

WASTE TO

ENERGY

PROJECT



Mira Bhayandar
@2047
Innovate, Connect, Prosper



**एकच लक्ष्य
शहरे स्वच्छ**
स्वच्छ महाराष्ट्र अभियान (नागरी) २.०

स्वच्छ
सर्वेक्षण
2024



MIRA BHAYANDAR MUNICIPAL CORPORATION

HOTEL WASTE CHANNELIZATION

WASTE TO ENERGY

A Sustainable Solution for Hotel Waste Management in MBMC

Mira Bhayandar Municipal Corporation

- 1. Introduction**
- 2. Objective**
- 3. Implementation Structure: Roles and Responsibilities**
- 4. Methodology**
- 5. Management and Monitoring Mechanism**
- 6. Reporting and Grievance Redressal**
- 7. Results Achieved**
- 8. Conclusion**

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A Sustainable Solution for Hotel Waste Management in MBMC



1. INTRODUCTION

The Solid Waste Management Department of Mira Bhayandar Municipal Corporation (MBMC) is responsible for overseeing the collection and disposal of waste generated within the city.

- MBMC oversees waste management in Mira Bhayandar.
- There are 280+ hotels that generate 30-40 tons of wet waste daily.



2. OBJECTIVES

- Establish Standardized Procedures: Create uniform protocols for the collection of segregated waste from hotels in Mira Bhayandar.
- Efficient Waste Collection: Ensure timely and effective collection of segregated waste to optimize operational efficiency.
- Proper Processing: Facilitate the processing of collected waste at designated biogas plants to promote sustainable waste management.
- Compliance with Environmental Regulations: Ensure all procedures adhere to local and national environmental regulations to minimize ecological impact and to Promote Waste Segregation: Encourage hotels to implement effective waste segregation practices at the source



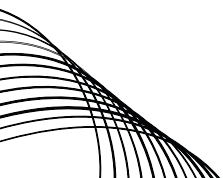
3. Implementation Structure: Roles and Responsibilities

A) MBMC

- Centralized team for solid waste management oversight at SBM War room.
- Implementation of onsite coconut source segregation practice.
- Dedicated team for planning and coordination of waste management projects.
- Supervisors deployed for onsite segregation of coconut waste management.
- Separate vehicle for segregated coconut waste collection to Coco Peat plant.

B) Agency

- MBMC outsourced a coconut waste management agency, as the key implementer of this Coconut waste management & its processing initiative.
- MBMC ensures that the agency adheres to all relevant regulations and guidelines to ensure efficient Coconut waste collection, transportation and its processing.



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C) Hotels

- Hotels are responsible to segregate the hotel waste and follow the instructions given by MBMC.
- To depute a dedicated person to look after segregation of hotel waste.
- All hotels have to keep separate bins for storage of different types of waste, such as green color bin for organic (food waste) which can be sent to biogas, blue color bin for recyclables (plastic, paper, glass, etc.), and grey for non-recyclable waste.



4) Hotel Waste Management Methodology with Overview

a. Survey & Identification of Hotels in Mira Bhayandar:

- Detailed survey across all zones of Mira Bhayandar.
- Identified coconut waste sources: markets, vendors, households, wholesalers, and retailers.
- Gathered data on waste generation and current management practices

b. Route Mapping:

- Prepared route map to identify waste generation hotspots.
- Mapped transportation routes to coco peat plant.
- Ensures efficient collection and processing of coconut waste

