of royalty

In Kerala, mining of minor minerals is regulated through KMMC Rules. The Rules contain provisions related to grant/ renewal of quarrying lease/ permit, mining plan, assessment and collection of royalty, appeal and review, penalties, etc.

Audit observed the following deficiencies in KMMC Rules :

#### 2.7.7.1 Absence of royalty rate for quarrying in large areas

Rules 3 and 7 of KMMC Rules provide for different rates of consolidated<sup>123</sup> royalty, ranging from ₹75,000 (for an area up to 10 Ares) to ₹ seven lakh (for an area between 40 Ares and 50 Ares). As per Rule 3(3), the area under a quarrying permit should be a contiguous unit not exceeding one Ha<sup>124</sup>.

Audit observed that the rule did not specify the rate of consolidated royalty for quarrying from an area exceeding 50 Ares leading to loss of revenue for the Government. Thus, for instance, royalty applicable for an area between 40 Ares and 50 Ares *i.e.*, ₹ seven lakh only could be recovered in the case of five lessees who were granted quarrying permit for extraction of GBS from areas ranging from 75.80 Ares to 100 Ares as shown in **Table 2.18** below.

**Table 2.18: Instances noticed where permits were granted for area exceeding 50 Ares**

| Sl. No. | Name of permit holder    | Area (in Ares) | Date of issue | District |
|---------|--------------------------|----------------|---------------|----------|
| 1       | David P V                | 100.00         | 29/03/2016    | Wayanad  |
| 2       | T V Elias                | 100.00         | 22/02/2016    |          |
| 3       |                          | 100.00         | 05/04/2016    |          |
| 4       | Basil T K                | 100.00         | 18/05/2016    |          |
| 5       | Sudheesh A T             | 80.99          | 08/03/2016    |          |
| 6       | Jayarajan <sup>125</sup> | 75.80          | 20/06/2016    | Kollam   |

As indicated in **Table 2.18**, in one district viz., Wayanad, there was a continuous trend of the Directorate issuing five permits for areas exceeding 50 Ares during the period from February to May 2016 at the rates applicable for allotment of area between 40 Ares and 50 Ares.

<sup>123</sup> A method of collecting royalty based on the extent of land from which mineral is extracted or the capacity of metal crusher unit used for extraction of GBS.

<sup>124</sup> Equal to 100 Ares.

<sup>125</sup> KOMPAS ID: KOL/Q/2015/135.

DMG stated (November 2023) that the extant consolidated royalty payment system stands removed vide the KMMC (Amendment) Rules 2023 dated 31 March 2023.

#### **2.7.7.2 Absence of penal provisions for default in remittance of royalty**

As per Rule 89 of KMMC Rules, while registering a Metal Crusher Unit (MCU), the lessee may opt for remittance of consolidated royalty specified in Schedule III of the Rule in four quarterly instalments before the last day of March, June, September, and December. The KMMC Rules, however, did not contain any provision to penalise the lessee or compensate the Government for any delay in payment of instalments of consolidated royalty though there was a statutory requirement for payment of royalty/ consolidated royalty in advance. To cite an instance, Shri A. H. Sherief<sup>126</sup> opted for and was granted registration during 2016-17 for MCU at Muvattupuzha taluka in Ernakulam district on payment of consolidated royalty of ₹16 lakh, to be paid in four equal instalments before the last day of each quarter of the financial year. The lessee remitted two instalments and defaulted in payment of balance royalty. The District Geologist issued (June 2017) demand notice for remittance of dues, to which the lessee responded by preferring (October 2017) an appeal before the appellate authority<sup>127</sup>. The appeal petition was disposed of (March 2019) after the lessee informed that royalty dues of ₹ eight lakh was remitted in October 2017. Absence of penal provisions for delay in remittance of consolidated royalty not only led to potential loss of revenue but also resulted in the absence of an effective deterrent to prevent default in payment.

DMG stated (March 2023) that the existing system of registration of MCUs is proposed to be removed to avoid revenue loss and necessary amendment to KMMC Rules has been proposed to GoK.

#### **2.7.8 Short collection of mineral revenue**

Rule 7 of KMMC Rules requires every applicant for a quarrying permit/lease to pay royalty in advance at specified rates based on the quantity of mineral allowed to be extracted. As per Rule 89, an applicant possessing an MCU for extraction of GBS may opt for advance payment of consolidated royalty in four quarterly instalments, at specified rates based on the capacity of MCU or the extent/ area of land from which mineral is allowed to be extracted.

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<sup>126</sup> KOMPAS ID: ERN/Q/2015/119.

<sup>127</sup> As per Gazette Notification issued (May 2016) by GoK, the Deputy Secretary in Department of Industries and Commerce was designated as Appellate Authority and the Principal Secretary (Industries) was designated as Final Appellate Authority.

To ensure compliance to the conditions mentioned in the permit/ lease, and to collect compensation and ensure that there are no dues of compensation with the lease holder while renewing the lease/ permit, GoK had directed (January 2015) the Director of Mining and Geology to issue necessary instructions to its officers to conduct periodical check in all quarries. The Kerala Minerals (Prevention of Illegal Mining, Storage and Transportation) Rules, 2015 requires [Rule 26(4)] that transportation of extracted mineral should be accompanied by valid mineral transit pass issued by the geologist after collection of royalty. Transportation without mineral transit pass is punishable under Rule 29, with imprisonment up to two years and/ or fine up to ₹ five lakh.

**2.7.8.1** Indian Bureau of Mines (IBM) classified (April 2018) Aluminous Laterite containing minimum 20 per cent of Aluminium Oxide as Bauxite, a major mineral. The royalty to be collected for Laterite (used for industrial purposes) was fixed at ₹95 per MT as per KMMC Rules, while that payable for extraction of Bauxite was based on *ad valorem* rate of 25 per cent of its average sale price<sup>128</sup> notified periodically by IBM.

DMG granted (March 2021) quarrying lease to Shri V. S. Bashir<sup>129</sup> for extraction of three lakh MT of Laterite (Industrial Purpose) from 4.856 Ha in Kannur district. The laboratory test report<sup>130</sup> (September 2017) of Laterite produced by Shri V. S. Bashir along with application for lease and the laboratory tests<sup>131</sup> of soil in the area carried out (January 2020/ February 2021) by DMG revealed that the mineral was Aluminous Laterite having more than 20 per cent of Aluminium Oxide and hence, Bauxite. This was corroborated by findings of a committee of geologists which observed (August 2020) that Aluminous Laterite reserves in the area should be treated as major mineral as it met/ exceeded the threshold limit fixed by IBM for being classified as Bauxite and should be auctioned block-wise.

Audit observed that royalty at the rate of 25 per cent of average sale price of major mineral was leviable as per MMDR Act in the instant case as the extracted mineral was Bauxite. Royalty was, however, collected at the lower rate applicable for Laterite, resulting in loss of revenue amounting to ₹16.39 lakh, as shown in **Appendix 26**. The possibility of short levy of royalty in respect of 14 other lessees<sup>132</sup> in the region who were engaged in extraction of Laterite could not be ruled out as laboratory tests were not conducted to ascertain the mineral.

While accepting the audit finding, DMG stated (March 2023) that the quarrying lease of Shri V. S. Bashir has since been cancelled (January 2023) and necessary steps would be taken to recover applicable royalty.

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<sup>128</sup> The average sale price for Bauxite (cement) ranged from ₹594 per MT to ₹714 per MT during 2021-22.

<sup>129</sup> KOMPAS ID: KAN/Q/2021/327

<sup>130</sup> Tested at National Institute of Interdisciplinary Science and Technology, Thiruvananthapuram.

<sup>131</sup> Tested at IBM, Bengaluru; and Malabar Cements Limited, Palakkad.

<sup>132</sup> 10 lessees in Malappuram district, two in Kozhikode district, and two in Kannur district.

**Recommendation: GoK should direct DMG to conduct laboratory tests to identify the mineral for which mining permit/ lease is issued and collect royalty accordingly.**

2.7.8.2 Uralungal Labour Contract Co-operative Society (ULCCS) extracted Ordinary earth from private land in Kozhikode district without paying royalty and transported it to their work site for constructing the second phase of Kozhikode Bypass Road. Hence, the geologist issued (June 2016) demand notice seeking payment of royalty of ₹74.80 lakh for illegal extraction of 1.87 lakh m<sup>3</sup> of ordinary earth. ULCCS requested (September 2016) GoK to exempt it from payment of royalty on the ground that the work was performed for Government and that huge loss would be incurred if royalty is paid. In a report submitted (May 2017) to GoK, DMG stated that ULCCS cannot be exempted from payment of royalty as per extant rules. Finance Department, GoK also recommended against (December 2017) granting exemption, on the ground that estimate for the work included a provision for royalty. Nevertheless, Department of Industries, GoK exempted (February 2018) ULCCS from payment of royalty.

