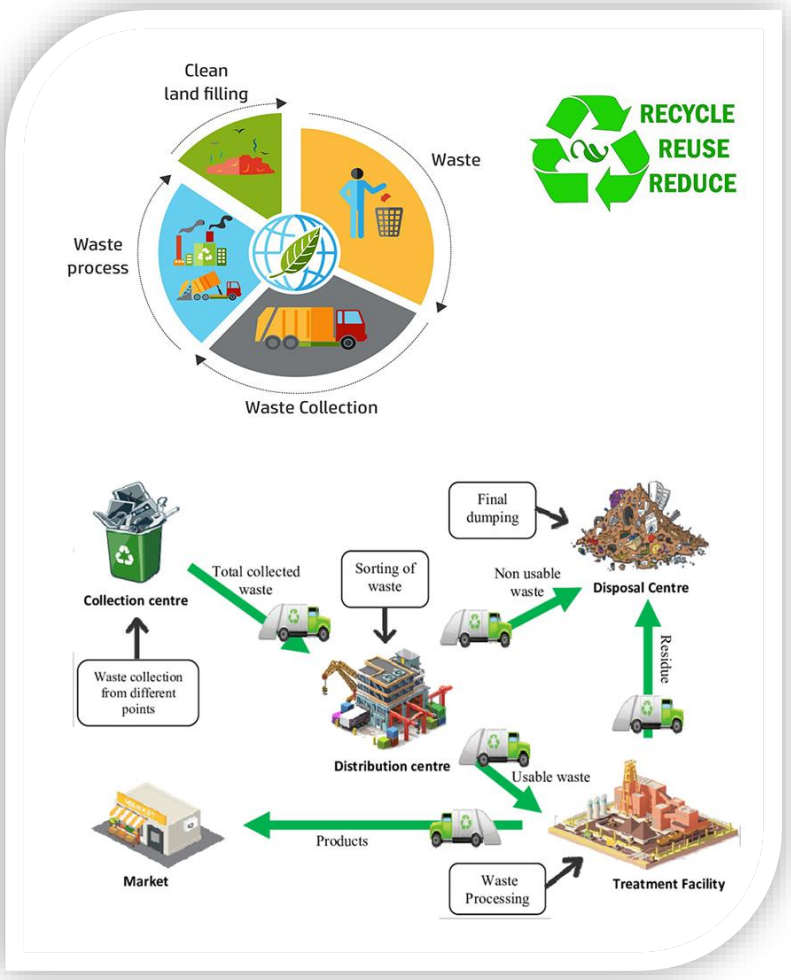
MUNICIPAL SOLID WASTE MANAGEMENT

AT

HASTINAPUR, UTTAR PRADESH- BEST PRACTICES



Central Pollution Control Board

New Delhi

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We would like to thank Dr. (Prof.) Vivek Kumar, Indian Institute of Technology, New Delhi for giving time to review this report technically for better presentation and understanding.

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1. INTRODUCTION

Human activities lead to generation of waste which, while collecting, handling and sorting, may pose risk to human health and environment. Most developing countries have acknowledged the immediate need of handling waste particularly Municipal Solid Waste (MSW). However, rapid urbanization, industrialization and population growth overpower the capacity of most municipal authorities to provide even the most basic services. Major issue is failure in collection of 100% MSW generated which consequences into dumping of uncollected waste in open and drains. This leads to gaseous emissions, flooding, breeding of insects, spreading many diseases and formation of leachates. Leachate contaminates the groundwater as well as surface water in the vicinity and gaseous emissions contribute to global warming. Moreover, even collected waste is often disposed of in un-controlled dump sites and/or burnt, polluting soil, water resources and air.

Municipal solid waste comprises of solid/semi-solid waste such as domestic & sanitary waste, catering & market waste, street sweepings, commercial & institutional waste, construction & demolition waste, silt removed/collection from surface drains and treated biomedical waste. It excludes industrial hazardous waste, untreated biomedical waste and e-waste.

The management of municipal solid waste (MSW) is going through a critical phase due to unavailability of suitable technical and management tools to handle solid waste generated in Class-I & II cities. Poor collection, segregation and inadequate transportation are primarily responsible for creating garbage heap of MSW at every corner. In addition to this, un-scientific disposal of waste also causes an adverse impact on environment and water bodies and eventually on public health as well.