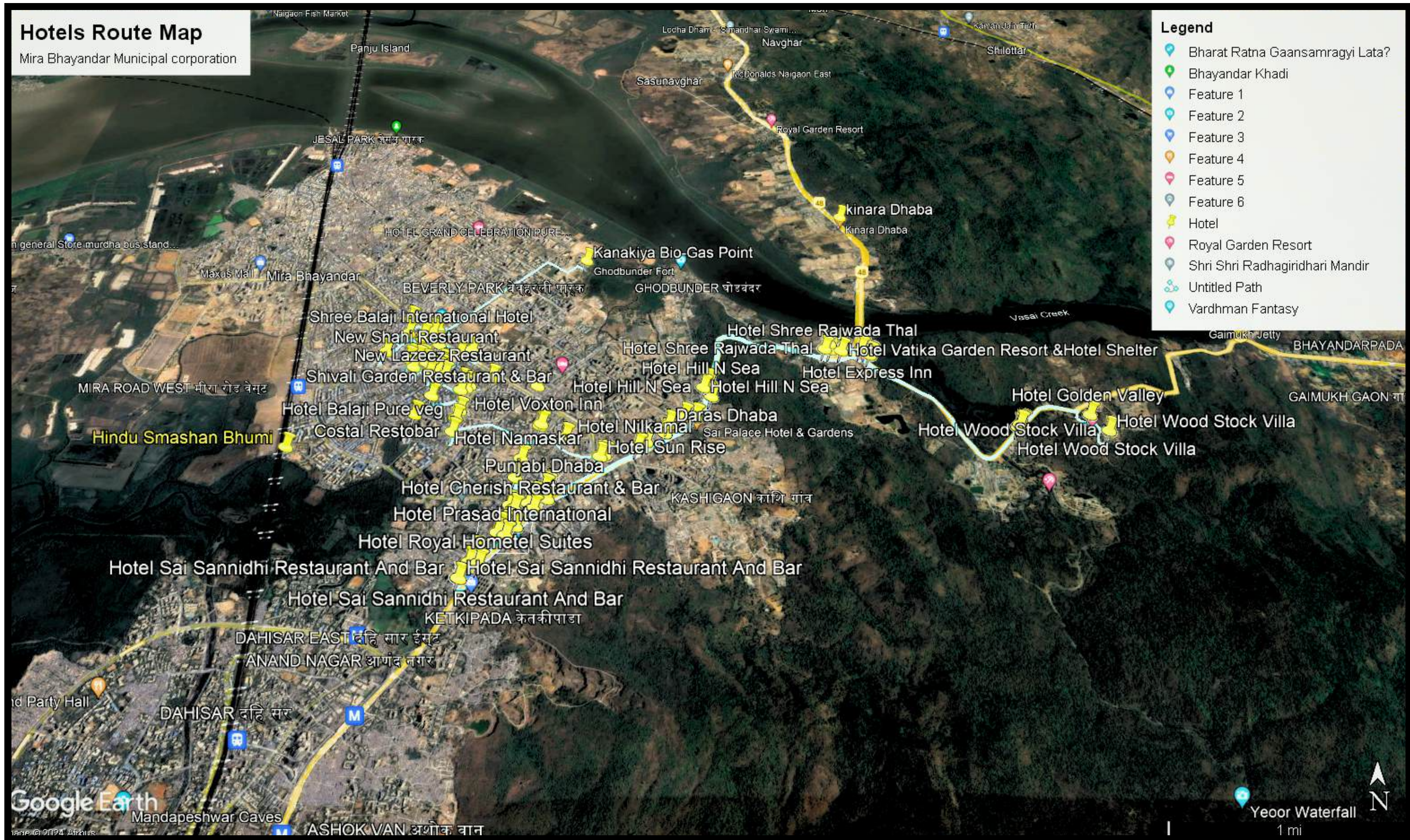


Fig. Google Earth Route maaping of hotels



c. Communication Plan

- A comprehensive communication plan is made which includes detailed information of hotel owners, hotel management staff, housekeeping staff, vehicle driver, helper, supervisor, SI along with their contact details and prepared official whatsapp group to check progress.
- Appointed an MBMC staff member for Information, Education and Communication for each hotel to assist with waste segregation.
- Designated a supervisor from innovation cell to monitor the entire waste collection process in Mira Bhayandar.

d. Awareness and Training:

- MBMC had conducted a meeting of all the hotel owners in MBMC office For Information, education and communication about source segregation of hotel waste that can be processed at biogas plant, about BWG Mandates and Solid waste management rule 2016.
- MBMC had conducted onsite training of solid waste handling workers and housekeeping staff of hotels by giving informational materials, and a demo about onsite segregation of waste.



Fig. Survey and identification of hotel owners, supervisor and their training session about onsite segregation of hotel waste that can be sent to biogas plant.