Audit observed that the grant of exemption from payment of royalty was not in order because neither MMDR Act nor KMMC Rules authorised the GoK to exempt any person from payment of royalty for the minerals extracted. As ULCCS did not pay advance royalty and transported the mineral without transit pass, price amounting to ₹3.60 crore (twice the royalty amount) was also recoverable as per KMMC Rules.

Thus, irregular exemption granted by GoK to ULCCS from payment of royalty, coupled with short-demand of price by the geologist concerned, resulted in non-collection of revenue amounting to ₹5.40 crore<sup>133</sup>.

DMG stated (March 2023) that it would bring the matter to the attention of GoK for necessary action.

2.7.8.3 There was short-recovery of ₹12.66 lakh<sup>134</sup> due to non-inclusion of price in demand notice while calculating dues receivable from Shri Jose K. Abraham and Shri Sibil Mathews in Kottayam district, who extracted 19,200 m<sup>3</sup> of brick clay and 12,438 m<sup>3</sup> of ordinary earth, respectively.

2.7.8.4 At the time of applying for renewal of leases during 2016-22, it was seen that seven lessees mined out GBS in excess of the quantity permitted under their earlier/ expired leases. DMG, however, did not ensure recovery of royalty and price by issuing demand notices for unpermitted/ excess extraction of minerals, leading to loss of revenue totalling ₹12.45 crore to GoK, as shown in **Appendix 27**.

2.7.8.5 DMG granted (December 2017) quarrying lease to Shri Jilson Joseph V<sup>135</sup> in Kannur district for extraction of GBS. The quantity of extraction ascertained by DMG through a Recognised Qualified Person<sup>136</sup> was 1.82 lakh MT. This was at

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<sup>133</sup> Royalty of ₹1.80 crore plus price of ₹3.60 crore.

<sup>134</sup> (19,200 + 12,438) \* ₹40.

<sup>135</sup> KOMPAS ID: KAN/Q/2018/213.

<sup>136</sup> A qualified person recognised by the competent authority to prepare mining plan.

variance with the quantity of 1.61 lakh MT as per stock register<sup>137</sup> maintained by DMG.

Thus, 21,202 MT<sup>138</sup> was extracted illegally. Compounding fee of ₹1.08 lakh in respect of illegal mining of 1,361 MT only was, however, collected from the lessee. Hence, royalty and price for the remaining quantity of 19,841 MT amounting to ₹14.28 lakh<sup>139</sup> was not recovered.

**2.7.8.6** DMG granted (March 2018) mining lease to M.M.T.Construction Company<sup>140</sup> for extraction of GBS from 2.681 Ha of land in Wayanad district. The modified mining plan with boundary pillars, proper demarcation of quarrying area and buffer zone submitted by the lessee revealed extraction of 3,252.50 MT of GBS from buffer zone. Accordingly, royalty and price amounting to ₹2.34 lakh<sup>141</sup> was recoverable along with fine. The geologist, however, did not take action to recover the same.

**2.7.8.7** DMG granted (August 2016) mining lease to G.K.Granites Ltd<sup>142</sup> for extraction of GBS from 3.522 Ha of land in Kottayam district. On noticing mining from adjacent land, which was illegal, geologist issued three demand notices, the details of which are given in the **Table 2.19** below:

**Table 2.19: Details of demand notices issued to G. K. Granites Ltd.**

| Sl. No.      | Date of Demand notice | Illegally extracted quantity (in MT) | Rate applied including royalty and price (₹) | Total demand for illegal mining (₹) |
|--------------|-----------------------|--------------------------------------|--|-------------------------------------|
| 1            | 16/04/2019            | 50,575                               | 72 <sup>143</sup>                            | 36,41,400                           |
| 2            | 18/06/2020            | 4,000                                | 24 <sup>144</sup>                            | 96,000                              |
| 3            | 17/08/2020            | 69,765                               | 72   | 50,48,080 <sup>145</sup>            |
| <b>Total</b> |                       | <b>1,24,340</b>                      |  | <b>87,85,480</b>                    |

Price amounting to ₹1.92 lakh<sup>146</sup> for extraction of 4,000 MT from the neighbourhood land was not recovered. Collection of ₹87.85 lakh could not be ascertained from the records.

**2.7.8.8** DMG granted (June 2016) quarrying permit to Shri Jayarajan<sup>147</sup> for extraction of GBS from an area of 75.80 Ares in Kollam district. Though annual consolidated royalty of ₹ seven lakh was recoverable as per KMMC Rules, the

<sup>137</sup> As per the data in Kerala Online Mining Permit Awarding Services (KOMPAS), a software application used by DMG for issuing mineral transit pass.

<sup>138</sup> 1,82,290 MT – 1,61,088 MT.

<sup>139</sup> Royalty: ₹4,76,184 (19,841 MT\*₹24) and Price: ₹9,52,368 (19,841 MT\*₹24\*2).

<sup>140</sup> KOMPAS ID: WAY/Q/2018/72.

<sup>141</sup> (3,252.50 MT \* ₹24) \* 3.

<sup>142</sup> KOMPAS ID: KOT/Q/2015/2.

<sup>143</sup> Royalty @ ₹24 and price @ ₹48 was imposed per MT.

<sup>144</sup> Royalty @ ₹24 per MT.

<sup>145</sup> Includes fine of ₹25,000.

<sup>146</sup> (4,000 MT \* ₹24) \* 2.

<sup>147</sup> KOMPAS ID: KOL/Q/2015/135.

geologist erroneously collected a sum of ₹ five lakh only towards royalty (as applicable for quarrying in an area measuring between 30 Ares and 40 Ares), thereby resulting in short collection of ₹ two lakh.

**2.7.8.9** DMG granted (March 2010) lease to Shri P. J. Chacko<sup>148</sup> in Kottayam district for quarrying GBS for a period of 12 years. The lessee opted for registration of MCU and for payment of consolidated royalty in annual instalments. As per KMMC Rules, the applicable rate of consolidated royalty was ₹16 lakh<sup>149</sup> per year. The lessee, however, paid only ₹ four lakh each year during the period 2014-17, leaving a balance of ₹36 lakh<sup>150</sup> which was not recovered.

In all the cases, except one mentioned in **Table 2.19**, fine (maximum ₹ five lakh) was not collected. Audit also observed that in six districts<sup>151</sup>, the District Geologists issued demand notices to 26 lessees for illegal mining and collected royalty and price amounting to ₹15.50 crore, as mentioned in **Appendix 28**. DMG, however, did not take steps to recover fine or compounding fee (up to ₹ five lakh) from those lessees.

**2.7.8.10** Department of Land Revenue had informed (September 2015) DMG about extraction of mineral from an area of 0.90 Ha in Thiruvananthapuram district after expiration of validity of mining licence/ lease. The geologist inspected the site and found that mineral was extracted up to a depth of seven metres from a part (0.172 Ha) of the area. The quantity of extraction in the remaining area of 0.728 Ha was not measured citing waterlogging in the region.

Audit observed that as the depth was measured up to seven metres for a part of the quarry, the height/ depth of the remaining portion, being waterlogged, would have invariably been more than seven metres. Despite this, the geologist did not recover the minimum applicable royalty, price and fine/ compounding fee under KMMC Rules. As this was not done, revenue of at least ₹91.73 lakh<sup>152</sup> was forgone.

About the instances mentioned in **Paragraphs 2.7.8.3 to 2.7.8.10**, DMG stated (March 2023) that it would direct District Offices/ Geologists concerned for reviewing the cases and recovery of dues in case of revenue loss.

**Recommendation: GoK may take suitable action as per extant rules and regulations and strengthen the system for assessment and collection of mineral revenue due to it.**

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<sup>148</sup> KOMPAS ID: KOT/Q/2017/99.

<sup>149</sup> The MCU in the instant case was a cone crusher unit having capacity of 180 Horsepower. For cone crusher units up to 300 Horsepower, the annual consolidated royalty was ₹16 lakh.

<sup>150</sup> ((₹16 lakh - ₹4 lakh) \* 3 years) + ₹12.96 lakh.

<sup>151</sup> Alappuzha, Idukki, Kollam, Kozhikode, Thiruvananthapuram and Wayanad.

<sup>152</sup> ({[0.7280 Ha \* 10000 sq. m. \* 7 metre] \* 2.50} \* ₹24) \* 3.



