

# Haritha Karma Sena and Non-Biodegradable Waste Management

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**Abstract—** *Haritha Karma Sena is an organisation based in India that focuses on environmental conservation and waste management. This abstract explores the role of Haritha Karma Sena in addressing the issue of non-biodegradable waste management. Non-biodegradable waste consists of materials that do not break down naturally or take a significant amount of time to decompose, posing significant environmental challenges. Improper disposal of non-biodegradable waste can lead to pollution of land, water bodies, and the air. Haritha Karma Sena employs various initiatives to tackle non-biodegradable waste management effectively. Firstly, the organisation promotes waste segregation at the source, encouraging individuals to separate non-biodegradable waste from biodegradable waste. This facilitates efficient waste management and enables proper recycling and disposal of non-biodegradable materials. By emphasising the importance of recycling plastic, glass, paper, and other recyclable materials, they contribute to the reduction of waste sent to landfills. The study assesses the significance of shredding and bailing facilities in RRFs for managing plastic waste. It examines the impact of these facilities on reducing the volume of plastic waste and minimising environmental pollution.*

**Index Terms-** *Haritha Karma Sena, Resource Recovery Facility.*

## I. INTRODUCTION

Kerala, one among the major densely populated States, has been severely suffering from the issue of waste disposal. Most of the towns in Kerala do not collect the total waste generated and only a fraction of the collected waste receives proper disposal. A high proportion of the collected waste is disposed of unscientifically at waste disposal Sites, including road sides and other public areas. Local administration in Kerala has instituted many waste treatment plants in collaboration with the private service providers for affective waste management. However, a substantial part of the households does not benefit Regular waste collection services from the authorities. Besides,

inefficient collection and disposal of solid waste pollute water, land and air, and pose risks to human health and environmental quality. It adversely affects the health and environmental quality of nearby people. A tremendous increase in population and corresponding urbanization, and remarkable improvement of living standards of people are the reasons for significant changes in the life style of human beings. These factors impede the environmental status of the region concerned. People of urban centers are generators of huge volumes of wastes. It is born out of their intensified production and consumption activities. Accumulation of waste is a great malice to nature, human and animals. A lion share of human made pollution is plastic waste which is essentially accused of polluting natural resources and contributing to change in environmental quality thereby affecting eco-balance. Plastic waste generation is a big challenge faced by many countries around the globe, especially the urban centres. Solid waste especially Plastic waste has become an Important local environmental issue in recent years and one of the impact of human exploitation of environment, High population, rapid economic growth and the change in the living standards accelerates the generation of plastic waste in Indian cities. Ministry of Environment and forest, Government of India (2016) pointed out that the Indian state of Kerala is considered to have a developed modern Society. All types of wastes Including solid, hazardous and biomedical waste generation in the state are high. Increasing urbanization, changing lifestyle, rapid economic development, consumption pattern and rise in tourism are the main reasons for the rise in the waste generation in the state. Malinya Muktha Kerala Action Plan (2007) pointed out that the per capita waste generation is relatively high in Kerala due to the particular consumption pattern in the State. It has the potential to pollute all the vital component of the living environment, that is, land and water at local and global levels. Hence quantities of waste generation and its

determinants in the state are at the forefront of discussion not only among policy makers but also a major among academicians and researchers.

### 1.1 Solid Waste Management

Waste is defined as any material either a solid, liquid or gas that is unwanted, unvalued and/or discarded or discharged by its owner. Solid wastes are organic and inorganic refuse produced by various activities of the society that have lost their value to the first user. In other words, wastes like sewage sludge, garbage, industrial waste, trash, ashes, discarded metal or any solid or semi-solid material are categorized under solid wastes. Generally, classification of solid waste is done on the basis of their sources. The waste can be household, industrial, or agricultural. Household wastes are generated from domestic human activities in the residential areas. These can be of different types depending upon how long they can persist or stay in an environment. The two types are biodegradable and non-biodegradable waste. Solid waste management has been an important social problem worldwide. Man-made disaster mainly leads to solid waste problem and depends to a great degree on greed and ignorance. Information on waste quantity and composition are strategic in order to adopt an effective waste management program and is the basis to understand successful waste management planning and waste recovery. Generally, the waste components that are organic can be composted and entities like glass, paper, plastics and metals can be recycled.

