# Chapter VIII

# Special waste and Construction and Demolition waste

As per Section 7.1 of MSWM Manual, 2016, the following wastes are defined as special waste namely (a) Plastic waste, (b) Bio-medical waste (BMW), (c) Electric and Electronic waste (e-waste), and (d) Slaughterhouse waste.

## 8.1 Plastic waste

MoEFCC notified (February 2011) the Plastic Waste (Management and Handling) Rules, 2011 (PW Rules, 2011). It was replaced by the Plastic Waste Management Rules, 2016 (PWM Rules, 2016) notified (18 March 2016) by Government of India. These rules shall apply to every waste generator, local body, manufacturer, importers and producer.

### *8.1.1 Usage of banned plastic*

Rule 5 (c) of PW Rules, 2011 prohibit manufacture, stock, distribution or sale of any carry bag made of virgin or recycled plastic, which is less than 40 microns in thickness. Subsequently, as per Rule 4(c) of PWM Rules, 2016, carry bag made of virgin or recycled plastic, shall not be less than 50 microns in thickness.

Government of Karnataka notified (11 March 2016) a ban on manufacture, supply, sale and usage of plastic carry bags, plastic banners, plastic buntings, flex, plastic flags, plastic plates, plastic cups, plastic spoons, cling films and plastic sheets used for spreading on dining table including the above items made of thermocol and plastic, which use plastic micro beads in the State.

As per the returns (2016-17) submitted by DMA to KSPCB, 760 TPD of plastic waste is generated in the State. To ensure compliance to the ban, ULBs (other than BBMP) conducted 3,588 raids on commercial establishments and seized 162 tons of banned plastic and collected ₹31.68 lakh towards fine/penalty.

We observed that 28 of the test-checked ULBs conducted 1,889 raids along with officials of the KSPCB during the period 2012-13 to 2016-17 and seized 86 tons of banned plastic. They were stored within the premises of ULBs, dry waste collection centres and at landfill sites. ULBs were yet to initiate action for disposal of the banned plastic. An amount of ₹9.30 lakh was collected as fine for non-compliance. Two ULBs (CMCs, Karwar and Sira) did not furnish replies and five[48] ULBs did not conduct any raid.

We further observed during JPV that banned plastic waste was collected at source from households, indicating that the ban was not implemented effectively.

[48] TMCs – Humnabad and Mugalkhod; TPs - Ainapura, Chinchali and Raibag.

The State Government stated (May 2018) that despite the ban, quantum of plastic carry bags in MSW had not reduced. However, raids were conducted throughout the State to recover banned plastic items and also impose fine on such units. Steps would also be taken to dispose seized plastic material.

### *8.1.2 Status of compliance to Plastic Waste Management Rules*

Clause 6 of PW Rules, 2011 and Clauses 5 and 6 of PWM Rules, 2016 spell out the responsibility of the municipal authority/local body for plastic waste management. The status of compliance to these provisions in the test-checked ULBs is shown in **Table 8.1**.

**Table 8.1: Status of compliance to PW Rules, 2011 and PWM Rules, 2016**

| Sl. No. | Requirement | Provision under | | Compliance/Remarks |
|---|---|---|---|---|
| | | PW Rules, 2011 | PWM Rules, 2016 | |
| 1 | Ensuring segregation, collection, storage, transportation, processing and disposal of plastic waste | Rule 6 (c) (i) | Rule 6 (2) (a) | Segregation followed only by TMC, Kumta. In the absence of segregation, the other test-checked ULBs were collecting and transporting mixed waste to the landfill site. |
| 2 | Creating awareness among all stakeholders about their responsibilities | Rule 6 (c) (v) | Rule 6 (2) (e) | Awareness on use of alternative products in place of plastic was promoted by the test-checked ULBs except the five newly upgraded ULBs. |
| 3 | Engaging civil societies or groups working in waste management including waste pickers | Rule 6 (c) (vi) | Rule 6 (2) (f) | No test-checked ULBs (other than CC, Tumakuru and CMC, Bagalkot) engaged civil societies or groups working in waste management including waste pickers. |
| 4 | For setting up of system for plastic waste management, the local body shall seek assistance of producers in line with the principle of Extended Producer Responsibility (EPR) | Rule 6 (d) | Rule 6(3) | No test-checked ULBs established an EPR based plastic waste management system. |
| 5 | The local body to frame bye-laws incorporating the provisions of these rules. | Rule 6(g) | Rule 6(4) | HDMC and CC, Mangaluru framed bye-laws during 2011. Councils in three[49] ULBs, passed resolutions adopting the Rules. However, they did not frame the bye-laws. |

Thus, failure by ULBs to follow several stages prescribed in the rules for PWM (2011 and 2016) resulted in low rates of segregation. Thus, unsegregated mixed waste reached the landfill sites. The JPV also showed that banned plastic waste was dumped in the landfill site.

The State Government stated (May 2018) that directions had been issued (September 2017) to all DCs to implement the provisions of PWM Rules, 2016. It further stated that the draft bye-laws had been prepared for State incorporating certain provisions of PWM Rules, 2016 and the possibility of integrating EPR in plastic waste management would be taken up in the next State Level Plastic Advisory Committee.

#### 8.1.2.1 Ingestion of plastic by cattle and resultant death

As per Schedule II to MSW Rules, 2000 and 2016, storage facilities should be maintained in such a way that stray animals do not have access to the waste.

[49] CC, Tumakuru (8.9.2011); TMCs, Hiriyur (21.3.2012) and T. Narasipura (27.2.2017).