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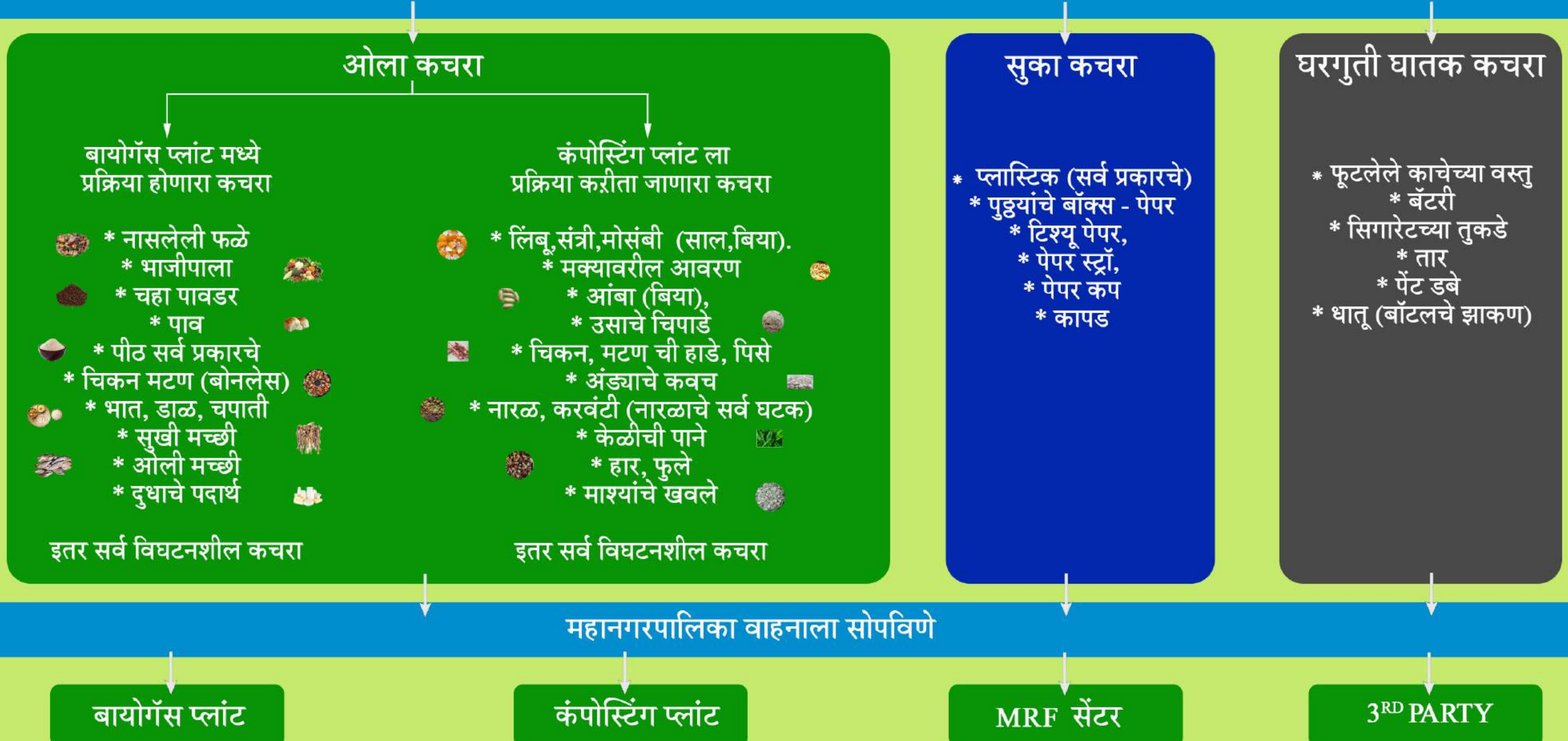


fig : On field Hotel Workers Training and fine segregation demo to hotel staff



Swachh MBMC Application Training for waste tracking and reporting.

हॉटेल, उपहारगृह, मंगल कार्यालय घनकचरा वर्गीकरण



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e. Management and Monitoring Mechanism:

- MBMC developed a dedicated SWM Team at the corporation level to look after the implementation and continuous improvement of this SOP among all other wards.
- MBMC set up a war room for IOT based centralised monitoring system to track waste collection, transportation, and processing activities upto processing facilities.
- MBMC launched “SWACHH MBMC APP” a QR based application for tracking of onsite source segregation of hotel waste and to track timely pickup of segregated hotel waste.