The concepts about waste management vary in their usage between countries or regions. The most widely used concepts include that of waste hierarchy referred to as the “3 R’s” i.e., Reduce, Reuse and Recycle. The 3 R’s classify waste management strategies in accordance to their desirability in terms of waste minimization and is the cornerstone of most waste minimization strategies. The 3 R’s focus to extract maximum practical benefits from products and aim to generate minimum amount of waste. Similarly, concept of ‘The polluter pays principle’ can reduce pollution as the polluting party pays for the impact caused to the environment. The waste generator has to pay for appropriate disposal of the unrecoverable material. Interest of society in reuse, recycling, and recovery of materials from refuse has grown. Reuse of materials comprises voluntary continued use of a

product for a purpose that may not have been originally intended like reuse of coffee cans for holding nails, or the extended use of a product like re-treading automobile tires. The reuse of materials results in product that does not return to the industrial sector and remains within the public or consumer sector. Waste recycling is collection product and return of this entity to the industrial sector. This differ from reuse as the materials do not return for remanufacturing like collection of newspapers and aluminium cans by individuals and their collection, eventual return to paper manufacturers or aluminium companies. The process of recycling needs public participation as they must perform the separation step.

### 1.2 Plastic Waste Management

Plastic wastes that are generated from households needs special attention. A systematic observation and analyses on households utilization of plastic bags, management of these wastes, understanding the factors responsible for present level of household management and disposal, their attitude and perception on waste disposal, their awareness on health hazards and environmental impact of plastic waste and households’ concern over environment is needed. Plastic products have become an integral part in our daily life as a basic need. It is produced on a massive scale worldwide and its production crosses the 150 million tons per year globally. It has a broad range of application in films, wrapping materials, shopping and garbage bags, fluid containers, clothing, toys, household and industrial products, and building materials. It is a fact that plastics will never degrade and will remain on the landscape for several years. Mostly, plastics are recyclable but recycled products are more hazardous to the environment than the virgin products. The recycling of a virgin plastic material can be done 2 to 3 times only, because after every recycling, the plastic material is deteriorated due to thermal pressure. Plastics are durable & non-biodegradable; the chemical bonds make plastic very durable & resistant to normal natural processes of degradation.

Since 1950s, around 1 billion tons of plastic have been discarded, and they may persist for hundreds or even thousands of years. The plastic gets mixed with water, doesn't disintegrate, and takes the form of small pallets which causes the death of fishes and many other

aquatic animals who mistake them as food materials. Plastics have become the common man's friend. These materials are manufactured using polymers like polyethylene, polypropylene, and polystyrene. The tubes and wires are made out of poly vinyl chloride. These materials once used are either thrown out or littered and ultimately get mixed with Municipal Solid Waste (MSW). They are either land filled or incinerated. Both are not eco-friendly processes as they pollute the land and the air. India is using plastics of different kinds since 1960. The rising needs of the middle class, and abilities of plastics to satisfy them at a cheaper price as compared to other materials like glass and metal, are the reasons for the increase in the consumption of plastics in the last few years. Plastic bags (thin and thick) are used to carry both perishable and non-perishable commodities. Plastic is difficult and costly to recycle and mostly end up on landfill sites where they take up to 1000 years to photo degrade. As a result when an animal dies and the plastic enters the environment, posing a continuing threat to wildlife. Plastic bags and plastic waste are also major contributors of environment pollution in India.

Plastic waste management literally means selection of ideal combination of methods of disposing plastic waste in such a way that the plastic will have least negative externalities considering the geography and the demographic characteristics. Plastic waste management is a major challenge in throughout the world. efficient waste management program, the waste generated from industrial and domestic can result in health hazard and have a negative impact on the environment. New technologies have been developed to minimize their adverse effect on the environment. Under this circumstance, an alternate use for plastic waste will have to be introduced. In India for safer disposal of plastic waste various technologies have been experimented in recent years along with land filling, incineration and recycling. The disposal of plastic waste is a greater problem, since plastics are non-bio- degradable and has a long life and pose environmental pollution; still the country is practicing the traditional way of plastic waste management. Physical handling of plastic waste and recyclables is just one of the waste management activities; that alone cannot fulfil the requirement of sustainable and integrated solutions. Land filling, incineration, and

recycling prove not only unscientific but also aggravating the environmental burden.