**2.7.9 Non-recovery of compensation and damages for mining in Government/poramboke land**

If minerals are extracted from Government/ *poramboke*<sup>153</sup> land, the permit/ lease holder is liable to pay compensation (at rates notified by GoK) as per Section 6(1) of the Kerala Land Conservancy Act, 1957 (KLCA), in addition to royalty. Unauthorised extraction of minerals from Government/ *poramboke* land attracted damages equivalent to the compensation payable for the extracted mineral and fine up to ₹50 (Section 6(3) of KLCA). The rate of compensation in respect of GBS was fixed (February 2016) at ₹50 per MT. GoK authorised (May 2015) the officials of DMG, District Collectors and other officials of Department of Land Revenue to exercise powers conferred by KMMC Rules in their respective areas of jurisdiction<sup>154</sup> to act against illegal mining.

Audit observed that failure to recover applicable compensation and damages from permit/ lease holders, who extracted minor minerals from Government/ *poramboke* land, led to a total short recovery of ₹12.04 crore<sup>155</sup> in seven cases, as discussed below.

- Shri K. C. George<sup>156</sup> was granted (June 2010) quarrying lease for extracting GBS from 0.8094 Ha of *poramboke* land<sup>157</sup> in Idukki district. The District Geologist found that the lessee extracted 1.95 lakh MT of GBS from *poramboke* land outside the permitted lease area and issued (March 2017) demand notice for recovery of ₹1.40 crore towards royalty and price payable. A copy of the demand notice was also marked to the Department of Land Revenue, GoK. The District Collector recovered ₹97.50 lakh<sup>158</sup> towards compensation for extraction of minerals from Government land. Damages (equivalent to the amount of compensation as per Section 6 (3) of Kerala Land Conservancy Act, 1957) were, however, not recovered by the Department of Land Revenue despite intimation (March 2017) by the geologist on illegal extraction, thereby depriving the Government of revenue of ₹97.50 lakh.
- Rule 12 of KMMC Rules required production of all statutory licences/ clearances/ No-Objection Certificates, *etc.* from statutory authorities for renewal of quarrying permit of an applicant.

Shri R. Krishnamoorthi<sup>159</sup> applied for (February 2017) renewal of quarrying lease for extraction of GBS from an area of 3.9342 Ha in four parcels of private land in Pathanapuram *taluka*, Kollam district, upon expiration (December

<sup>153</sup> Land which is not assessed to revenue records and is property of GoK.

<sup>154</sup> Director/ Additional Director/ Deputy Directors in DMG have jurisdiction over the entire State, District Collectors have jurisdiction within the district concerned, and other authorised officials can exercise powers within their respective areas of jurisdiction.

<sup>155</sup> Total of ₹97.50 lakh, ₹10.70 lakh, ₹1.29 crore, ₹ 15.05lakh, ₹75.09 lakh, ₹8.50 crore, ₹11.26 lakh and ₹16.03 lakh.

<sup>156</sup> KOMPAS ID: IDU/Q/2015/36.

<sup>157</sup> Bearing re-survey number 217/5 – part Block No.18.

<sup>158</sup> 1,95,000 MT \* ₹50.

<sup>159</sup> KOMPAS ID: KOL/Q/2018/255.

2016) of previous lease. The *Tahsildar* informed (October 2017) the geologist that the lessee had extracted 4,278 m<sup>3</sup> (or 10,695 MT) of GBS from *poramboke* land outside the permitted lease area. Recovery of compensation and damages amounting to ₹10.70 lakh<sup>160</sup> for extraction of GBS from *poramboke* land was, however, not ensured by the geologist while renewing (June 2018) the lease.

- Department of Land Revenue informed (July 2021) the District Geologist, Kollam that V. K. Rocks Private Limited<sup>161</sup> had extracted excess quantity of 2.57 lakh MT of GBS from Government land and was, therefore, liable to pay compensation of ₹1.29 crore<sup>162</sup> for illegal mining and sought (July 2021) information on details of additional compensation or other amount to be recovered from the lessee. As the required information was not provided by the geologist, damages amounting to ₹1.29 crore could not be recovered.
- Department of Land Revenue reported (August 2021) to the District Geologist, Kollam about mining of 16,175 MT of GBS by Ananthapuri Blue Metals<sup>163</sup> from buffer zone around the quarry and 13,920 MT from outside the permitted lease area (*i.e.*, beyond the boundary of buffer zone around the quarry). Though royalty, price, compensation and fine were collected from the lessee, damages for extraction of GBS from buffer zone and from outside the lease area were not recovered. This led to deprivation of revenue of ₹15.05 lakh<sup>164</sup>.
- Department of Land Revenue reported (September 2015) to the District Geologist, Thiruvananthapuram about illegal extraction of GBS by three persons<sup>165</sup>, from quarries in Government land<sup>166</sup>. Consequently, the District Geologist issued (May – September 2020) five demand notices for ₹7.11 crore against those persons after conducting site inspection.

As the dues were not paid, DMG initiated (January 2021) revenue recovery proceedings to realise the amount included in three out of five demand notices. It, however, did not take action to realise dues of ₹75.09 lakh included in the remaining two demand notices.

- The District Collector, Idukki granted (March 2020) permission to Greenworth Infrastructure Private Limited (GIPL) to extract 29,627 m<sup>3</sup> of GBS for which GIPL remitted royalty of ₹17.78 lakh<sup>167</sup>. As per the report submitted (March 2020) by the geologist, GIPL extracted and transported a total quantity of 38,295 m<sup>3</sup> of GBS from sites without obtaining mineral transit pass. Despite the illegal extraction of 8,668.60 m<sup>3</sup> (*i.e.*, 38,295 m<sup>3</sup> – 29,627 m<sup>3</sup>) and transportation of the entire quantity without transit pass, DMG neither

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<sup>160</sup> (10,695 MT \* ₹50) \* 2.

<sup>161</sup> KOMPAS ID: KOL/Q/2018/258.

<sup>162</sup> 2,57,114 MT \* ₹50.

<sup>163</sup> KOMPAS ID: KOL/Q/2019/278.

<sup>164</sup> (16,175 MT + 13,920 MT) \* ₹50.

<sup>165</sup> Shri Krishnamoorthi, Ms. Usha Devi P., and Shri Binu Thomas.

<sup>166</sup> Re-survey numbers 261/5, 261/1, 251/4, 251/8 and 218/6.

<sup>167</sup> 29,627 m<sup>3</sup> \* ₹60.

recovered the price for 29,627 m<sup>3</sup> of GBS nor collected royalty (along with price and fine) for 8,668.60 m<sup>3</sup>.

Site inspection by the geologist further revealed (July 2018) that GIPL had illegally extracted 44,747.52 m<sup>3</sup> of GBS from outside the permitted area. In a letter addressed (August 2021) to the District Collector, the geologist stated that as per the report submitted by the Sub-Collector, GIPL had also illegally extracted 2.51 lakh m<sup>3</sup> of GBS from outside the permitted area of road work. As the work involved extraction from Government land, compensation and damages were recoverable from GIPL under the provisions of KLCA. The revenue forgone due to non-recovery of royalty, price, compensation, and damages worked out to ₹8.50 crore, as shown in **Table 2.20**.

**Table 2.20: Non-recovery of revenue for illegal extraction and movement of GBS**

| Particulars  | Quantity (m <sup>3</sup> ) | Rate (₹/m <sup>3</sup> ) | Amount (₹ crore) |
|--|----------------------------|--------------------------|------------------|
| Price for transportation of mineral without transit pass (KMMC Rules)                    | 29,627.00                  | 120                      | 0.35             |
| Royalty and price for unpermitted extraction and transportation of mineral (KMMC Rules)  | 8,668.60                   | 180                      | 0.16             |
| Compensation for extraction of mineral from Government land (KLCA)                       | 29,627.00                  | 125                      | 0.37             |
| Compensation and damages for unpermitted extraction and transportation of mineral (KLCA) | 8,668.60                   | 250                      | 0.22             |
| Compensation and damages for extraction outside permitted area (KLCA)                    | 44,747.52                  |                          | 1.12             |
|  | 2,51,289.33                |                          | 6.28             |
| <b>Total</b>   |                            |                          | <b>8.50</b>      |

(Source: DMG records)

- DMG granted quarrying permit to Shri K. J. Thomas<sup>168</sup> for extraction of GBS from Government land<sup>169</sup> in Idukki district from February 2013 to February 2014. Extraction of GBS from outside the permitted area was reported (February 2016) by Department of Land Revenue. Hence, the District Geologist issued (December 2016) demand notice to the lessee seeking ₹17.60 lakh towards royalty, price and fine for extraction of 9,776 m<sup>3</sup> of GBS. As the dues were not paid, revenue recovery proceedings were initiated (July 2021), but demand notice for ₹11.26 lakh<sup>170</sup> for extraction of 6,256 m<sup>3</sup> was not served on the lessee. Further, as the minerals were extracted from Government land,

<sup>168</sup> KOMPAS ID: IDU/Q/2015/33.