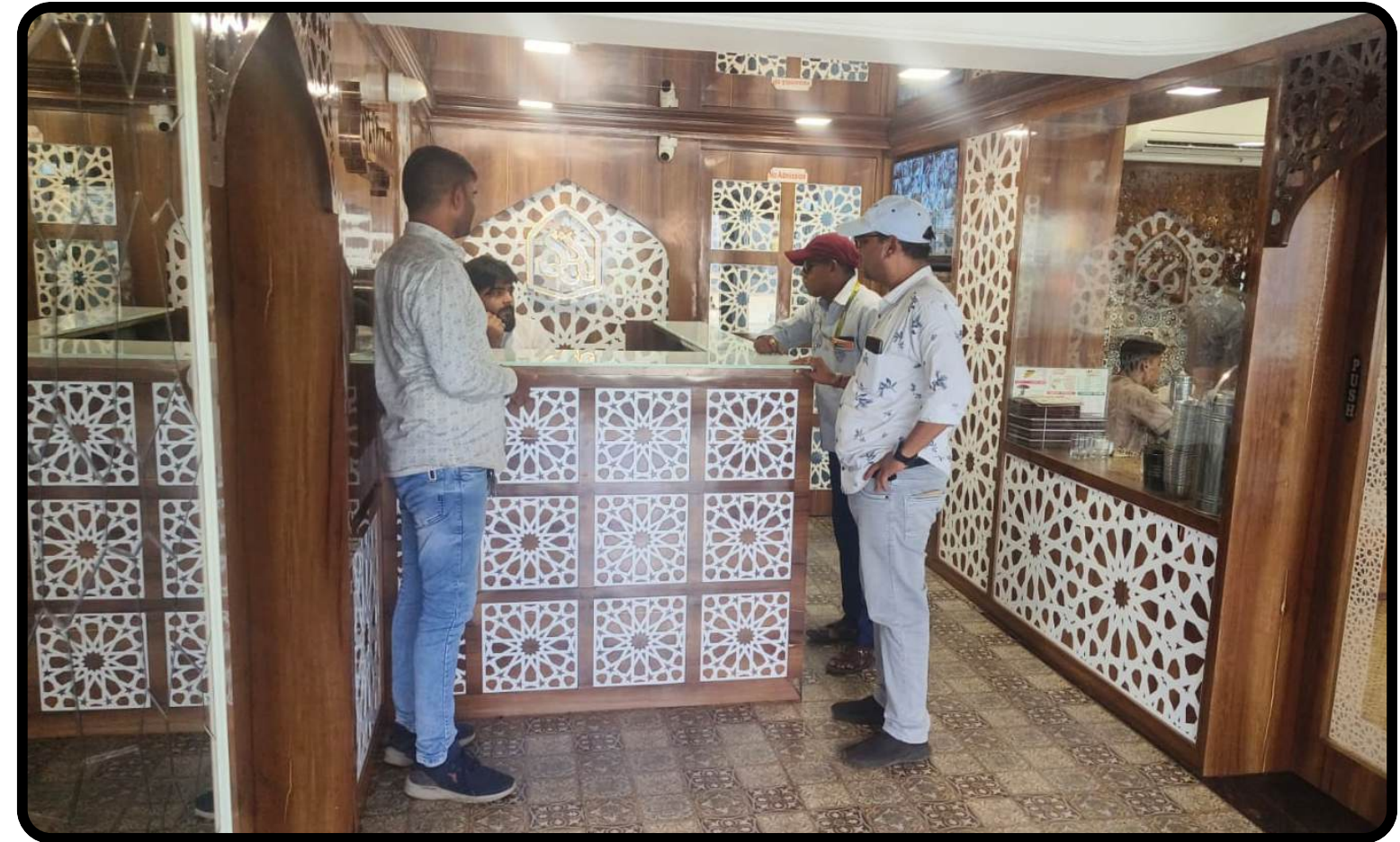


Fig. Field visit for biogas Plant Inspection

Field Inspection by SBM team





f. Reporting System & Grievance redressal :

- SWM Team:

- Developed a dedicated team for implementation and continuous improvement of the SOP for hotel waste and solid waste management.

- Centralized Monitoring:

- Established a war room for IoT-based tracking of waste collection and processing.

- SWACHH MBMC APP:

- Launched a QR-based app for tracking onsite waste segregation and timely pickups.