As per the report available on solid waste in India Water Portal, an individual residing in Indian metro city produces an average of 0.8 Kg waste on daily basis (https://www.indiawaterportal.org/topics/solid-waste). The total MSW generated in urban India is estimated as 68.8 million tons per year whereas the average collection of MSW ranges only from 22% to 60%. As per the Municipal Solid Waste Management Rule, 2016 notified by MoEF&CC, it includes only commercial and residential waste generated in municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated bio-medical wastes.

MSW composition in India is approximately 40%-60% compostable,30%-50% inert, and 10%-30% recyclable (Sharma and Jain, 2019). According to the National Environmental Engineering Research Institute (NEERI), Indian waste consists of 0.64% ± 0.8% nitrogen, 0.67% ± 0.15% phosphorus, and 0.68% ± 0.15% potassium, and has a 26 ± 5 C:N ratio (Gupta *et al.* 2015; Joshi and Ahmed 2016).

2. RATIONALE

A review meeting was conducted with 21 Ganga Front Towns of Uttar Pradesh on 18th May, 2018 followed by 15th November, 2019 to assess the current status and develop a comprehensive action plan to standardize the solid waste management at Ganga front towns. Hastinapur Nagar Panchayat was projected as a Model Ganga town in terms of handling municipal solid waste in a sustainable manner. The city is working with focused approach towards achieving 100% door to door collection and more than 60% of waste segregation on daily basis. Map of 21 Ganga river front towns in Uttar Pradesh is depicted in **Fig 1**.

This assessment study intended to recognize the best practices and technical interventions initiated by Hastinapur Nagar Panchayat projected to be the Model Ganga Town among 21 towns in Uttar Pradesh.

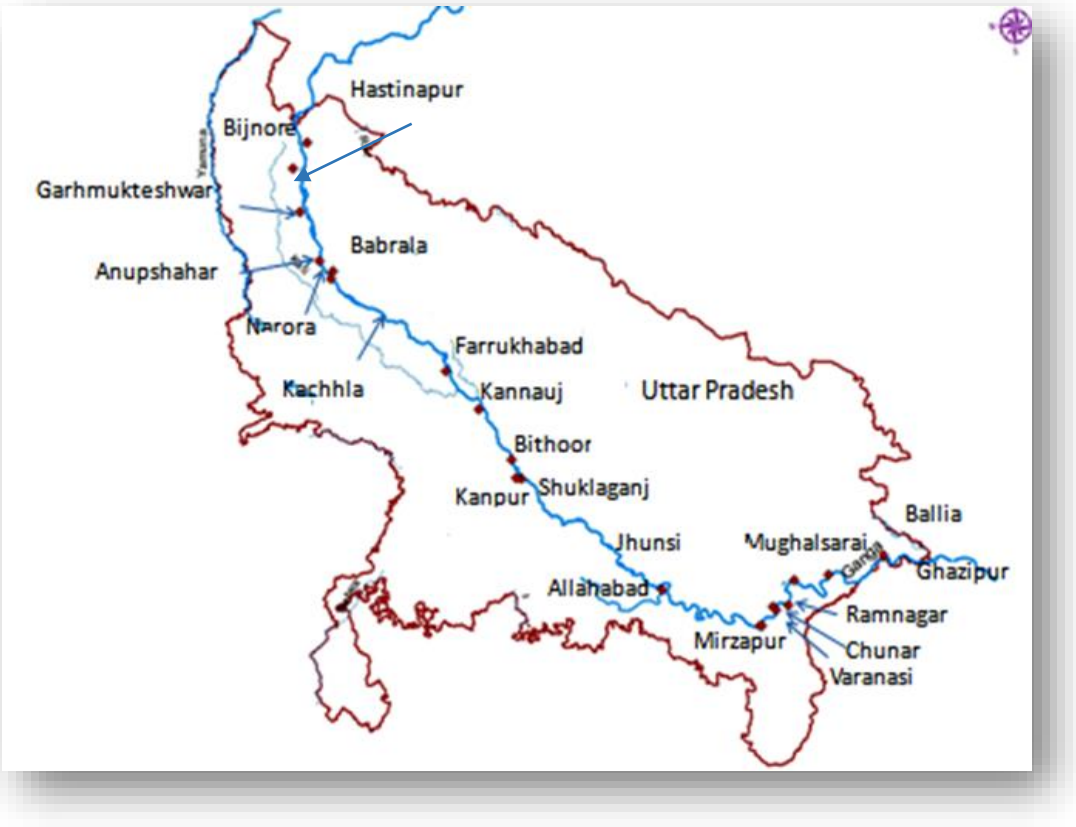

Figure 1: Map of 21 Ganga front Towns in U.P.