<sup>169</sup> Bearing survey numbers 289/2, 289/4, 289/6, 289/7 and 290/2 – Block No. 34.

<sup>170</sup> Royalty = 6,256 m<sup>3</sup> \* ₹60 being royalty rate per m<sup>3</sup> plus Price = 2\*(6,256 m<sup>3</sup> \* ₹60).

compensation and damages amounting ₹16.03 lakh<sup>171</sup> were also recoverable. The District Geologist, however, did not issue demand notice for the same.

DMG stated (March 2023) that it would give instructions to geologists of Idukki, Kollam and Thiruvananthapuram District Offices for recovering the amounts in co-ordination with Land Revenue Department, and that notice has been served on the lessee of Pathanapuram *taluka* for realising the dues. In respect of dues recoverable from 17 quarries in Wayanad district, DMG stated that it would bring the matter to the attention of GoK. In respect of non-recovery of royalty, price, compensation, and damages from GIPL, DMG stated that the matter was *sub-judice* and the final orders of Hon'ble High Court of Kerala would be complied with.

### 2.7.10 Penalty for illegal mining

As per Kerala Minerals (Prevention of Illegal Mining, Storage and Transportation) Rules, 2015, "Illegal mining" means any mining operation undertaken by any person, firm, association or company in any area within the State without holding a prospecting licence, mining lease, quarrying lease or quarrying permit under the provisions contained in the MMDR Act or the rules made thereunder. Rule 108(1) of KMMC Rules prescribes penalties for contravention of any provision of rules, which included imprisonment for a term up to two years and/ or fine up to ₹ five lakh. Further, Rule 108(2) prescribes that in such cases, the mineral extracted or its price (if the mineral has already been disposed of) can be recovered in addition to royalty. Rule 111 provides for compounding of any offence under the rules by the competent authority on collection of a sum<sup>172</sup> specified by that authority. The Hon'ble High Court of Kerala<sup>173</sup> had directed (July 2015) GoK to bring appropriate amendments to KMMC Rules so as to avoid the arbitrary exercise of discretionary power conferred on the authorities by Rule 111.

Audit observed that the penal provisions contained in KMMC rules were not implemented effectively as detailed below:

- On a test-check of records, it was observed that in nine instances of illegal mining of ordinary earth, the competent authority compounded the offence by collecting ₹25,000 each from all offenders. The quantity of minerals illegally extracted by the offenders, however, varied and ranged from 481 MT to 3,31,451 MT as shown in **Appendix 29**. KMMC Rules thus, did not provide for assessing the compounding fee in proportion to the quantity of minerals illegally extracted. The penal provisions in KMMC Rules were, therefore, arbitrary and encouraged discretion of the competent authority.

DMG stated (March 2023) that imposition of penalty was made as per KMMC Rules. The reply is not acceptable as a penalty of ₹25,000 was levied uniformly

<sup>171</sup> Compensation =  $([9,776 \text{ m}^3 + 6,256 \text{ m}^3] * ₹50)$  plus Damages = Amount equivalent to compensation.

<sup>172</sup> In the case of offence punishable with fine only, the amount shall not exceed the maximum amount of fine (*i.e.*, ₹ five lakh) imposed.

<sup>173</sup> WPC No. 21117 of 2015.

irrespective of the quantity of mineral illegally extracted in at least nine instances observed by Audit in two districts.

Thus, the penal provisions in KMMC Rules were ineffective in acting as a deterrent to prevent violation.

- As per Rule 108 (2) of KMMC Rules<sup>174</sup> the price of mineral to be recovered in the case of illegal extraction would be twice the applicable royalty payable. As the prevailing market rates of minerals were considerably higher than the price which was recovered, GoK lost the opportunity to recover the prevailing market price of minerals. It was seen that DMG recovered price amounting to ₹15.25 crore only during 2016-22 in respect of illegal extraction of 31.78 lakh MT of minerals (in 20 test-checked cases in six selected districts) instead of recovering market price of ₹187.69 crore as indicated in **Appendix 30**. As the price recovered in the case of illegal extraction was meagre when compared to the market price of minerals, it did not act as an effective deterrent to illegal mining activity.
- Transportation of minerals is regulated through the Kerala Minerals (Prevention of illegal mining, Storage and Transportation) Rules, 2015. GoK issued (June 2017) a guideline<sup>175</sup> for fixing the minimum compounding fee for vehicles seized in connection with illicit transportation of the 13 minor minerals mentioned in Schedule I of KMMC Rules.

Audit observed that the guideline, however, did not provide for recovery of royalty and price for illicit transportation of seven<sup>176</sup> minor minerals. This resulted in non-recovery of royalty and price in 132 instances of illegal transportation of GBS, Laterite Building Stone (LBS), ordinary earth and sand.

DMG stated (March 2023) that it had recovered price as per provisions of KMMC Rules, and draft amendment to rules was under consideration of GoK. The fact, however, remains that the price, as provided in KMMC Rules, did not compensate the State for illegal extraction of minerals.

- The quarterly return on illegal mining submitted by GoK/ DMG to IBM reported 44,072 cases of illegal mining and recovery of fine amounting to ₹164.61 crore during 2016-22. Audit observed that as per data maintained by IBM, all States except Kerala took stern action against illegal mining, such as lodging of First Information Report (FIR), filing of court cases, seizing of vehicles, *etc.* In Kerala, other than imposing fine, DMG did not proceed with stringent action like lodging of FIR, filing of court cases, seizing of vehicles, *etc.*

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<sup>174</sup> A Note was introduced to the proviso to Rule 108(2) of KMMC Rules *vide* Government Order G.O.(P) No.25/2017/ID dated 22 June 2017.

<sup>175</sup> G.O(Ms) No. 51/2017/ID dated 21 June 2017.

<sup>176</sup> *Kankar* and other forms of limestone, Lime shell, Ordinary clay, Ordinary sand, Ordinary earth, GBS and LBS.

DMG stated (March 2023) that cases were filed in courts either voluntarily by officials or when an offender was not willing to compound the offence. It assured to take steps to include data on seized vehicles (involved in illegal transportation) in KOMPAS portal for tracing contraventions. The reply is not acceptable as illegal mining should not be left to the discretion of officials, to decide whether to file a case or not. Stringent prosecution should be enacted to bring about conformity of law to counter illegal mining.

***Recommendations: GoK should issue guidelines for assessing penalty for illegal extraction of minerals based on quantity extracted, to avoid arbitrariness. GoK should also review the guidelines stipulating the minimum compounding fee in case of illegal transportation of minerals, so that royalty and price is recovered in respect of the seven minor minerals which have been excluded.***

### **2.7.11 Unsustainable mining of Beach sand**

Beach sand, a major mineral, is extracted from Kollam district by The Kerala Minerals and Metals Limited (KMML) and IREL (India) Ltd (IREL). KMML, a State PSU and IREL, a Central PSU are engaged in mining and mineral separation of beach sand minerals such as Ilmenite, Rutile *etc.* The initial mining lease to KMML, which expired in 2005 was renewed (August 2010) for a further period of 20 years for extraction from an area of 203.802 Ha. IREL had four mining leases which were valid till the years 2023-24 (102.77 Ha), 2031 (180 Ha), 2034 (67 Ha), and 2039 (4.8 Ha). On directions (January 2019) of GoK, the National Centre for Earth Science Studies (NCESS) – an autonomous research centre under GoI studied<sup>177</sup> (February – March 2019) beach sand mining undertaken by IREL and KMML along the 22-kilometre long Kayamkulam – Neendakara coast in Kollam district. NCESS reported<sup>178</sup> (April 2019) that it observed shoreline retreats of 243 metre, 227 metre and 57 metre, respectively, at Vellanathurthu, Ponmana and Kovilthottam<sup>179</sup> during the period 2000-2019. NCESS found that mining volumes of both companies during the period were more than 50 *per cent* higher<sup>180</sup> than the sustainable mining quantity recommended in its earlier reports of 2002 and 2010. For the periods 2001-10 and 2010-19, the study report indicated excess mining of 5.47 lakh m<sup>3</sup> (9.84 lakh MT) and 5.34 lakh m<sup>3</sup> (9.61 lakh MT) respectively by the two PSUs. The report attributed severe erosion of beach/ coast due to unsustainable mining practices followed by the two PSUs and suggested that mining volumes be drastically reduced to compensate for the same.