### 1.3 Haritha Karma Sena (HKS)

The entire process of non-biodegradable waste management is overseen by Suchitwa Mission (SM) – a technical body of the Government of Kerala, under the Local Self Government Department (LSGD). It is the nodal agency in the State for implementing Swatch Bharat Mission projects and for assisting local self-government institutions (LSGIs) in projects related to sanitation and waste management. In this regard, SM provides technical sanctions and issues the state government's share of funds to sanitation and waste management projects, implemented by Haritha Karma Sena (HKS). or the Green Task Force is a micro-enterprise unit formed in each LSGI. Its members are trained by Haritha Sahaya Sthapanam (HSS) – a body empanelled by Suchitwa Mission to provide local-level technical and managerial support to local self-government institutions such as Gram panchayats, Municipalities, and Corporations to successfully implement their decentralized waste management activities. HSS provides vital support to achieve a waste-free Kerala. Suchitwa Mission has also empanelled NGOs and agencies with expertise in the field to handhold the HKS. Currently, HKS is functional in 1031 out of 1034 LSGIs. The HKS conducts a survey to ascertain the requirement of waste management facilities at household and institutional levels. It monitors the establishment of source level solid waste management devices at houses and institutions. Thereafter, the HKS every two weeks visits households and institutions where source level biodegradable waste management devices have been installed to inspect their working and provide support if required. They also provide assistance for composting, providing them the monthly supply of inoculum and other help related to the Green Protocol. Conducting awareness programmes and selling value added products made from non-biodegradable waste through the Clean Kerala Company Limited (CKCL) or other agencies is another responsibility of the HKS. HKS appoints 2 persons in each ward for door-to-door collection of non-biodegradable waste such as paper, plastic, medicine covers, etc., at regular intervals, and also assists in biodegradable waste management. For these services, it collects a monthly user fee which varies

from Rs.40 to Rs.60 for households and Rs.100 for institutions (for about 2 sacks and the amount increases based on the volume of waste). Waste that is collected is sorted and transported either to the mini-Material Collection Facilities (MCF) located in GPs or the MCFs at the ward level. The facilities are equipped with weighing and bailing machines. As on 27th January 2023, there are 932 functional MCFs in panchayats, 114 in municipalities, and 21 in corporations. Waste collected at MCFs includes plastic materials below 50 microns such as carry bags, toys, packing materials, etc.; Plastic materials above 50 microns that have scope to be recycled – PET bottles, milk covers, aluminium cans, broken buckets, plastic plates and furniture, etc.; leather products (shoes, bags), broken glass, broken plates (steel, aluminium, iron, etc.), cardboard, newspaper, etc.; medicinal strips, toothpaste tubes, bottles and covers of beauty products; e-waste; tyres, rubber products; thermocol; different types of metal; beer cans/alcohol bottles. Waste that cannot be collected at MCF includes biodegradable waste such as food waste, slaughterhouse waste, poultry waste; market waste and non-biodegradable waste such as chemicals or bottles containing chemicals, kerosene, petrol or diesel; as well as sanitary napkins and diapers. From MCFs, plastic waste is transported to Resource Recovery Facilities (RRFs) that are functional at cluster level.

#### 1.4 Material Collection Facility Centres (MCFs)

To actualize the model of decentralized management, Material Collection Facilities (MCFs) need to be set up as the LSG level centres for waste storage and segregation and Mini MCFs need to be set up at the ward levels- primarily as local centres for the storage of waste and to reduce the workload of and drudgery on waste collectors. These Mini-MCFs and MCFs play an important role in secondary storage and segregation before sending the waste for recycling. As of date, more than 91% of the 941 Gram Panchayats in Kerala have either a functional MCF or a fully constructed MCF. Mini-MCFs have been introduced with the objective of reducing the drudgery of waste handling by waste collectors; and also for reducing the overall workload. These are interim waste storage spaces at the ward level. MCFs have been established at the LSG level (Panchayats and Urban Local Bodies) for the purpose of storage and Segregation of non-biodegradable waste. The Local Self Government

Department of the Government of Kerala had issued a circular for preparing a work calendar for its functioning. The work calendar ensures segregation of waste at source and reduces the drudgery of workers at the MCF. Ensuring the functioning of the MCFs and Calendar-based work is supposed to be the responsibility of the LSGIs.