Poor segregation at source, deficiency in door-to-door collection resulted in kitchen waste/discarded food packed in plastic bags being improperly disposed on roadsides, vacant lands and near market areas. Disposal of such waste at such places attract cattle (stray and domestic) and cattle eat food leftovers including the plastic.

JPV conducted in test-checked ULBs showed that stray animals were seen feeding on the MSW dumped on roadsides/bins kept on roadsides and found pulling out or scattering/consuming the food waste that was packed in plastic bags rendering the surroundings more unclean and unhygienic (**Exhibit 8.1**). Accumulation of large quantities of plastic inside their stomach overtime leads to ruminal infection, indigestion, *anestrus*[50] and weakness leading to death. In response to audit query about cases of plastic ingestion by cattle in 35 test-checked ULBs, four[51] ULBs informed that:

- out of 895 such cases, surgeries were conducted in 97 cases and 2,319 kilograms of plastic was removed (**Exhibit 8.2**); and
- 37 deaths were reported (**Exhibit 8.3**).

The State Government stated (May 2018) that instructions had already been issued to all ULBs to take measures for preventing stray animals feeding on waste.

### *8.1.3 Non-usage of plastic in formation of roads/energy recovery*

Rule 6(h) of PW Rules, 2011 and Rule 5(b) of PWM Rules, 2016 stipulate that the municipal authorities/local bodies shall encourage the use of plastic waste (preferably the plastic waste which cannot be further recycled) for road construction as per Indian Roads Congress guidelines or energy recovery or waste to oil, *etc.*, in compliance with the standards and pollution control norms specified by the prescribed authority.

The Central Pollution Control Board (CPCB) in its overview of plastic waste management (June 2013) indicated the technologies that could be adopted for plastic waste management such as utilisation of plastic waste in road construction, co-processing of plastic waste as Alternative Fuel and Raw Material (AFR) in cement kilns and power plants, conversion of plastic waste into liquid RDF (Oil) and Plasma Pyrolysis Technology.

We observed that none of the test-checked ULBs adopted the use of plastic waste in formation of roads/energy recovery/waste to oil, *etc.*, despite 28 of these ULBs having recovered 86 tons of banned plastic. Illustrations of use of plastic in road formation by Karnataka Rural Road Development Agency (KRRDA) is given in **Appendix 11.5**. The CPCB in its evaluation report (2008) on built roads (2002-2007) in Tamil Nadu, stated that roads using plastic waste are stronger with better resistance towards rain water and water stagnation, no stripping and no potholes, cost effective, *etc*. It also mentioned that maintenance cost of such roads is almost nil and for 1km X 3.75m road, 1 ton of plastic (10 lakh carry bags) is used and 1 ton of bitumen is saved.

[50] *Anestrus* is the primary factor reducing reproductive efficiency in beef cow-calf operations.

[51] Bidar, Chikkamagaluru (TP, Koppa), Kolar (TMC, Malur) and Uttara Kannada.

As already been discussed in Paragraph 8.1.1 that 86 tons of plastic waste was seized, audit did not come across any instance of these seized plastic waste being transmitted by ULBs to any Road Development Authority/Agency for usage in laying roads. In this regard, the Government also did not give any directions to reuse the plastic waste in road formation.

Thus, failure of the ULBs to perform the prescribed responsibilities and devise methods of utilisation of plastic in roads resulted not only in mismanagement of plastic waste but also in environmental degradation and death of cattle.

The State Government stated (May 2018) that usage of plastic waste in formation of roads would be examined positively. It also stated that provisions were made in the DPRs to collect the plastic waste separately and sell these as RDF after being baled.

***Recommendation 17: The State Government may promote use of plastic waste in laying of both urban and rural roads as this enables reduction of considerable amount of waste reaching the landfill and lessens the expenditure on maintenance of roads. It may also explore other areas where plastic can be used.***

## 8.2 Bio-medical waste

GoI notified (July 1998) the Bio-medical Waste (Management and Handling) Rules, 1998, which provided a regulatory framework for management of BMW generated in the country. This was replaced by the Bio-medical Waste Management Rules, 2016 (BMW Rules, 2016) notified (March 2016) by GoI.

KSPCB is the authority designated for implementation of the provisions of these rules. Every occupier or operator handling BMW, irrespective of the quantity should obtain authorisation from KSPCB and shall hand over segregated waste to a common bio-medical waste treatment facility (CBMWTF) for treatment, processing and final disposal. Disposal by deep burial is permitted only in rural or remote areas where there is no access to CBMWTF and needs to be carried out with prior approval from the prescribed authority and as per the Standards specified.

### *8.2.1 Status of authorisation of Health Care Establishments in the State*

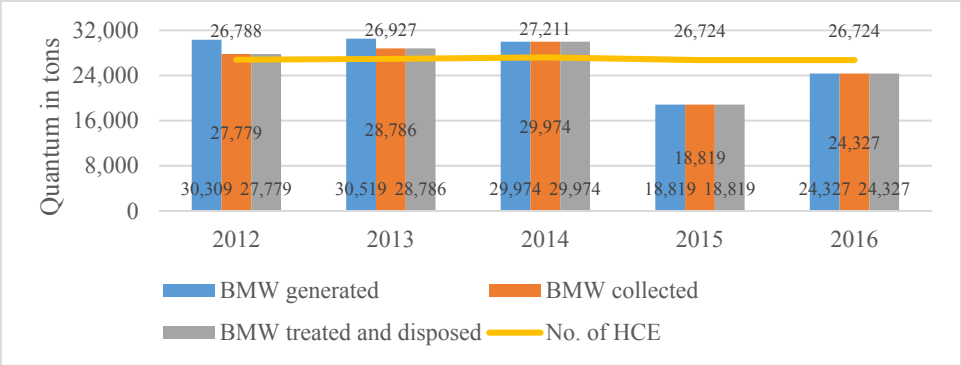
There are 29,874 Health Care Establishments (HCE) functioning in Karnataka, which include hospitals, nursing homes and other units such as veterinary institutes, diagnostic laboratories, clinical research and industry with medical officer for emergency. There are 25 CBMWTF functioning in the State.