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<sup>177</sup> Through field data collection in beach and offshore mining areas (Kovilthottam, Ponmana and Vellanathuruthu) and non-mining sites (Azheekkal), and one-time bathymetric survey. The study analysed mining activities by the two PSUs during decadal periods 2001-10 and 2010-19 and analysed data from secondary sources as well.

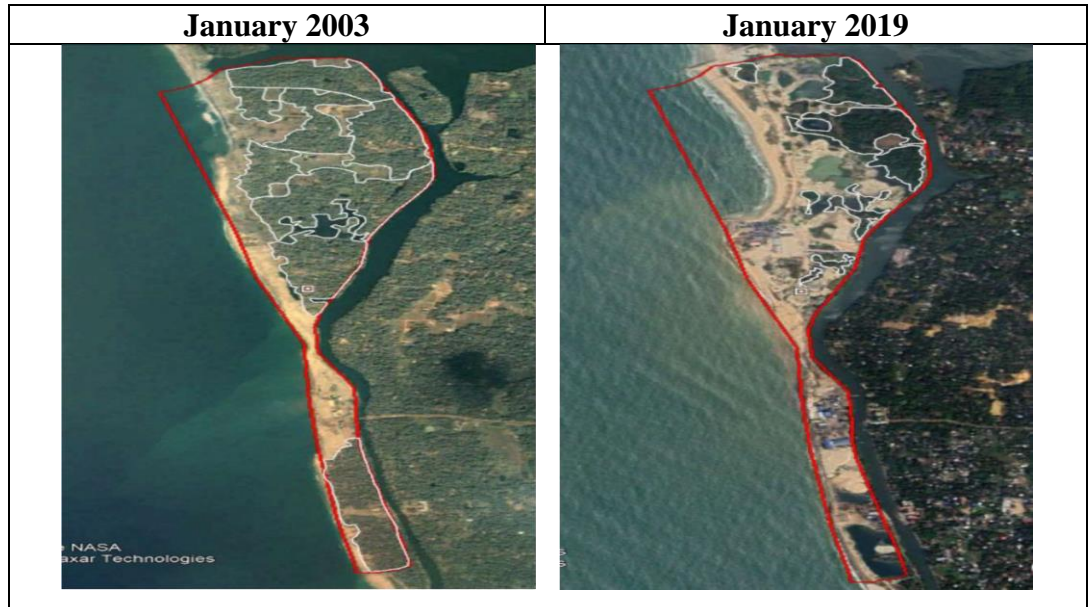
<sup>178</sup> Report on 'Impact of beach sand mining by IREL (India) Ltd. and KMML along the Chavara coast in Kollam district'.

<sup>179</sup> IREL (India) Ltd. and KMML undertook mining operations at Vellanathuruthu, Ponmana and Kovilthottam sites.

<sup>180</sup> Excess mining by each PSU for the period 2001-10 was not mentioned in the report. For the period 2010-19, excess mining by KMML and IREL (India) Ltd. was reported at 3.18 lakh m<sup>3</sup> (5.52 lakh MT) and 2.16 lakh m<sup>3</sup> (3.88 lakh MT) respectively.

Change in the extent of land cover along Kollam coast during the past two decades (2000-19) could be gauged from images captured in Environmental Impact Assessment (EIA) study report of Council of Scientific and Industrial Research – National Institute for Inter-disciplinary Science and Technology (CSIR-NIIST), shown in **Figure 2.23**.

**Figure 2.23: Land cover changes during 2003-19 along Kollam coast**



(Source: EIA study report of CSIR-NIIST, March 2020)

Audit observed that though large-scale beach erosion was an admitted fact<sup>181</sup>, available studies/ reports ascribed the development to natural as well as human activities. In its 2019 report, NCESS advised the PSUs to restrict mining volume by 50 per cent of the recommended sustainable limit<sup>182</sup>, but added that the limit could be reconsidered in a detailed study to be undertaken as follow-up of that report. Such an exercise, however, has not been conducted in the past three years. The Hon'ble National Green Tribunal had also taken cognizance of the matter and directed (March 2021) Kerala State Pollution Control Board to take action expeditiously in accordance with law. Despite being the competent authority for regulation of mining activity in the State, DMG did not intervene in the matter to control the unsustainable mining reported by NCESS/ Joint Committee.

In respect of IREL, DMG stated (March 2023) that the Company was operating with proper authorisations such as approved mining lease, mining plan and

<sup>181</sup> The Minister of State, Ministry of Science & Technology and Earth Sciences made (March 2022) a statement in the *Rajya Sabha* that 33.60 per cent of 6,632 km Indian coastline was under varying degrees of erosion, with Kerala accounting for erosion of 275.33 km (46.40 per cent of 592.96 km coastline), due to reasons which included beach mining.

<sup>182</sup> During the period 2010-19, the sustainable mining limit as provided (April 2012/ October 2013) by NCESS to KMML and IREL (India) Ltd. was 74,500 m<sup>3</sup>/ year (1.34 lakh MT) and 48,600 m<sup>3</sup>/ year (0.87 lakh MT) respectively, for a mining length of 1.06 km for KMML and 1.5 km for IREL (India) Ltd.

composite Environmental Clearance (EC) and Coastal Regulation Zone (CRZ) clearance. In respect of KMML, DMG stated (March 2023) that the applications of the Company for EC and CRZ clearance were pending with the State Environment Impact Assessment Authority (SEIAA) and the Kerala Coastal Zone Management Authority (KCZMA) for approval.

The replies, however, did not address the issue of unsustainable mining activity reported by NCESS and the damage caused by such mining operations.

### **Mining activities carried out without obtaining Environmental Clearance**

**2.7.12** Obtaining prior EC is a mandatory requirement under Environment (Protection) Act, 1986 and Environmental Impact Assessment (EIA) Notification, 2006 for grant of permission for any mining activity. Execution of mining lease deed in specified form within six months of the order of grant of mining lease is a major condition for grant of lease. Rule 50 of KMMC Rules empowers DMG to regulate, prohibit or cancel the mining lease of any lessee contravening the statutory provisions or conditions of lease.

Audit observed instances of mining activities being carried out by two companies, KMML and EICL Ltd. (formerly English Indian Clays Limited), without obtaining prior EC, as mentioned below.

#### **2.7.12.1 Mining by KMML**

GoK renewed (August 2010) the mining lease granted to KMML for extraction of beach sand. As per KMMC Rules (Rule 43), KMML was required to execute mining lease deed within six months of approval of mining plan.

KMML obtained mining plan approval and CRZ status report from NCESS and applied (November 2013) to KCZMA for obtaining CRZ approval and to (June 2020) SEIAA for obtaining EC. SEIAA noted that the time limit for executing mining lease deed by KMML was extended by GoK on several occasions and had expired, and that CRZ clearance has also not been obtained by KMML. It observed that the terms of reference approved by Ministry of Environment Forest and Climate Change for EIA study and Environment Management Plan (EMP) had placed the project under 'violation category' which entails initiation of proceedings by KSPCB under provisions of Environment (Protection) Act, 1986. Further, 'consent to operate' or 'occupancy certificate' would not be issued to KMML till EC is obtained.

As of February 2023, KMML had neither obtained EC from SEIAA nor executed any mining lease deed. During the period from April 2010 to March 2022, KMML mined 44.84 lakh MT of beach sand. Though it was incumbent on GoK/ DMG to ensure that all mining lessees including PSUs obtained requisite prior clearances and approvals before starting mining activities, it turned a blind eye to the mining operations of KMML.

In reply, DMG forwarded (March 2023) the averments of KMML that the latter had obtained extension of time from GoK for execution of mining lease deed and approved mining plan (for 2021-26) and was in the process of obtaining EC from



SEIAA. The fact, however, remained that KMML continued mining operations without EC, which was a violation of EIA Notification, 2006.

#### **2.7.12.2 Mining by EICL Ltd.**

DMG granted (January/ May 2008) mining lease to a company named EICL Ltd. for excavation of China clay<sup>183</sup> from a lease area of about 35 acres in Thiruvananthapuram district. The company extracted (2008-11) 1.24 lakh MT of China clay from two sites/ pits in the area without obtaining prior EC. Of this, 0.34 lakh MT was mined in excess of the approved mining plan. The company used 0.42 lakh MT of overburden<sup>184</sup> (1.14 lakh MT) towards back-filling of two pits and for creating approach road and removed/ transported 0.72 lakh MT of overburden without authorisation from the geologist concerned. Nonetheless, the entire excavation was illegal as prior EC was not obtained by the company for commencing mining operations.