#### 1.5 Resource Recovery Facility Centres (RRFs)

As on 27th January 2023, there are 57 functional RRFs in Gram panchayats, 60 in Block panchayats, 67 in municipalities and 11 in corporations. From MCFs, plastic is transported to Resource Recovery Facilities (RRFs). At RRFs the process involves dust removal, shredding and baling of plastic waste to recover usable fractions. While non-recyclable plastics are shredded for use in road construction work, e-waste, glass and metals are channelized to recycling centres through Clean Kerala Company Limited. In RRFs, Plastic shredding and bailing machines of adequate capacities are installed for further processing. Resource Recovery Facilities (RRF) are an important part of the modern waste management system RRF operates as a space where non-biodegradable waste after a primary sorting is further sorted and made available for production and consumption activities with necessary infrastructure, tools and human power. The recyclable waste is channelized for recycling while the non-recyclable plastics are shredded and used for road tarring. The shredding and bailing facilities of RRF established in the block and panchayat level are innovative in plastic and other non-biodegradable waste management. Bailing machine, weighing machine, and scrap grinder are the three important machines used in the RRF centres. Bailing machines are used to compress heavy scrap metal and plastic waste materials into large dense blocks by using a hydraulic baling press in order to increase the density of the scrap. This eases the transportation of heavy waste The waste coming into the RRF centres as well as that outgoing is supposed to be weighed and recorded each day. And the scrap grinder or shredding machine is used to shred the non- recyclable plastic. These shredded plastics are mainly used for road tarring. Road tarring using plastic is called polymerized road construction.

### 1.6 Recycling

Recycling is not the complete solution for the disposal of waste plastic. After third/fourth, recycling the plastic is unfit for reuse and hence ultimately it ends up in land filling. Some types of plastics are not suitable for recycling. However, this method is only suitable for processing segregated plastic materials and is not suitable for assorted municipal waste plastic. Sorting of plastics is technically

### 1.7 Pigouvian Tax and Tax on Trash

A Pigouvian tax is a tax assessed against private individuals or businesses for engaging in activities that create adverse side effects for society. Adverse side effects are those costs that are not included as a part of the product's market price. These include environmental pollution, strains on public healthcare from the sale of tobacco products, and any other side effects that have an external, negative impact. Pigouvian taxes were named after English economist, Arthur Pigou, a significant contributor to early externality theory. The idea of waste management tax (tax to finance the disposal of solid waste) is taken from the concept of Pigouvian tax. The study conducted by the National Environmental Engineering Research, Institute has recommended a tax to finance the disposal of solid waste. The study was conducted for the Bombay municipal corporation under the Metropolitan Environmental Improvement Programme. The report recommends that the net financial burden of garbage disposal be transferred to users through a 'solid waste benefit tax'. A Pigouvian tax is intended to tax the producer of goods or services that create adverse side effects for society. Economists argue that the costs of these negative externalities, such as environmental pollution, are borne by society rather than the producer. The purpose of the Pigouvian tax is to redistribute the cost back to the producer or user of the negative externality. A carbon emissions tax or a tax on plastic bags are examples of Pigouvian taxes. Pigouvian taxes are meant to equal the cost of the negative externality but can be difficult to determine and if overestimated can harm society.

### 1.8 Significance of the Study

Keralites in spite of their personal cleanliness have not given up their primitive practice of disposing waste in their immediate surroundings and in vacant plots. This attitude of the citizens towards environment has been

an obstacle in achieving economic development and ecological balance simultaneously. Most of the garbage dumps in the state are located in regions where economically weaker sections live. The weaker sections are actually forced to bear the treatment cost due to disposal of waste, which they hardly generate. Once their health is affected due to the impact of waste disposal, they will become financially weaker by incurring more treatment cost and by suffering loss of working days, which will lead to further widening of income inequality. Deterioration of health status is also a vital determinant of productivity in several sectors of economy. Several environmental issues regarding plastic waste arise predominately due to the throwaway culture and lack of waste management system, inadequate resources, in-appropriate technologies, management apathy and low efficiency of system are unable to give fruitful results. The management of plastic waste involves multiple storage process at the beginning stage as a source (primary storage or secondary storage), collection, transportation, recycling and final disposal of the refuse. There is no one best method of managing plastic waste that can serve best all cities. One has to approach managing solid waste and plastic waste in an innovative manner since selection of the best device and practice at each stage depends on a variety of specific circumstances to the city under consideration. Poor solid waste and plastic waste handling is threatening the lives of inhabitants.. To improve this pressing problem the local body together with all stakeholders has to put maximum effort.