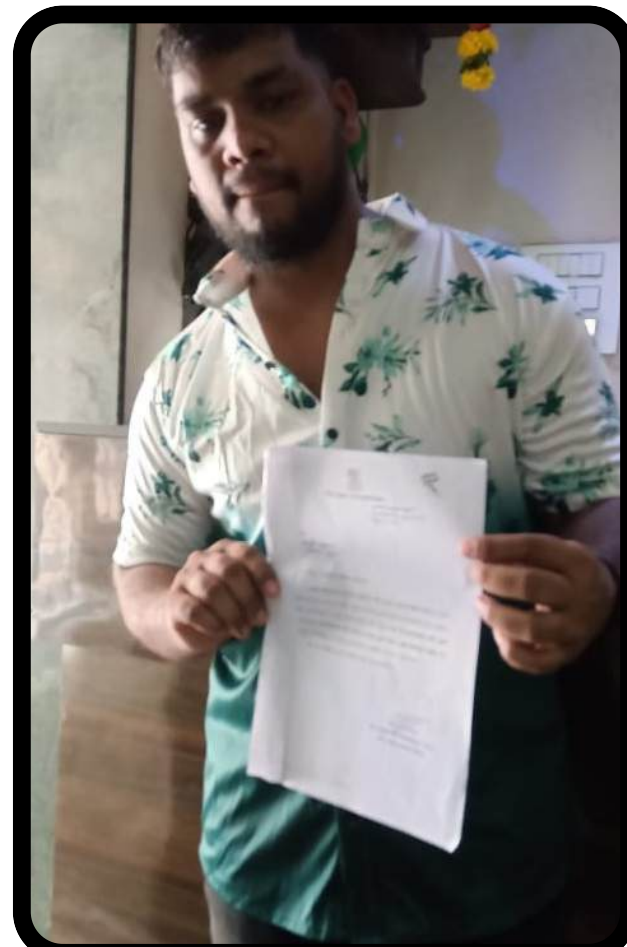
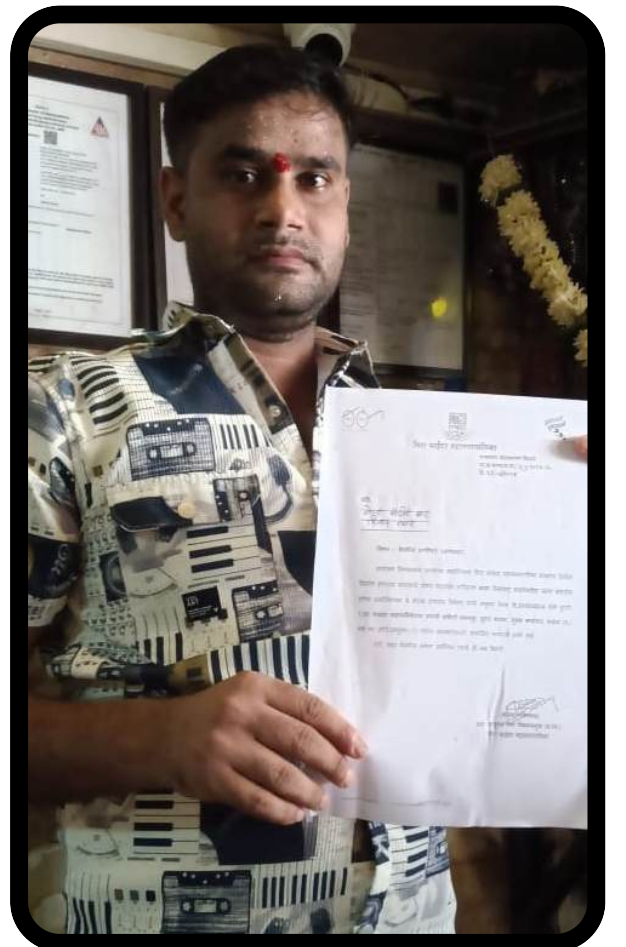
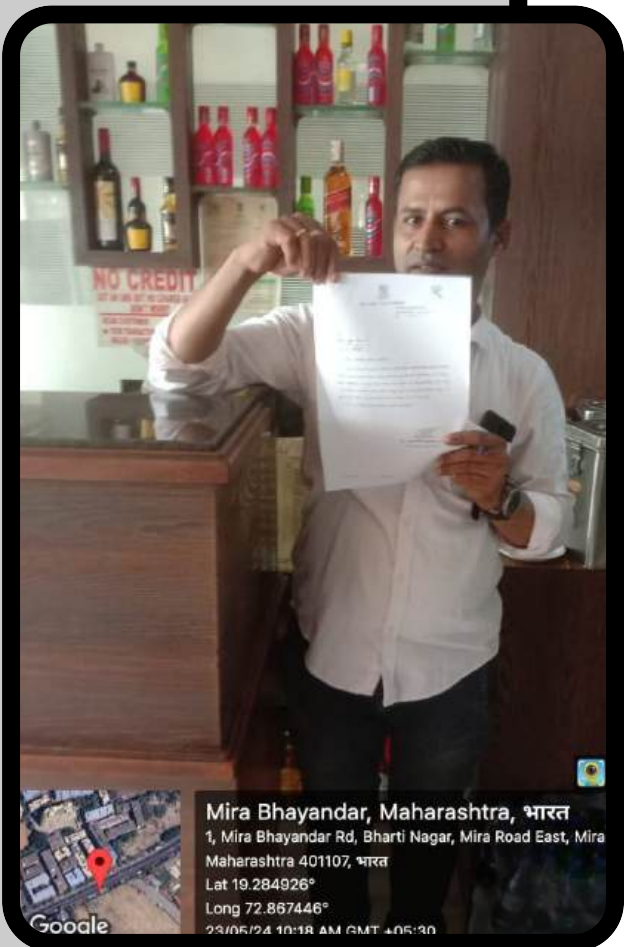