The grant of mining lease by DMG without insisting on prior EC was irregular and tantamount to extending undue favour to EICL.

DMG stated (March 2023) that it would review the matter and recover the dues, if revenue loss is found.

### **Suspected cases of illegal mining**

**2.7.13** GoK authorised (May 2015) the officials of DMG, District Collectors and other officials of Department of Land Revenue, and police to exercise powers conferred by KMMC Rules, in their respective areas of jurisdiction<sup>185</sup> to act against illegal mining.

Test-check of records revealed that DMG did not take effective steps to prevent illegal mining and to penalise offenders despite having knowledge about them, as discussed below.

**2.7.13.1** Based on information furnished by Land Revenue Department, the geologist issued (August 2018) notices to 23 persons<sup>186</sup> who had carried out illegal mining at Ayirooppara village, Thiruvananthapuram district. Survey by the Department of Land Revenue (June 2020) revealed illegal extraction of GBS from an area of 3.674 Ha of *poramboke* land and 3.180 Ha of private land. Though the geologist conducted (June 2020) joint site inspection along with *taluka* surveyor, the total volume of illegal mining was not ascertained citing absence of data on depth of the mine. The geologist also did not initiate action under KMMC Rules

<sup>183</sup> Prior to classification as a minor mineral under KMMC Rules, China clay was classified as a major mineral under MMDR Act.

<sup>184</sup> Rock or soil overlying mineral deposit that needs to be removed to access the mineral

<sup>185</sup> Director/ Additional Director/ Deputy Directors in DMG have jurisdiction over the entire State, District Collectors have jurisdiction within the district concerned, and other authorised officials can exercise powers within their respective areas of jurisdiction.

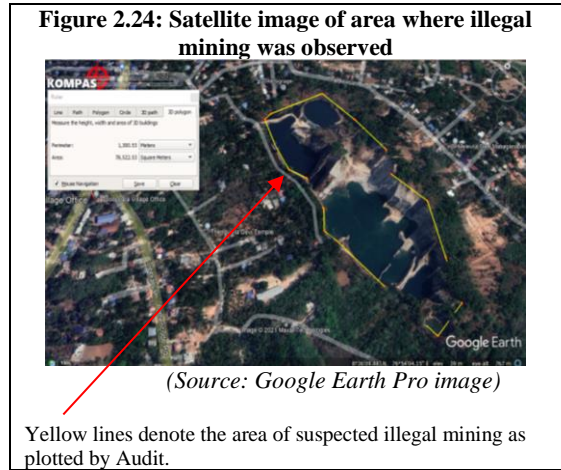
<sup>186</sup> Shri/ Smt. Appukuttan, Jagadappan, Rajivan, Biju, Shiju, Nitin S. Babu, Suresh, Ashok Kumar, Padmini, Pappu Chandrasenan, Sohail Das, Shobhana, Rajamma, Sivaraman Sashidharan, Bhargavi Amma, Omana Amma, Smita, Aravind, Chandni, Ratnamma, Uma Parvathi, Asha, and Laxmi Parvathi.

citing non-availability of survey number of land parcels in the land sketch provided by the Department of Land Revenue.

Audit observed that DMG had the wherewithal to measure the height/ depth of the excavated area using Total Station System<sup>187</sup> but, it did not utilise the same. Further, survey numbers<sup>188</sup> of lands were available in the sketch provided by the Department of Land Revenue.

The extent of illegal mining in an area of 6.854 Ha (identified independently by Audit using *Google Earth Pro*, by plotting KOMPAS<sup>189</sup> data on licensed/ permitted quarries operating in the region), is shown (yellow boundary) in **Figure 2.24**.

DMG stated (March 2023) that as Total Station System available with it was not functional, it was considering hiring one on rental basis for conducting surveys. The reply was silent on action proposed against the observed instances of illegal mining.



**2.7.13.2** *Google Earth Pro* images of legal/ licensed quarries in a region revealed that large pits had formed in adjacent lands not appurtenant to but in proximity to the permitted mining area of existing quarry(ies)/mineral depots, signifying illegal mining thereat. Such manifestations were also observed in areas where there were no licensed quarries. The details of 89 suspected cases<sup>190</sup> as independently observed by Audit in six selected districts, are provided in **Appendix 31**.

This showed that DMG did not effectively utilise KOMPAS for detection of illegal mining. The details of locations were shared with DMG for its verification through site inspection, but action was yet to be taken (February 2023). **Figure 2.25** shows an instance of illegal mining at adjacent areas outside existing quarry noticed by Audit in Kannur district.

<sup>187</sup> An equipment which uses electronic/ optical instrument for surveying.

<sup>188</sup> Survey No. 193, 194, 195, 106 and 110.

<sup>189</sup> Kerala Online Mining Permit Awarding Services (KOMPAS), a software application developed by National Informatics Centre for DMG.

<sup>190</sup> Fifty-four cases of mining in lands proximate to existing quarry/ies, and 35 cases of mining in distant locations.

**Figure 2.25: Mining at areas in the vicinity of existing quarry**

Existing quarry : —  
 Suspected illegal mining : —

**Near quarry of Shri T. Kalanthar (KOMPAS ID: KAN/C/2018/125)**



**2.7.13.3** Illegal mining was observed in areas lying outside the co-ordinates of boundary pillars allotted to quarrying leases. Details of 29 instances of suspected illegal mining observed outside quarry boundary in seven<sup>191</sup> districts are given in **Appendix 32**.

DMG assured (March 2023) to initiate action on cases of illegal mining revealed in spatial analysis.

**Recommendation: GoK may take steps to utilise KOMPAS to detect illegal mining through GIS/ satellite imagery.**

**2.7.13.4** Every mining plan approved by DMG included a requirement that an area of 7.50 metres from the periphery of any quarry should be maintained as safety or buffer zone, and extraction of mineral was not permitted within this area. Data in KOMPAS should indicate the actual area permitted for mining activity as well as buffer zone or boundary around it.

Audit observed that lease deed/ agreement and KOMPAS data provided for total area of a mine/ quarry including buffer zone, and not the actual area permitted for mining (*i.e.*, excluding buffer zone). As a result, the exact area permitted for mining of each quarry was not available in KOMPAS for detection of illegal mining. Audit observed 31 instances in seven<sup>192</sup> districts where extraction of mineral was suspected to have been carried out in areas that included buffer zone of quarries, as shown in **Appendix 33**. DMG did not contemplate any enquiry and penal action against these violations.

<sup>191</sup> Six selected districts and Pathanamthitta district.

<sup>192</sup> Six selected districts and Pathanamthitta district.

DMG stated (March 2023) that it would review the cases pointed out by Audit and take appropriate action.

**2.7.13.5** Rule 10(a) of KMMC Rules specify that in the case of GBS and LBS quarries where the depth of pit exceeds six metres, the sides of open workings should be sloped/ benched or secured to prevent slope failure. In case of violation, DMG shall issue notice to quarry operator for remedying the breach within 30 days and to initiate appropriate proceedings and/ or impose penalty not exceeding ₹25,000.

Audit examined images of quarrying areas in *Google Earth Pro* and observed that this regulation was not followed in respect of 32 leases (31 out of 55 selected leases in six districts and one lease in Pathanamthitta district which is not included in sample), as mentioned in **Appendix 34**. During the period under review, violations were not reported by District Geologists, except in Kottayam district where one case<sup>193</sup> was reported (May 2022). The practice/ violation allowed quarry operators to illegally extract more mineral from areas where benches had to be cut. The environmental impact of such quarrying practice was not assessed by DMG. Quarrying activities were, therefore, fraught with the danger of several areas being susceptible to landslides and fatal accidents. DMG, however, did not take any action for recovering penalty/ dues or initiating proceedings against violations.

DMG stated (March 2023) that it was taking action on instances of violation of mining plan which was noticed during routine inspections.

**2.7.13.6** Rule 57 of KMMC Rules stipulates that every quarry should have either a progressive closure plan or a final closure plan, as a component of mining plan. The mine closure plan involves backfilling/ refilling and reclamation of pits formed by extraction of minerals with afforestation and/ or proper fencing all around the quarry. Rule 10(q) of KMMC Rules requires the permit holder to provide for retention wall or fencing around quarries of GBS and LBS where pits have been formed because of mining operations, to prevent accidents.

Audit observed that DMG did not maintain any data or report on unsecured pits or abandoned quarries. In the absence of adequate information, the nature and extent of violation of KMMC Rules could not be ascertained. Records of DMG also did not indicate any earnest effort to re-use abandoned mines.