As of December 2017, nine *per cent* of HCE (2,595) were functioning without a valid authorisation from KSPCB. While 17 *per cent* of HCE (5,061) followed deep burial system, 18 *per cent* of HCE (5,427) were disposing BMW without authorisation.

### *8.2.2 Status of Bio-medical waste in Karnataka*

The quantum of BMW generated and disposed in the State during the period 2012 to 2016 is given in **Chart 8.1**.

**Chart 8.1: Status of Bio-medical waste generation in Karnataka**




Source: Information furnished by KSPCB

As depicted in **Chart 8.1**, data available with KSPCB indicates that the quantum of waste generated and the number of HCEs remained more or less the same during the period 2012 to 2014 and that the entire BMW generated was collected, treated and disposed of during the period 2014 to 2016. The data furnished by KSPCB was incorrect, as we noticed during JPV that BMW was mixed with MSW and BMW was burnt within the hospital premises as detailed in subsequent paragraphs.

The drastic fall in the quantum of waste generated (37 *per cent*) during 2015 was not commensurate with the decrease in the number of HCE (2 *per cent*) and the reasons for the decrease were not explained by KSPCB. There was an increase in the number of HCEs functioning in the State during 2016 whereas the quantum of waste generated did not increase proportionally and remained lower than the quantum generated during the period 2012 to 2014.

### *8.2.3 Status of authorisation for Bio-medical waste management in test-checked government and veterinary hospitals*

All Government (36) and Veterinary (34) hospitals within the jurisdiction of 33 ULBs[52] were test-checked in audit. The status of authorisation of these hospitals by KSPCB for BMW is given in **Table 8.2**:

**Table 8.2: Status of authorisation of 70 Government/Veterinary hospitals**

| Sl. No. | Category | Details of authorisation for BMW | | |
|---|---|---|---|---|
| | | Obtained | Not obtained | Data not furnished |
| 1 | Government hospitals | 14 | 21 | 01 |
| 2 | Veterinary hospitals | 08 | 19 | 07 |

Source: Information furnished by test-checked ULBs

Thus, 58 *per cent* of the government hospitals and 56 *per cent* of veterinary hospitals test-checked were functioning without the required authorisation as of March 2017. This is bound to render the compilation of data (BMW generated, treated, *etc.*) at KSPCB incomplete and the monitoring/enforcement by KSPCB ineffective.

[52] In one ULB (TP, Gudibande), there was no Government/Veterinary hospital and in another ULB (TMC, Ugar Khurd), the only Veterinary hospital was found closed.

### *8.2.4 Role of Urban Local Bodies in management of Bio-medical waste*

As per Rule 6(6) and Rule 14 of BMW Rules, 1998, amended in 2000 and Schedule III (7) to BMW Rules, 2016, ULBs shall

(a) provide or allocate suitable land for development of CBMWTF in their respective jurisdictions as per the guidelines of CPCB.

In all the test-checked ULBs, we observed that the government hospitals have entered into agreement with CBMWTF and these facilities were located at places away from urban limits. CC, Ballari and CMC, Bagalkote have provided place for CBMWTF in their MSW landfill site.

(b) collect other solid waste (other than BMW) from the health care facilities.

Eight[53] ULBs were not collecting MSW from the government hospitals located within their jurisdiction. Instances of BMW mixed with MSW were noticed during JPV besides burning of the mixed waste in these eight ULBs. In CC, Tumakuru, MSW was being collected once in a week from the government hospitals. No irregularity in collection found during JPV in other ULBs. MSW was not handed over to ULBs by 15 veterinary hospitals. Traces of burning of MSW within the premises was observed during JPV in 20 hospitals.

(c) Further as per Schedule I (12) of BMW Rules, 2016, ULBs are required to collect segregated BMW generated in households and have an arrangement with the CBMWTF to collect this waste from the Material Recovery Facility or from the household directly for final disposal.

Segregation at source in the test-checked ULBs ranged[54] from zero to 55 *per cent*. Therefore, the mixed waste collected that also included household BMW was being transported and dumped in the landfill site. The ULBs did not have a mechanism to segregate BMW during the intermediary stages either. This not only violated BMW Rules but would also cause contamination of environment and public health hazard due to unsanitary conditions.

The State Government stated (May 2018) that provisions for collecting household BMW were included in the draft SWM bye-laws and KSPCB would be requested to provide guidelines for collection of domestic BMW.

### *8.2.5 Management of Bio-medical waste by Government hospitals*

Rule 6(5) of BMW Rules, 1998 stipulate that untreated BMW shall not be kept stored for more than 48 hours.

We observed that the CBMWTF collected BMW daily from seven district hospitals and two teaching hospitals located within the jurisdiction of the test-checked ULBs. District Hospital, Karwar entered into an agreement with CBMWTF which provided for collection of BMW on alternate days. The actual frequency of collection was once in two to six days. The periodicity of BMW collection in other government hospitals ranged from daily to once in a

[53] CMC, Nanjangud; TMCs - Kakkera, Mugalkhod and T. Narasipura; TPs - Ainapura, Chinchali, Kudligi and Raibag.

[54] Zero in 7 ULBs; 1 to 25 *per cent* in 12 ULBs; 26 to 50 *per cent* in 15 ULBs and more than 50 *per cent* in 1 ULB.

week. Comparison of actual periodicity of collection with the periodicity mentioned in the agreements revealed certain variations (detailed in **Appendix 8.1**), indicating laxity on part of few hospitals to enforce proper disposal of BMW.