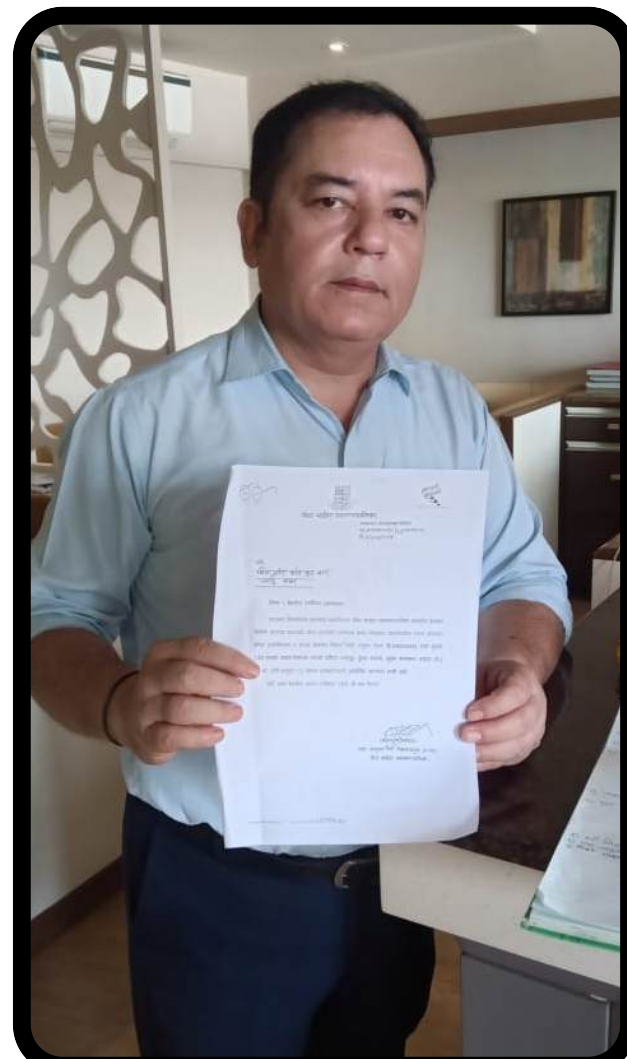
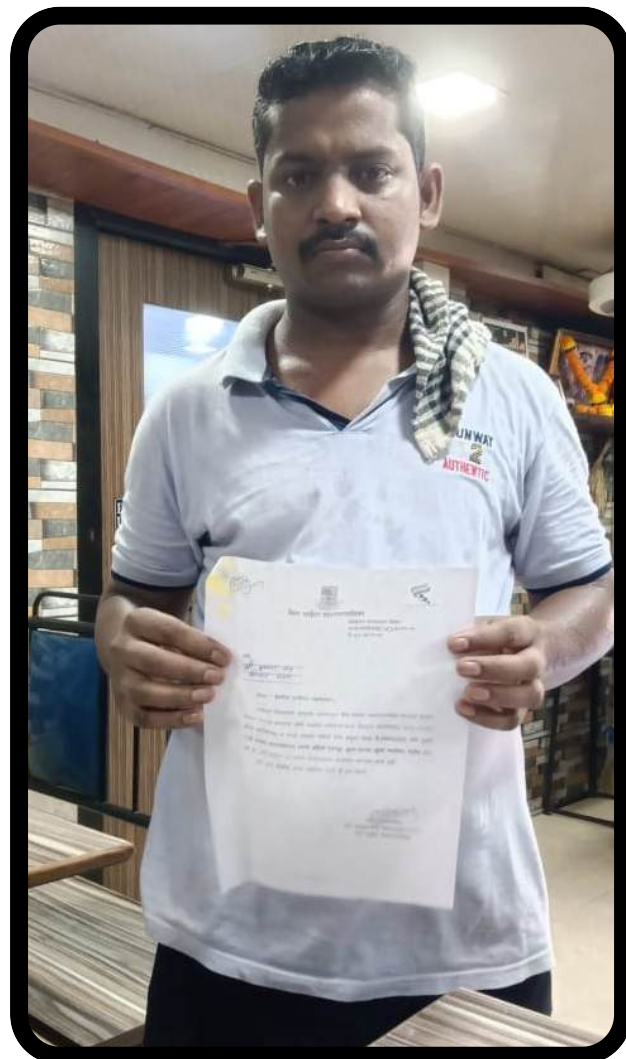
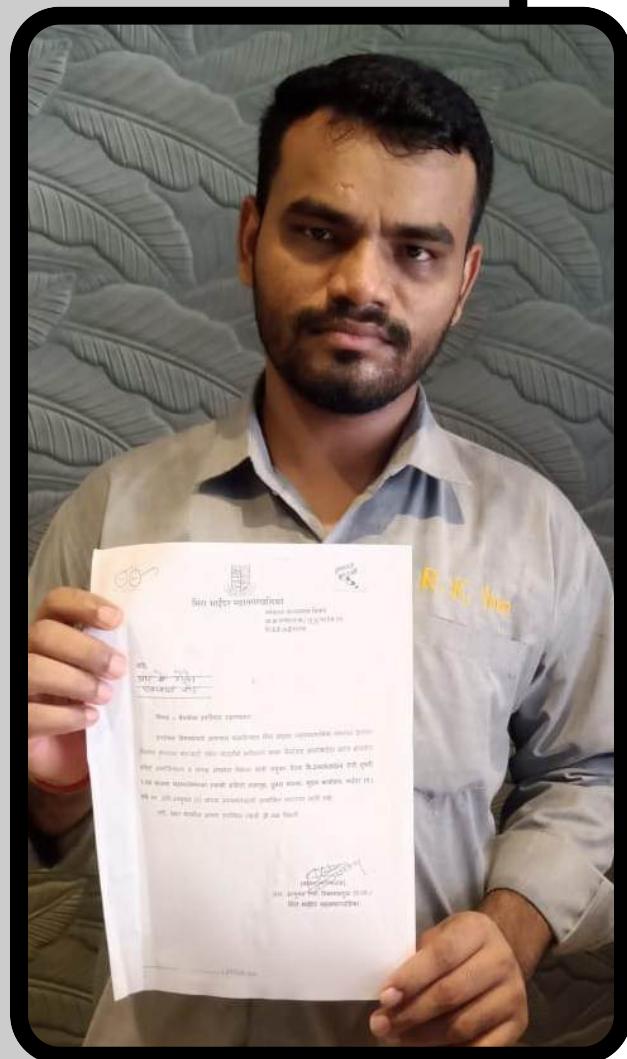
- Regular Audits:

- Conducted audits and evaluations to monitor project outcomes by obtaining daily MIS report from Swachh MBMC dashboard.

- Hotel Owners Feedback:

- Hotel owners will give their feedback through Swachh MBMC App & through the whatsapp group which MBMC have created.





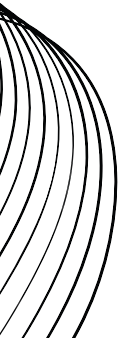
Notice to Hotel Owners

We invite hotel owners to participate in this initiative.



5. Result Achieved:

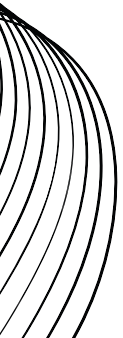
- In pilot project waste generated by the hotels was 10 TPD which was mixed waste
- After implementation of this pilot project 100% segregated waste is collected on site and it is sent to a decentralised biogas plant.
- Reduction in 10 TPD Mixed waste that can be sent to the dumping ground.
- Reduction in transportation cost waste sent to dumping due to proper channelization of segregated waste to decentralised processing plants.
- This system follows the SWM rule 2016 & Environmental Compliances and also reduces the bad odour of the surrounding.
- This model is replicated in the whole city.
- MBMC developed a Sustainable waste management system.
- Additionally, A decentralised biogas plant has been working properly to process the waste effectively and a functional waste-to-energy plant has been set up, generating valuable energy from the waste.