DMG stated (March 2023) that joint inspection had been conducted along with officials of *Suchitwa Mission*<sup>194</sup> in select abandoned quarries, and further action is awaited from *Suchitwa Mission*.

## **2.7.14 Non-accounting of mineral revenue**

The Kerala Financial Code prescribes the maintenance of proper records in respect of all items of revenue showing assessments and demands made, progress of recovery, and outstanding amounts due to Government. Further, departmental

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<sup>193</sup> KOMPAS ID: KOT/Q/2015/36.

<sup>194</sup> Technical Support Group in waste management sector under Local Self Government Department of GoK.

Controlling Officers should closely monitor progress of realisation of revenue and review status of recoveries made against demands.

Test check by Audit revealed that Demand Collection Balance (DCB) registers were not maintained in four (out of selected six) districts<sup>195</sup>, while in districts where DCB register was maintained, demands raised by geologists were not recorded therein after issuing notices. Further, realisation of revenue was not updated/recorded on collection of dues and all demand notices were not routed through DCB register, making it difficult to ascertain the exact number of defaulters and arrears in collection of revenue. Audit also observed that a sum of ₹72.46 lakh was recoverable from various defaulters in Wayanad district for the past six years though demand notices were issued in 2017, indicating weak and inadequate control over accounting of mineral revenue.

DMG stated (March 2023) that it would instruct District Offices to ensure proper maintenance and updating of DCB register, and to initiate legal proceedings against defaulters, with immediate effect.

***Recommendation: GoK should strengthen monitoring and control over mining operations through adequate documentation and maintenance of records.***

## **Department of Cultural Affairs**

### **Department of Archaeology**

#### ***2.8 Idling of assets purchased costing ₹63.42 lakh***

#### **Non-commissioning/ non-repairing of assets purchased costing ₹63.42 lakh resulted in wastage of public money**

As per Article 40 (c) (10) of Kerala Financial Code, it is the duty of every Government servant, not only to merely observe complete integrity in financial matters but also to be constantly watchful to see that the best possible value is obtained for all public funds spent by him or under his control and to guard scrupulously against every kind of wasteful expenditure from public funds.

Directorate of Archaeology (Directorate) purchased 48 number of Touch Screen Kiosks (Kiosks) through Keralam Museum<sup>196</sup> and 12 number of Biometric Attendance Management Systems<sup>197</sup> (BAMS) from KELTRON<sup>198</sup>. The details of equipment purchased/ installed is given in the **Table 2.21** below:

<sup>195</sup> Kannur, Idukki, Kottayam and Thiruvananthapuram.

<sup>196</sup> Government of Kerala vide G.O (Rt) No.69/12/CAD dated 04/02/2012 approved Keralam Museum as nodal agency of Museums under Department of Cultural Affairs. The development works of all Museums under Department of Cultural Affairs was to be done through Keralam Museum.

<sup>197</sup> BAMS uses biometric particulars like fingerprints of employees to mark and manage their attendance.

<sup>198</sup> Kerala State Electronics Development Corporation Limited, a Government of Kerala undertaking is a Total Solution Provider for GoK.

**Table 2.21: Details of equipment purchased/ installed**

| Sl. No.                        | Name of equipment   | No. of equipment purchased | Amount (₹ in lakh) | Month and year of purchase | No. of equipment |               |
|--------------------------------|---|----------------------------|--------------------|----------------------------|------------------|---------------|
|                                |   |                            |                    |                            | Installed        | Not installed |
| 1                              | Kiosks  | 12 <sup>199</sup>          | 15                 | September and October 2015 | 4                | 8             |
| 2                              |   | 36 <sup>200</sup>          | 45                 | March 2015                 | 4                | 32            |
| 3                              | Designing, development and implementation of software for Kiosk | Nil                        | 11                 | Nil                        | Nil              | Nil           |
| 4                              | BAMS  | 3                          | 6                  | July 2013                  | 3                | 0             |
| 5                              |   | 9                          | 8                  | May 2015                   | 1                | 8             |
| <b>Total cost of equipment</b> |   |                            | <b>85</b>          |                            |                  |               |

Audit observed that out of the 48 Kiosks purchased, the Directorate had not installed 40 Kiosks valuing ₹45.42 lakh till date (October 2021) because the development works of museums where Kiosks were to be installed were not complete. The warranty period of three years for Kiosks has already elapsed. Eight out of the 12 BAMS purchased for ₹7.00 lakh were not installed as of October 2021, since the basic infrastructure required for installing those BAMS were not created by the Directorate either before or after the purchase of BAMS. Thus, the failure on the part of Directorate in creating the basic infrastructure required for functioning of BAMS rendered eight of them useless.

The Directorate replied (March 2022) that Keralam Museum has been instructed (March 2022) to take immediate measures to put the Kiosks into use. As far as BAMS are concerned, five systems were made operational and functioning. Steps have been taken to make the remaining BAMS operational.

The Government initially replied (March 2023) that 23 Kiosks were installed and the work of installation of the remaining Kiosks were under progress. Subsequently, in its updated reply, the Government stated (July 2023) that all the 48 Kiosks were made fully functional and displayed at the respective Museums. It further stated that a new BAMS with SPARK software link up capability was installed at the office of the Directorate, in lieu of old BAMS and this new BAMS would be installed in all other Museums under the Directorate. The reply confirms that the Directorate could not utilise the old BAMS devices. With regard to Kiosks, the reply is not acceptable, since a joint physical verification of 25 out of 48 Kiosks in

<sup>199</sup> For four District Archaeological Heritage Museums (DAHMs): Thiruvananthapuram (one No. of equipment), Ernakulum (five Nos. of equipment), Thrissur (four Nos. of equipment) and Wayanad (two Nos. of equipment).

<sup>200</sup> Seven numbers in Koyikkal palace, 17 numbers in Hill Palace Museum and 12 numbers in Pazhassi Raja Museum and with three-year warranty.

three Museums<sup>201</sup>, conducted (August 2023) by Audit with the officials of the Directorate revealed that eight Kiosks, though installed, were not working and one Kiosk was not put into operation.

Thus, the decision of the Directorate in purchasing Kiosks before the completion of refurbishment of Museums resulted in idling of Kiosks and consequent wastage of ₹56.41 lakh<sup>202</sup>. Similarly, non-installation of the BAMS resulted in wastage of Government funds of ₹7.00 lakh. The Directorate was at fault in not exercising due diligence in the installation of the equipment and failed in its duties under Article 40 (c) (10) of Kerala Financial Code. The non-commissioning of the assets purchased for ₹63.42 lakh resulted in unfruitful expenditure and wastage of public money.

The Directorate further replied (December 2023) that Keralam Museum was given strict instructions to get all the Touch Screen Kiosks made serviceable and installed at proper places. The Government in its further reply (December 2023), accepted the recommendations of Audit in this regard.

***Recommendation: Government should direct the Directorate to put all the equipment to their intended use and further direct that equipment are purchased only after ensuring availability of basic infrastructure required for their functioning.***

## Department of Museums and Zoos

### 2.9 Undue benefit to contractors

#### Payment of ineligible advance resulted in blocking up of funds of ₹8.11 crore

Article 192 (a) of the Kerala Financial Code (KFC) stipulates that no advance should be paid to a contractor except with the special sanction of the Government. Government servants should make every endeavour to maintain a system under which payment is made only for the work actually done. As per Government Order No. (P) No.311/14/Fin. dated 30 July 2014, in case of Government accredited agencies who are not directly executing the work, mobilisation advance should not be given. Mobilisation advance up to 20 per cent of the estimated cost for the components of works directly executed by a Government agency can be considered in emergency situations, with the prior approval of the Government. As per Article 179 of the KFC (read with Chapter VI), Government servant should resort to open tenders in case the estimated value of the contract is above ₹10,000.

<sup>201</sup> (i) District Archaeological Heritage Museum (DAHM), Thiruvananthapuram; (ii) Koyikkal Palace, Nedumangad, Thiruvananthapuram; and (iii) Hill Palace Museum, Thripunithura, Ernakulam District

<sup>202</sup> Including ₹11 lakh which was spent in connection with designing, development and implementation of Kiosk software.

Audit test checked contracts entered into by the Directorate of Museums and Zoos (Directorate) in respect of six out of 13 on-going/completed works<sup>203</sup> for the three years ended 31 March 2020. The total estimated cost for the six works was ₹16.62 crore. Four out of six works were awarded to Hindustan Prefab Limited (HPL), a Public Sector Undertaking (PSU) of Government of India and two works were awarded to Steel Industrials Kerala Limited (SILK), a PSU of Government of Kerala (GoK). All works were awarded on nomination basis without tendering. In all the six cases, the works were sub-contracted by HPL and SILK.