We observed that in respect of four[55] hospitals where the periodicity of collection of BMW was more than three days, substantial portions of human tissue was dumped/burnt in deep burial pits within the premises of the hospital.

None of the veterinary hospitals test-checked tied up with CBMWTF for disposal of BMW generated. These hospitals were resorting to deep burial for BMW within their premises (**Exhibit 8.4**).

### *8.2.6 Absence of liquid chemical waste treatment system*

In accordance with the BMW Rules, 1998 and 2016, the occupier (HCE) shall ensure segregation of liquid chemical waste at source and ensure pre-treatment or neutralisation (disinfection using at least one *per cent* hypochlorite solution or any other equivalent chemical reagent) prior to mixing with other effluent generated from health care facilities before discharging it into the drains.

We observed that there was no system to treat the liquid chemical waste in 12 out of 36 government hospitals and 25 out of 34 veterinary hospitals. The effluent treatment plant required for treating liquid waste before letting into the drains was not working in any of the test-checked hospitals except one in Mangaluru, and untreated liquid chemical waste was being discharged directly into the drains leading to contamination of the connected watercourse.

### *8.2.7 Dumping and burning of Bio-medical waste in hospital premises*

The provisions of the MSW/SWM Rules prohibit burning of waste in the open and mixing of different types of waste. As per Rule 4(b) of BMW Rules, 2016, it shall be the duty of every occupier (HCE) to make a provision within the premises for a safe, ventilated and secured location for storage of segregated BMW to ensure that there shall be no secondary handling, pilferage of recyclables or inadvertent scattering or spillage by animals. The BMW from such place or premises shall be directly transported in the manner as prescribed in these rules to the CBMWTF or for the appropriate treatment and disposal.

We observed during JPV that:

(a) huge quantity of BMW was scattered in a large stretch of open area within the premises of Vijayanagar Institute of Medical Sciences (VIMS), Ballari and bundles of MSW mixed with BMW were seen piled in a tractor trailer in the hospital (**Exhibit 8.5**);

(b) In Bidar Institute of Medical Sciences (BRIMS), Bidar, the container kept for collection of MSW was found mixed with BMW (**Exhibit 8.6**); and

[55] TMCs - Hiriyur, Mugalkhod, T. Narasipura and Ugar Khurd.

(c) Cases of dumping of BMW were observed in 21 hospitals and cases of burning were noticed in 36 test-checked government/veterinary hospitals (**Exhibit 8.7**).

Thus, it is evident from the above observations that compliance to BMW Rules was weak in test-checked ULBs, which would not only affect public health but also lead to contamination of environment.

## 8.3 E-waste

E-Waste (Management & Handling) Rules, 2011 (EW Rules, 2011) were notified in 2011 and came into force with effect from 1st May, 2012. MoEFCC, Government of India notified (March 2016) the E-Waste (Management) Rules, 2016 (EWM Rules, 2016) which came to be effective from 1 October 2016. These rules are applicable to every producer, consumer or bulk consumer, collection centre, dismantler and recycler of e-waste involved in the manufacture, sale, purchase and processing of electrical and electronic equipment or components specified in Schedule-I of these Rules.

### *8.3.1 Status of e-waste in Karnataka*

As per the information furnished by KSPCB, the generation of e-waste in the State was estimated (March 2014) at 86,118 MT/ annum by the Environment Management Policy and Research Institute, Bengaluru. The details of e-waste generated, collected and channelised to recyclers, dismantlers or otherwise disposed of in the State during the period 2012-13 to 2016-17 was not available either with KSPCB/DMA.

As of March 2017, KSPCB issued the Consent for Establishment (CFE) to 91 units (59 dismantlers, 23 recyclers and 9 dismantlers and recyclers) for recycling/dismantling of e-waste. We observed that Consent for Operation (CFO) was issued to only 77 units and CFOs for the remaining 14 units were in process. We further observed that out of 77 units to which CFOs were issued, 17 units were yet to be commissioned, 9 units were closed and 13 units did not receive any e-waste for further processing.

### *8.3.2 Role of local body as bulk consumer of e-waste*

Section 87 of KM Act, 1964 and Section 58(5) of KMC Act, 1976 stipulate that lighting of public streets, municipal markets, *etc.*, is one of the obligatory functions of the Corporation. ULBs are, therefore, responsible for management of tube lights in public streets, market places, *etc*. Further, EW Rules, 2011 and EWM Rules, 2016 define bulk consumer as bulk users of electrical and electronic equipment such as Central Government or State Government Departments, public sector undertakings, banks, educational institutions, multinational organisations, international agencies, partnership and public or private companies that are registered under the Factories Act, 1948 (63 of 1948) and the Companies Act, 2013 (18 of 2013) and health care facilities which have turnover of more than one crore or have more than twenty employees. The Rules, however, do not categorise ULBs as bulk consumers. As such, none of the test-checked ULBs were disposing discarded street lights in the prescribed manner.

In light of the above provisions and definition, ULBs are required to comply with the provisions in the Rules that are applicable to bulk consumers along with the provisions stipulating the responsibility of ULBs. It is also recommended to amend the extant Rules by incorporating provisions for ULBs so that such e-waste is managed/disposed effectively by ULBs.