3. HASTINAPUR NAGAR PANCHAYAT (STUDY SITE)

Hastinapur is located on the right bank of an old bed of the Ganges and is portrayed as the capital of the Kuru Kingdom of Kauravas in Mahabharata. Many incidents in the Mahabharata were set in the city of Hastinapur.

The present-day Hastinapur is a town designed and re-established by former PM Pandit Jawaharlal Nehru along with Chandigarh, the UT and joint capital of Haryana and Punjab in the Doab region. Hastinapur is a Nagar Panchayat city in district of Meerut, Uttar Pradesh and city is divided into 15 wards. The city located approx. 37 Km from Meerut and 90 Km north-east of Delhi on National Highway 119 (29.17°N, 78.02°E) having an average elevation of 218 meters.

Hastinapur experiences extremes of climate, just like other cities in Uttar Pradesh. The summer season lasts from March to May, during which the temperature ranges between 32-40°C. The monsoon season continues from July to September, during which the temperature is relatively low. The winter season lasts from December to February, with December being the coldest month of the year. During this time, the temperature can drop to around 5°C and usually doesn't go beyond 14°C.

According to the 2011 Census of India, Hastinapur had a population of 26,452. The literacy rate of the town is 73.9% against the national average of 59.5%. Map of Hastinapur Nagar Panchayat is depicted in **Fig 2**. Ward map of Hastinapur Nagar Panchayat is depicted in **Fig 3**.