Audit observed that HPL ceased to be an accredited agency in July 2017<sup>204</sup>. After HPL ceased to be an accredited agency, it was awarded (February 2018) two<sup>205</sup> works without inviting competitive tender, which was in violation of Article 179 of the KFC. During the period under review, SILK had the status of accredited agency of GoK. As per Government Order No.(P) No.95/2017/Fin.<sup>206</sup> dated 25 July 2017, a fair and competitive bidding process for selection of an accredited agency from those enlisted based on technical requirements, centage charge *etc.* shall be adopted. However, the Government Order was not complied with and one work<sup>207</sup> was awarded (March 2020) to SILK without inviting tender from among the accredited agencies, which was in violation of Government Order of July 2017.

The Directorate had disbursed ₹6.88 crore in multiple instalments as advance payment to HPL in respect of the four works. Similarly, ₹1.23 crore was paid to SILK as advance towards two works. There was no sanction from GoK for making these advance payments. The payment of advance to the contractors were in violation of Article 192 (a) of the KFC and the Government Order dated 30 July 2014 which prohibit advance payment to accredited agencies who were not directly executing works. The unauthorised advance payment resulted in blocking up of Government funds amounting to ₹8.11 crore (till June 2021).

The Government replied (March 2023) that while inviting the proposal for the works in 2017, HPL was recognised as an accredited agency. The fact of exclusion of HPL from the panel of accredited agencies, however, was not noticed by the Department while awarding the works and no work was awarded to it thereafter. Government further stated that presently no advances are being paid to the work executing agencies. The reply was silent on awarding work to SILK without inviting tender and making advance payments without sanction of Government.

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<sup>203</sup> Works for which the sanctioned amount exceeded ₹0.50 crore was considered as the population. Works awarded to Public Works Department were excluded from the population. Among the 13 works awarded to various contractors, six works were selected for detailed scrutiny on judgmental basis.

<sup>204</sup> List of Accredited agencies were included as annexure to G.O.(P)No.95/2017/Fin, dated 25 July 2017.

<sup>205</sup> Construction of visitors' amenities in Zoological Gardens and Interpretation Centres in Directorate of Museums and Zoo, Thiruvananthapuram and Construction of a new building for aquarium in the State Museum and Zoo, Thrissur.

<sup>206</sup> Vide this order, the hitherto provision for awarding works to accredited agencies without tendering process was discontinued.

<sup>207</sup> Construction of Terrestrial Aviary, Thiruvananthapuram.



Thus, the payment of ineligible advance resulted in blocking up of Government funds amounting to ₹8.11 crore. Awarding of the contract to HPL and SILK violated the provisions of Article 179 of the KFC (read with Chapter VI) and the Government Order of 2017 respectively and also deprived the Directorate from availing the opportunity of receiving economical rates due to competitive bidding.

***Recommendation: Government should ensure that the Directorate adheres to the provisions of the KFC and Government Orders while awarding tenders and responsibility should be fixed for the payment of ineligible mobilisation advance.***

## **Directorate of Coir Development**

### **2.10 Wasteful expenditure**

**Failure to monitor creation of facilities by the societies for more than six years resulted in wasteful expenditure of ₹0.61 crore.**

As per Article 40(c) (10) of Kerala Financial Code, it is the duty of every Government servant not only to merely observe complete integrity in financial matters but also to be constantly watchful to see that the best possible value is obtained for all public funds spent by him or under his control and to guard scrupulously against every kind of wasteful expenditure from public funds.

Government of Kerala (GoK) sanctioned (December 2014) ₹2.37 crore to the Directorate of Coir Development (Directorate) for providing project-based financial assistance to 28 Integrated Coir Co-operatives societies (Societies) under Kayamkulam Project Office<sup>208</sup>. The assistance was to be utilised for (i) creation of infrastructure like godown, retting tank, work shed *etc.*, (ii) purchase of De-fibering Machines (DFMs) and associated equipment<sup>209</sup> and electrification, and (iii) working capital for one month (excluding wages). The Directorate disbursed the assistance in January 2016 and the Societies were required to set up the facilities by March 2016.

The Project Officer, Kayamkulam under the Directorate was responsible for ensuring proper implementation of the projects. As per the agreements executed by the Societies, each Society shall utilise the sanctioned amount within the period allowed<sup>210</sup> and for the purpose for which it was sanctioned. As per proceedings dated 29 September 2015 of the Directorate, the Societies were to furnish Utilisation Certificate on completion of project period, failing which the entire amount sanctioned was to be repaid to the Government with interest.

Audit observed that out of the three items of works for which the assistance was to be utilised, the manufacturing and supply of DFMs and associated equipment was entrusted (March 2016) to Kerala State Coir Machinery Manufacturing Company

<sup>208</sup> Directorate of Coir Development, GoK formulates and implements schemes for promotion and development of coir sector through 10 Project Offices.

<sup>209</sup> Willowing Machine, Screening Machine, Conveyor, Electronic Ratt.

<sup>210</sup> Initially (December 2014) six months and then (September 2015) extended to one year

Limited (KSCMMCL), a Public Sector Undertaking. Accordingly, 26<sup>211</sup> Societies transferred (March 2016) ₹0.79 crore to KSCMMCL. KSCMMCL informed (March 2016) the Societies that the machineries were ready for delivery. The Societies, however, did not take delivery of the machines except 608 electronic ratts<sup>212</sup>, and the DFMs and other equipment were lying at the premises of KSCMMCL since June 2016. According to KSCMMCL (March 2019/ October 2021) the Societies were not taking delivery of the machines due to lack of infrastructure like land, civil construction, electrification, *etc.* In response (August 2021) to an audit enquiry (July 2021), the Directorate clarified (August 2021) that all the 28 societies had since completed the work of godown/work shed and 26 of them carried out spinning and related operations using electronic ratt. According to the Directorate, the Societies could not install the DFMs as the same were not supplied by KSCMMCL.

Though the Directorate informed (October 2016) KSCMMCL that on inspection it was found that DFMs were not delivered to the Societies and called for the reasons for the same, it was not followed up. Further, the Directorate did not initiate action to recoup the amount sanctioned though none of the Societies furnished Utilisation Certificates as required, except in the case of one Society to which a demand notice was issued (July 2021) for refunding the amount along with 18 *per cent* interest.

A Joint Physical Verification (October 2021) of six societies by Audit and the Project Officer, Kayamkulam confirmed the non-installation of DFMs and revealed that they did not create facilities, including three-phase electricity connection, required for the installation of DFMs though a portion of the assistance was earmarked for the same. During the physical verification, the Project Officer reported that similar situation prevailed in other Societies also. It was also noticed that since the Societies did not take delivery of the machines, KSCMMCL decided (February 2021) to utilise them for replacing essential parts of old machines it had supplied in the past to others. As of January 2023, KSCMMCL converted only eight DFMs for the same.

The Government replied (April 2023) that the Societies were of the opinion that the 15 HP DFMs were outdated and if installed, it would be a huge burden on the Societies by way of electricity charges. None of the Societies had furnished Utilization Certificate as KSCMMCL had not yet supplied the DFMs to the Societies and KSCMMCL was instructed to either ensure that all the DFMs are effectively put into productive use or to refund the entire amount to the Government. It was also stated that KSCMMCL had reported that the manufacturing of 15 HP DFMs were complete and hence unable to refund the amount and they were ready to provide other suitable machines.

The reply confirms that the DFMs should have been rated at 10 HP as required by the Societies and not 15 HP as manufactured by KSCMMCL, which resulted in rejection of machines by the Societies. The reply did not address the audit point

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<sup>211</sup> Two societies did not release funds for purchase of DFMs/equipment. The Project Office served notice to these societies against non-utilisation of funds for intended purpose.

<sup>212</sup> Electronic Ratt is an equipment used to produce coir yarns from the coir fibre

regarding inaction by the Directorate/Project Office to address this issue for more than six years.

Thus, the Directorate and the Project Office, Kayamkulam failed to ensure that the Societies utilised the funds disbursed to them to create facilities as envisaged which resulted in wasteful expenditure of ₹0.61 crore<sup>213</sup> and therefore, failed in their duty to guard against wasteful expenditure from public funds as envisaged under Article 40(c) of Kerala Financial Code.

***Recommendation: Government should ensure that the required machineries are supplied by KSCMMCL and immediately put to use failing which the amount should be refunded by it.***

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<sup>213</sup> The difference between ₹79.29 lakh (total cost of 26 DFMs) and ₹18.51 lakh (being the cost of 608 Electronic Ratts at the rate of ₹3,045/- each)