### 1.9 Non-Biodegradable Waste Collection- Haritha Karma Sena (HKS)

Haritha Karma Sena (HKS) or Green Task Force - a Micro Enterprise Unit formed in each LSGI with 2 persons in each ward to do door to door collection of non-biodegradable waste & assist in biodegradable waste management by charging a user fee. Haritha karma sena (HKS) functional in 1031 LSGIs out of 1034. Each ward has 2 HKS (Green task force) members. Their training given by the local bodies with the help of Haritha Sahaya Sthapanam empanelled by Suchitwa Mission. Mission has empanelled NGOs and agencies who have expertise and experience in this field as Haritha Sahaya Sthapanam to help/handhold HKS. The user fee varies from Rs.40 to 60 for households and Rs.100 for institutions (for about 2

sacks and the amount will increase if the quantity of waste is more). Collected waste are stored at Mini-MCF located at ward level.

Table 1: Haritha Karma Sena Project Status (As on 27-01-2023)

District	Number of Grama Panchayat	Number of Municipalities	Number of Corporations	Total Number of LSG's	Number of HKS	Number of HKS Units Started Operation	Number of HKS Consortium Formed
Thiruvananthapuram	73	4	1	78	1706	34	27
Kollam	68	4	1	73	2477	18	4
Pathanamthitta	53	4	0	57	1528	38	41
Alappuzha	72	6	0	78	3460	20	8
Kottayam	71	6	0	77	2187	33	26
Idukki	52	2	0	54	1736	18	45
Ernakulam	82	13	1	96	2251	16	12
Thrissur	86	7	1	94	2200	20	11
Palakkad	88	7	0	95	2862	35	9
Malappuram	94	12	0	106	2925	25	61
Kozhikode	70	7	1	78	3004	67	27
Wayanad	23	3	0	26	491	7	26
Kannur	71	9	1	81	1500	59	19
Kasaragod	38	3	0	41	1193	20	8
<b>TOTAL</b>	<b>941</b>	<b>87</b>	<b>6</b>	<b>1034</b>	<b>29520</b>	<b>410</b>	<b>324</b>

(Source: Kudumbashree, State Poverty Education Mission, Govt of Kerala)

Haritha Karma Sena is a professional team consisting of Green Technicians and Green Supervisors mainly Kudumbashree Women who will be assigned with the responsibility of collection, transportation, processing, recycling / disposal, and management of waste materials in association with respective LSGs and Suchitwa Mission. Green Technicians are trained manpower recruited to provide technical services and solutions on waste management projects. One Green Technician has to visit 250 households in a ward. In one Ward two Green Technicians will be positioned and one supervisor for managing 15 Wards. So for a Panchayat having 15 Wards, the total manpower will be 31. The Green Supervisor must be a graduate able to operate computers and give reports. The Collection of user fee will be the responsibility of Green Supervisor. Haritha Sahaya Sthapanam the accredited agencies of Haritha Kerala Mission which will provide technical assistance to the Haritha Karma Sena. There are 1034

LSG's (Gramapanchayath, Municipality, Corporation) in Kerala. The Table.1 reveals that 410 Haritha Karma Sena Units and 324 Haritha Karma Sena Consortium Functioning in Kerala .

The local self-government department has issued stringent guidelines to ensure segregation of waste at the source. The LSGD has also come out with a revised calendar for the collection of various categories of non-biodegradable waste generated by households. Haritha Karma Sena will collect all types of Plastic waste and paper once a month, medicine strips, toothpaste, toiletry tubes and covers every two months, broken glass every three months, e-waste every six months and leather products once a year. The order directs secretaries of local bodies to ensure that only segregated waste based on the calendar is brought to material collection facilities (MCFs). There

are around 1,066 MCFs and 195 resource recovery facilities (RRFs) in the state.