### *8.3.3 Status of compliance to E-waste Management Rules*

The status of compliance in the test-checked ULBs with the provisions of e-waste management rules is as discussed below:

#### 8.3.3.1 Responsibility of Urban Local Bodies

Schedule III of EW Rules, 2011 and Schedule IV of EWM Rules, 2016 stipulates the responsibilities of municipal authorities/local bodies as

(i) to ensure that e-waste if found to be mixed with MSW is properly segregated, collected and channelised to authorised dismantler or recycler; and

(ii) to ensure that e-waste pertaining to orphan products[56] is collected and channelised to authorised dismantler or recycler.

Further, the KSPCB directed (February 2016) that local bodies shall make arrangements to separately collect e-waste from the household levels and see that arrangement is made to store them scientifically at the landfill sites and disposed to the authorised e-waste recyclers once in a while. Alternatively, municipal authorities can also establish e-waste collection centres in their towns at important locations and separately take care of the household e-wastes.

We observed that e-waste was not handed over separately by the households in any the test-checked ULBs but was mixed with MSW. The waste collectors also did not insist/direct the households regarding segregation and separate collection of e-waste. ULBs did not collect and channelise e-waste to authorised dismantlers/recyclers so far (December 2017). The JPV showed that e-waste was found mixed with MSW (**Exhibit 8.8**).

Except CMC, Hosapete, none of the other ULBs established e-waste collection centres. The centre established at CMC, Hosapete was non-functional as no e-waste was collected by ULB.

#### 8.3.3.2 Retention of e-waste by Urban Local Body

Rule 12 of EW Rules, 2011 and Rule 15 of EWM Rules, 2016, stipulate that every manufacturer, producer, bulk consumer, collection centre, dealer, refurbisher, dismantler and recycler may store the e-waste for a period not exceeding 180 days and shall maintain a record of collection, sale, transfer and storage of wastes and make these records available for inspection.

Retention of huge quantity of e-waste would occupy more space in the premises of ULB and causes unclean/unhygienic condition in the area. Therefore, periodical disposal of e-waste was required to be done by ULBs.

[56] Orphan products mean non-branded or assembled electrical and electronic equipment as specified in Schedule-I of the Rules or those produced by a company which has closed its operations or has stopped product support.

However, huge quantity of e-waste particularly tube lights were found dumped within the premises of ULBs. The quantum of tube lights dumped in HDMC and CC, Tumakuru indicates that tube lights have not been disposed by ULBs for years (**Exhibit 8.9**).

Out of the 35 test-checked ULBs, only two ULBs (HDMC, other than tube lights as indicated above and CMC, Chintamani) disposed e-waste during the review period. In 22 ULBs, e-waste generated were kept undisposed and 11 ULBs did not furnish any information about the disposal. The retention of e-waste by ULBs for more than 180 days of generation was in contravention of the rules. Further, scrutiny of records of e-waste disposed by the two ULBs revealed that the e-waste was auctioned and handed over to the local *kabadi wallas* and not to the authorised e-waste recyclers or dismantlers. Thus, e-waste was not channelised to authorised agencies for proper disposal which contravened the norms prescribed under the rules.

The State Government stated (May 2018) that provisions have been made in DPRs and draft bye-laws to ensure e-waste is collected separately and handed over to KSPCB authorised recyclers.

#### 8.3.3.3 Non-maintenance of e-waste record

In accordance with Rule 9 (responsibilities of bulk consumer) of EWM Rules, 2016, ULBs were required to maintain records for management of e-waste in Form II indicating the nature and quantity of e-waste generated, stored and transferred to recyclers, *etc*. We observed that the test-checked ULBs did not maintain the required records indicating the nature and quantity of e-waste generated, stored and disposed.

Therefore, ULBs did not plan or monitor management of e-waste effectively.

#### 8.3.3.4 Non-submission of annual returns

Bulk consumers of electrical and electronic equipment shall file annual returns in Form-3 to the concerned State Pollution Control Board on or before the 30$^{th}$ day of June following the financial year to which that return relates in accordance with Rule 9(4) of EWM Rules, 2016. (Filing of annual returns not envisaged in 2011 rules).

Check of records showed that none of the 35 test-checked ULBs filed the annual returns for the year 2016-17 to KSPCB and hence did not comply with the requirements. The monitoring authorities concerned also failed to ensure the necessary compliance.

Thus, it is clear from the above that ULBs did not take measures to put in place the requisite mechanism resulting in deficient/improper management of e-waste.

The State Government accepted (May 2018) the audit observations and stated that necessary steps would be taken to submit annual reports henceforth.

## 8.4 Slaughterhouse waste

Rule 3(1) of Prevention of Cruelty to Animals (Slaughterhouse) Rules, 2001, stipulate that no person shall slaughter any animal within a municipal area

except in a slaughterhouse recognised or licensed by the concerned authority empowered under the law for the time being in force to do so.

### *8.4.1 Status of slaughterhouses in Karnataka*

There are 23 slaughterhouses in Karnataka spread across 11 districts. All slaughterhouses in the State except the slaughterhouse at Tannery Road[57] in Bengaluru are categorised as 'small'. Ten slaughterhouses were constructed in seven of the test-checked ULBs, of which six slaughterhouses located in four[58] ULBs were functioning. The other four[59] though constructed (July 2012 to June 2014) at a cost of ₹1.44 crore have not been put to use due to opposition from public, *etc*. Thus, absence of slaughterhouses in 28 ULBs and non-functioning of the four constructed would only provide more scope for activities such as illegal slaughtering within the urban limits.

### *8.4.2 Operation of slaughterhouses without authorisation*

Section 25 and 26 of the Water (Prevention and Control of Pollution) Act, 1974 (Water Act, 1974), stipulate that any industry, operation or process, or any treatment and disposal system or any extension or addition thereto, which is likely to discharge sewage or trade effluent into a stream or well or sewer or on land is required to obtain CFE and CFO from KSPCB. Accordingly, slaughterhouses were also required to obtain the consent of KSPCB.