6. Conclusion:

- In conclusion, the implementation of effective hotel waste management practices in Mira Bhayandar has brought about significant positive changes.
- This sustainable approach has not only benefited the environment but has also showcased the commitment of the hotels in Mira Bhayandar to responsible waste management practices.
- This project highlights the importance of collaboration between hotels, local authorities, and waste management agencies to achieve sustainable waste management goals. The success story of this project serves as an inspiration for other hotels and cities to adopt similar waste management practices.



MONTHLY MIS DATA OF HOTEL WASTE CHANNELIZATION

MONTH :-July

DATE	NO. OF HOTELS COVERED	NO. OF SOCIETY WASTE COLLECTED VEHICLE	NO. OF HOTEL WASTE COLLECTED VEHICLE	TOTAL HOTEL WASTE COLLECTED (KG)	NAME OF BIOGAS PLANT	TOTAL WASTE SENT TO BIOGAS PLANT	TOTAL ENERGY GENERATED
7/1/2024	32	2	1	1525	Kanakia & Navghar	5310	435
7/2/2024	62	2	2	3735	Kanakia & Navghar	8335	485
7/3/2024	59	2	2	2505	Kanakia & Navghar	6480	445
7/4/2024	29	0	2	2915	Kanakia	2915	200
7/5/2024	59	1	2	3220	Kanakia & Navghar	5505	325
7/6/2024	59	2	2	3485	Kanakia & Navghar	7540	545
7/7/2024	40	2	1	2068	Kanakia & Navghar	6073	555
7/8/2024	30	2	1	1590	Kanakia & Navghar	5025	455
7/9/2024	79	2	2	3395	Kanakia & Navghar	7590	455
7/10/2024	60	2	2	3255	Kanakia & Navghar	7815	400
7/11/2024	76	0	2	4065	Kanakia	4065	200
7/12/2024	80	2	2	4560	Kanakia & Navghar	9615	400
7/13/2024	69	2	2	4870	Kanakia & Navghar	8820	400
7/14/2024	80	2	2	4500	Kanakia & Navghar	9080	400
7/15/2024	78	2	2	4305	Kanakia & Navghar	7970	400
7/16/2024	89	2	2	4565	Kanakia & Navghar	8655	400
7/17/2024	91	2	2	4090	Kanakia & Navghar	7980	400
7/18/2024	84	2	2	3865	Kanakia & Navghar	8140	400

मिरा भाईंदर महानगरपालिका

अ.क्र.	स्वच्छता निरीक्षक	वॉर्ड क्र	वाहनांचे No	एकूण फेरे	वाहनांची संख्या	ओला कचरा	बायोगॅस प्लांटचे नाव
1	श्री अरविंद चालके	१,७	MH 04 LQ 2244	1	1	930	Bhayandar(W)
2	श्री.नितीन खैरे / दीपक मोहिते	१३,१८	MH 04 LQ 2291	1	1	1270	Kanakiya
3	श्री.कांतीलाल बांगर	१४,१५,१६	MH 04 LQ 4233	1	1	2125	Kanakiya
4	श्री. अनिल राठोड	९,२०,२१,२२	MH 04 FU 4658	1	1	780	Navghar
5	श्रीकांत पराडकर	२,३	MH 04 LQ 3112	1	3	4575	Navghar
			MH 04 LQ 3120	1			Navghar
			MH 04 LQ 2246	1			Bhayandar (W)
			MH 04 LQ 2869				Bhayandar(W)
6	रमेश घरत	४,५	MH 04 LQ 9956	2	3	4405	Navghar
			MH 04 LQ 2874	1			Navghar
			MH 04 LQ 2867	1			Bhayandar(W)
7	रवींद्र पाटील	१०,११,१२	MH 04 LE 2768		3	5625	Navghar
			MH 04 LE 3272				Navghar
			MH 04 LQ 4226	1			Navghar
			MH 04 LQ 3262	1			Navghar
			MH 04 LQ 2249	1			Kanakiya
8	श्याम चौगुले	१७,१९	MH 04 LQ 9764				Kanakiya
9	श्रीकांत धीवर	६,८,२३,२४	MH 04 LQ 3007				Bhayandar(W)
	एकूण			14	13	19710	

THANK

YOU