1.10 Material Collection Facilities (MCF)

MCF stands as the site for first level collection of waste for any LSGI. These units are established for LSG level storage of segregated non-biodegradable waste. The plastic waste collected from households and institutions after sorting are transported to Material Collection Facilities (MCF) by HKS. The collected materials are temporarily stored at MCF. The Collected materials are segregated at MCF and valuable items are sold locally from MCF itself. Plastics will be send to RRFs. As per the Suchitwa Mission guidelines, at least 1 MCF should be established in each LSG. LSGD issued a circular for preparing a work calendar to facilitate proper functioning of the MCFs. The work calendar specifies the dates of collection for different categories of waste, such as pet bottles, plastic, medicine wrappers, used sandals etc. This work calendar ensures segregation of waste at source, systematic collection of waste as per categories and ultimately reduces the drudgery of HKS and other workers at the MCF. Ensuring that the door to door collection is calendar based is the governance role of the LSG. A total of 1,110 Material Collection Facilities have been established across the state, A total of 935 Material Collection Facilities have been established across 941 Gramapanchayath, A total of 97 Material Collection Facilities have been established across 87 municipalities, A total of 78 Material Collection Facilities have been established across 6 corporations. However, there are districts such as Kasaragod where the number of MCFs compared to the number of GPs is way higher. All the districts except Wayanad have at least one Panchayat without MCFs. Thiruvananthapuram, Ernakulum, Thrissur, and Kozhikode have at least 10 Panchayats each without MCFs. The state data tells us that about 90% of the MCFs are functional across Gramapanchayath.

1.11 Resource Recovery Facilities (RRF)

Resource Recovery Facilities (RRF) are an important part of the modern waste management system where a paradigm shift has occurred from ‘managing waste’ to ‘managing resources’. RRF operates as a space where non-biodegradable waste after a primary sorting is further sorted and made available for production and

consumption activities with necessary infrastructure, tools and equipments such as Bailing being used in RRF human power. The recyclable waste is channelized for recycling while the non-recyclable plastics are shredded and used for road tarring. RRFs are supposed to be set up at cluster/block level. RRFs are for higher level storage of segregated non-biodegradable waste including hazardous waste, which the Clean Kerala Company further treats.

Table 2. Status of Functional RRF in Kerala (As on 27-01-2023)

Local Bodies	Number of RRF Centres
Grama Panchayats	57
Block Panchayats	60
Municipalities	67
Corporations	11
Total	195

(Source: Suchitwa Mission - Local Self Government Department - Government of Kerala)

There are 57 functional RRFs in Grama Panchayats, 60 in Block Panchayats, 67 in Municipalities and 11 in Corporations (as on 27.01.2023). At RRFs dust removal, shredding and baling of plastic waste are carried out to recover usable fractions. Recovered fractions from RRF are forwarded for its reuse or recycling. Plastic shreds, rejects etc. from MCFs are also transferred to CKCL.

1.12. Suggestions

- The government needs to create more and more infrastructural facilities for the disposal of the waste.
- Basic infrastructural facilities in RRF and MCF, such as toilets, fans, and restrooms, need to be improved.
- The government should conduct more green protocol awareness programmes.
- The government should ensure that the programmes and policies reach society very effectively.
- The government should distribute the cloth carry bags to all the families.

## CONCLUSION

The Solid Waste Management Rules, 2015, of the Government of India state that it is the responsibility of the local self-governments (LSG) to provide waste management services in their jurisdiction and collect user fees from individual households and institutions for such services. The rules also mandate the segregation of waste at the source. Decentralised Solid Waste Management, as conceived in Kerala, is a system involving the segregation and processing of waste at the source to the maximum extent possible and then at the community level. There are different methods for the treatment of biodegradable and non-biodegradable waste in such a system. While composting is a common method used for the treatment of biodegradable waste, non-biodegradable waste is collected and made available for recycling processes. These aspects substantially reduce the amount of waste reaching landfill sites, minimising associated issues. The decentralised system has been credited for not only being sustainable and financially viable but also for helping improve the quality of life and working conditions of the waste collectors. It is known to promote green growth, reduce greenhouse gas emissions, and reduce the transportation of organic solid waste to the waste disposal site. The adoption of a decentralised solid waste management system also necessitates the need to have an institutional framework with strong local self-governments directly responsible for waste management and an empowered and informed citizenry indulging in responsible waste management practices and behaviours. The LSGs are the primary stakeholders in Kerala's waste management space and have an important regulatory and enforcement role to play, from ensuring the proper functioning of Mini MCFs and MCFs to monitoring, tracking, and reviewing the processes involved in waste management.