We observed that the five slaughterhouses were functioning without obtaining consent (authorisation) from KSPCB. Though CC, Mangaluru and HDMC obtained consents up to 30.6.2014, the same were not renewed. The other units did not obtain CFO of slaughterhouse so far. Operation of slaughterhouses without authorisation of KSPCB amounted to illegal slaughtering of animals in the urban limit. This implies that the compliance criteria were not adhered to, which would result in hazards to public health as well as contamination of the environment.

The State Government assured (May 2018) that authorisation would be insisted upon.

### *8.4.3 Construction of slaughterhouse in landfill site*

KSPCB notified (February 2014) guidelines for siting of slaughterhouse according to which the slaughterhouses shall be located preferably at an aerial distance of one kilometre away from SWM processing facility/landfill site.

We observed that DC, Raichur approved (September 2014) construction of slaughterhouse in MSW landfill site of TMC, Manvi for an estimated cost of ₹33.33 lakh under Backward Regions Grant Fund scheme (**Exhibit 8.10**). Accordance of approval by district authority for construction of slaughterhouse in a landfill site violated the guidelines of KSPCB. Further, it was observed that the constructed slaughterhouse was not put to use (September 2017).

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[57] **Slaughterhouse at Tannery Road**, **Bengaluru** still continues to exist despite being pointed out in Paragraph 4.1.13 of Audit Report-2013 (Report No.5 of the year 2014).

[58] CC, Ballari – 2; HDMC – 2; CC, Mangaluru – 1 and TMC, Manvi – 1.

[59] CMC, Nanjangud - 1; TMC, Magadi – 1; TMC, Manvi – 1 and TMC, T. Narasipura -1.

### *8.4.4 Management of slaughterhouse waste*

Waste material produced in the slaughterhouses is of three types: solid, liquid, and gas. Solid waste is generated from manure, intestinal contents, hair, horns, hooves, trimmings, internal organs, condemned carcasses or body parts, carton, and plastics. Liquid wastes of slaughterhouses come from urine, blood, and waste water from the slaughter processes. Gaseous waste materials (odour and emissions) are also produced in the operations.

These waste materials if not handled and managed properly pose a hazard to the health and environment. High concentration of animal blood and fat, dirt, and other pollutants in slaughterhouse effluent renders it very toxic to the receiving water bodies. Hence, scientific processing and disposal of slaughterhouse waste is essential to recover useful fractions and for safe disposal of residual pathogenic biological waste.

In the absence of a proper slaughterhouse waste processing or disposal facility, ULBs can practice deep burial of carcasses and animals killed in accidents with adequate precaution (Section 7.6 of MSWM Manual, 2016).

We observed that:

(i) None of the slaughterhouses had Effluent Treatment Plants to discharge the effluent except CC, Mangaluru. The liquid waste generated in other five slaughterhouses were allowed directly into the drain contravening the norms prescribed;

(ii) In all the test-checked slaughterhouses, control equipment for odour/ air emissions were not provided; and

(iii) solid waste generated in the slaughterhouses and retail mutton/chicken/fish shops, carcasses and dead animals were transported to landfill site and dumped in burial pits. In 13[60] ULBs, the slaughterhouse waste was mixed with MSW (**Exhibit 8.11**).

Thus, the ULBs failed to manage slaughterhouse waste effectively, which led to mixing of waste and unhygienic conditions, causing problems to health and contamination of the environment.

## 8.5 Construction and Demolition Waste

MSWM, 2000 stipulates that C&D waste, being predominantly inert in nature does not create chemical or biochemical pollution. Hence maximum effort should be made to reuse and recycle them. It was only in 2016 that separate rules for C&D waste was notified by Government of India. In the meantime, KSPCB issued (February 2014) guidelines for construction debris management and its disposal.

[60] CCs - Ballari and HDMC; CMCs -Bagalkote, Hiriyur, Hosapete, Nanjangud and Sagar; TMCs – Bhatkal, Maddur, Manvi and T. Narasipura; TPs - Honnavara and Kudligi.

### 8.5.1 Status of generation of construction and demolition waste

MoEFCC has admitted that there is no systematic database on C&D waste. According to the Technology Information, Forecasting and Assessment Council, the total C&D waste generation estimated in India from buildings activities in the year 2013 was 530 million tons. The information on quantum of C&D waste generated in the State and in ULBs (other than BBMP) is not available with KSPCB and DMA. Similarly, test-checked ULBs also do not have the data on C&D waste generation in their jurisdiction. However, the DPRs prepared for 20 test-checked ULBs, estimated C&D waste generated at 138 TPD in the year 2016. C&D waste generated was not quantified in the DPRs of 10 ULBs. DPRs for five newly upgraded ULBs were not prepared.

### 8.5.2 Non-identification of site for disposal of construction and demolition waste

In accordance with KSPCB guidelines, debris shall be removed within 48 hours from the place of construction by ULBs, by engaging debris contractor and transported to a place designated by ULB for its disposal preferably an abandoned quarry away from city/town with prior authorisation from KSPCB. The guidelines also state that ULBs shall constitute a separate squad to ensure timely lifting, transporting and disposal of debris in the designated place.

We observed that except HDMC, CC, Mangaluru and CC, Tumakuru, none of the other ULBs identified the site for disposal of C&D waste. In HDMC, an abandoned quarry at Adargunchi village (seven kilometres from Hubballi) was notified only in September, 2017. In CC, Mangaluru, two acres of quarry land identified was taken up with concerned Tahsildar during 2015 and the proposal was yet to be approved. In respect of CC, Tumakuru, though the proposal was sent (January 2016) to DC seeking approval, the same was yet to be accorded (July 2017).

Thus, failure to identify the site for disposal of debris by test-checked ULBs, and delay in according approval for C&D disposal sites, denied ULBs of separate disposal area for C&D waste. In the absence of debris disposal site, public were allowed to dump C&D waste in low-lying areas, roadsides and near water bodies which is evident from the JPV conducted in the test-checked ULBs. Separate squads were also not identified by the test-checked ULBs.

**Case study of TP, Raibag**

The joint physical verification conducted (7 June 2017) by audit with the officials of TP, Raibag showed heaps of C&D waste dumped across various parts of the town (**Exhibit 8.12**). Public Works Department (PWD) was the major generator of C&D waste as it took up works of road widening and demolition of buildings.

The TP stated (January 2018) that immediate action to clear the waste was difficult till the road widening work was completed by PWD. The reply was not consistent with the KSPCB guidelines as it mandated removal of debris within 48 hours.

The State Government stated (May 2018) that instructions had been issued to all ULBs to identify suitable land for disposal of C&D waste.

### 8.5.3 Non-levy of charges for management of construction and demolition waste

The provisions of MSWM, 2000, C&D Rules, 2016 and KSPCB guidelines authorise local bodies to levy charges from the debris generators and make use of this money for lifting, transporting and disposal of C&D waste.

We observed that other than CMC, Nanjangud and TP, Kudligi, none of the other test-checked ULBs fixed any charges of management of C&D waste. CMC, Nanjangud and TP, Kudligi collected ₹4.17 lakh and ₹1.40 lakh respectively during the period 2012-13 to 2016-17. We observed that despite collecting charges, CMC, Nanjangud did not lift C&D waste. TP, Kudligi was collecting the waste but dumping in low-lying areas.

Thus, despite the enabling provisions, ULBs failed to augment this source of revenue.

### 8.5.4 Non-levy of penalty for illegal dumping of debris

KSPCB guidelines (February 2014) for C&D waste in ULBs stipulate that ULBs shall introduce penalty clause in their bye-laws for stocking/dumping of debris illegally by the construction agencies and shall enforce the same. The quarterly report of violation/penalty shall be furnished to KSPCB for monitoring. Further, as per Section 431 A of KMC Act, 1976 (Schedule XIII) applicable for CCs, dumping of building waste irregularly attracts penalty of ₹1,000 for first offence and ₹5,000 for second and subsequent offence. KM Act, 1964 does not contain a similar provision, but Section 224 stipulates a fine of up to ₹25 for dumping of dust, dirt or other rubbish, *etc*., which is not significant in comparison with the quantum of C&D waste.

We observed that only two ULBs prescribed levy of penalty. CMC, Bagalkote prescribed (June 2016) ₹500 fine per day for dumping of debris in public places and TMC, Kumta passed (March 2017) resolution for imposing penalty of ₹1,000 for first offence and ₹5,000 for second offence onwards towards unauthorised disposal of C&D waste. None of the ULBs furnished the report on violations/penalty to KSPCB.

The State Government stated (May 2018) that as per the draft bye-laws, ULBs can fix the user fee for collection, transportation and disposal of C&D waste and provisions have also been made for levy of fine for non-compliance.

***Recommendation 18: The State Pollution Control Board needs to ensure that all health care institutions, slaughterhouses, recyclers, etc., obtain necessary authorisation for their functioning and enforce adherence to prescribed standards.***

***Recommendation 19: KSPCB/ULBs may maintain a comprehensive database of health care institutions, slaughterhouses, recyclers, etc., and strictly enforce their adherence to BMW, plastic, e-waste, slaughterhouse and construction and demolition rules.***

***Recommendation 20: The State Government and ULBs may put in place suitable systems to enforce Extended Producer Responsibility for specific waste categories as per the relevant rules.***

**Exhibit 8.1: Animals feeding on MSW dumped on roadside (Paragraph 8.1.2.1)**

**HDMC (4.5.2017)**

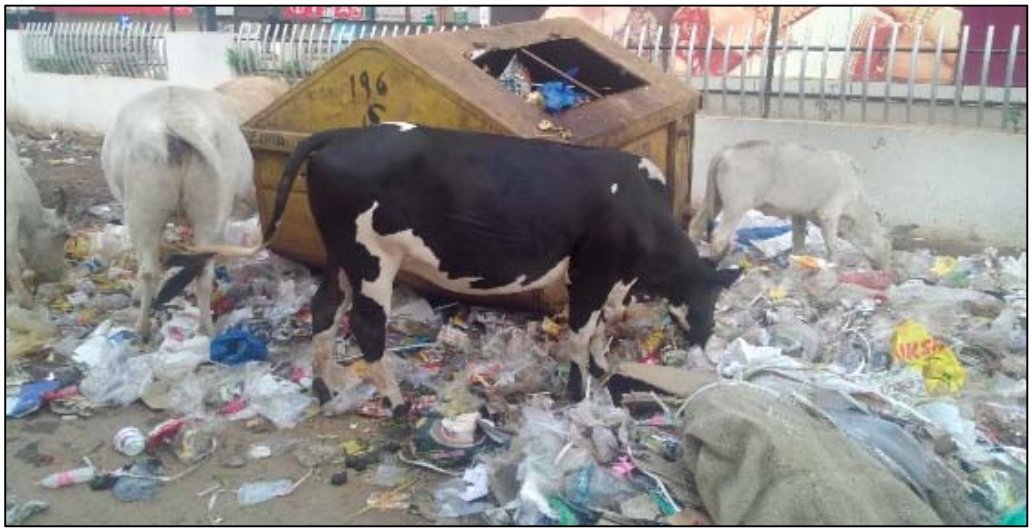

**Exhibit 8.2: Surgery performed on cattle for removal of plastic (Paragraph 8.1.2.1)**

**CMC, Bidar**

**Exhibit 8.3: Death of cattle at TMC, Malur (Paragraph 8.1.2.1)**

**Exhibit 8.4: Deep burial pits in Veterinary Hospitals (Paragraph 8.2.5)**

**CC, Ballari (8.8.2017)**


**CMC, Nanjangud (5.7.2017)**

**Exhibit 8.5: Scattering and dumping of BMW in hospital premises (Paragraph 8.2.7)**

**VIMS, Ballari (9.8.2017)**

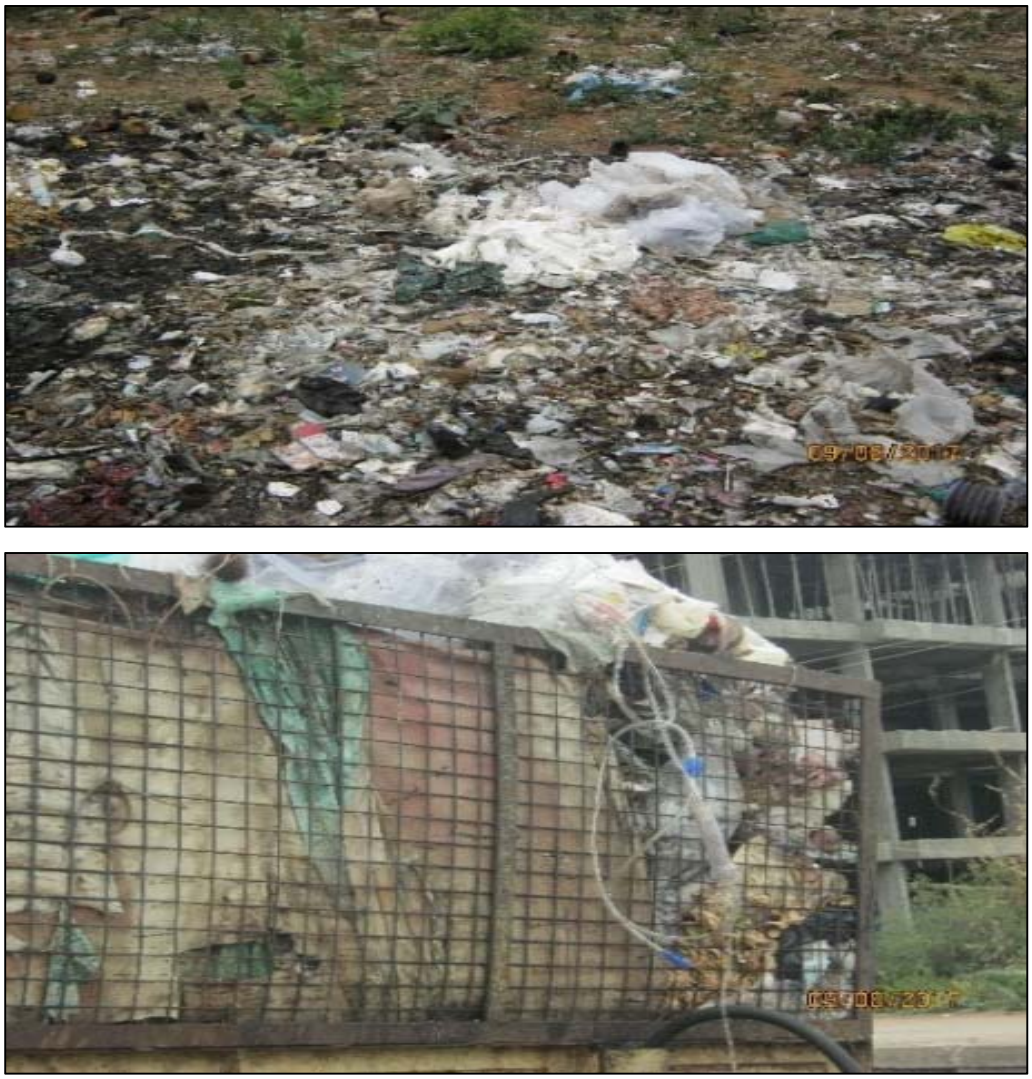

**Exhibit 8.6: BMW mixed with MSW in BRIMS, Bidar (9.8.2017)**

**Exhibit 8.7: Scattering and dumping of BMW in hospital premises (Paragraph 8.2.7)**

**General Hospital, Nanjangud (6.7.2017)**

**General Hospital, Malur (18.8.2017)**

**Exhibit 8.8: E-waste mixed with MSW (Paragraph 8.3.3.1)**

**TP, Kudligi (18.5.2017)**

**CMC, Karwar (26.5.2017)**

**CMC, Nanjangud (5.7.2017)**

**Exhibit 8.9: Dumping of Tube lights (Paragraph 8.3.3.2)**

**CC, Tumakuru (31.3.2017)**

**HDMC (27.4.2017)**

**CMC, Karwar (26.5.2017)**

**Exhibit 8.10: Slaughterhouse constructed in landfill (Paragraph 8.4.3)**

**TMC, Manvi (8.9.2017)**

**Exhibit 8.11: Slaughterhouse waste mixed with MSW (Paragraph 8.4.4)**

**HDMC (28.4.2017)**

**TMC, Bhatkal (9.5.2017)**

**Exhibit 8.12: Dumping of C & D waste in TP, Raibag (7.6.2017)**

**(Paragraph 8.5.2)**

**Shantinagar Ward no. 2**

**Chikkodi Road Ward no. 3**

**Chikkodi Road Ward no. 1**