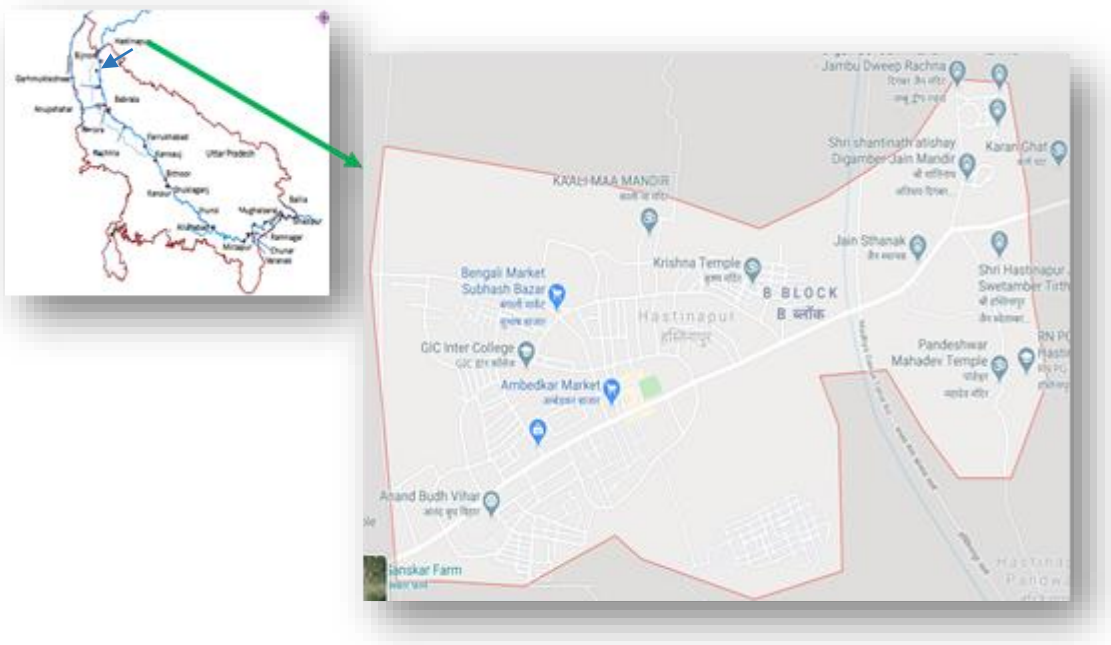

Figure 2: Map of Hastinapur Nagar Panchayat

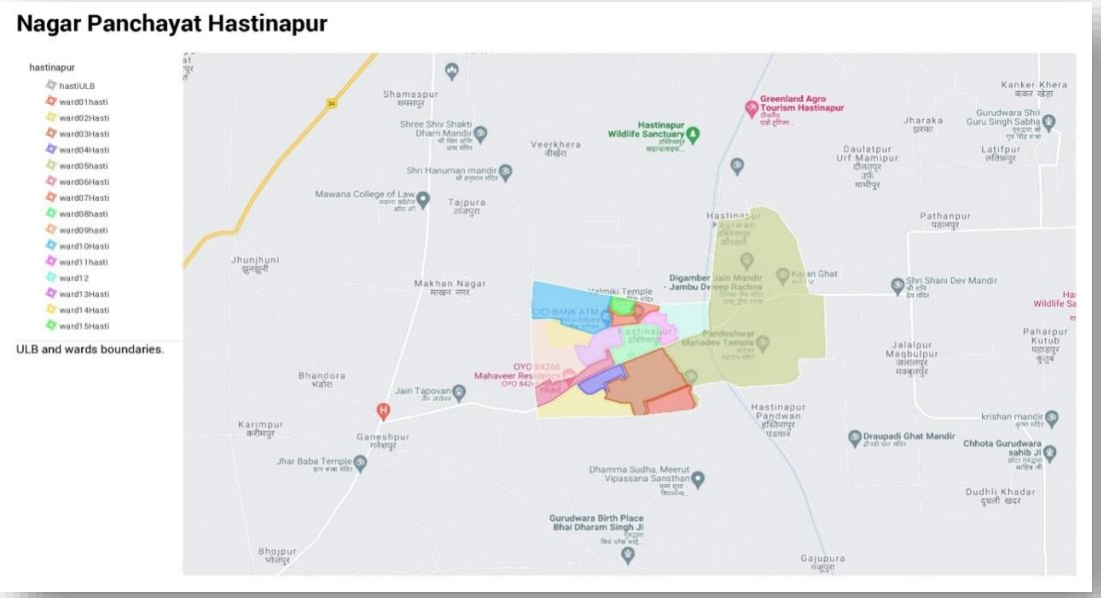

Figure 3: Hastinapur ward map

4. ASSESSMENT OF MUNICIPAL SOLID WASTE MANAGEMENT AT HASTINAPUR

Inspection team from CPCB, New Delhi visited Hastinapur city on 14th February 2020 to assess and record the technical feasibility and financial viability of ongoing intervention at proposed model town (**Fig 4**). Visit report on waste generated as per information available with EO, NPH and City sanitation plan of Hastinapur is depicted in **Annexure-1**.

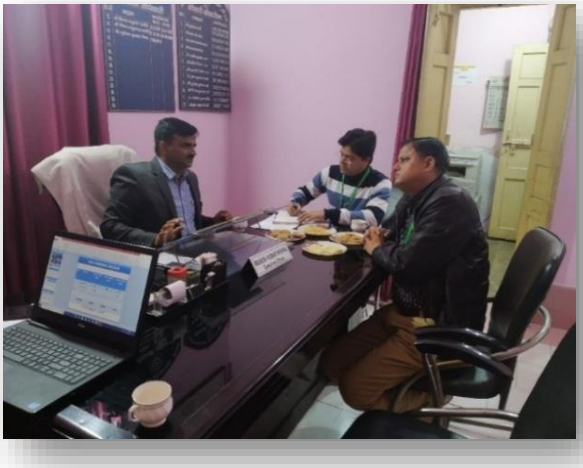

Figure 4: CPCB officials interacting with EO, Hastinapur

The Nagar Panchayat- Hastinapur (NPH) is responsible for the civic administration of the city, which also includes the management of the Solid Waste generated on daily basis. The various sources

of MSW generation include domestic households, commercial establishment, hotels, hospitals etc. As information provided by NPH, about 9.26 TPD was generated during 2019. The detail of the same is depicted in **Fig 5**, where it can be seen that municipal solid waste contributes around 82% of the total solid waste generated at Hastinapur during 2019.

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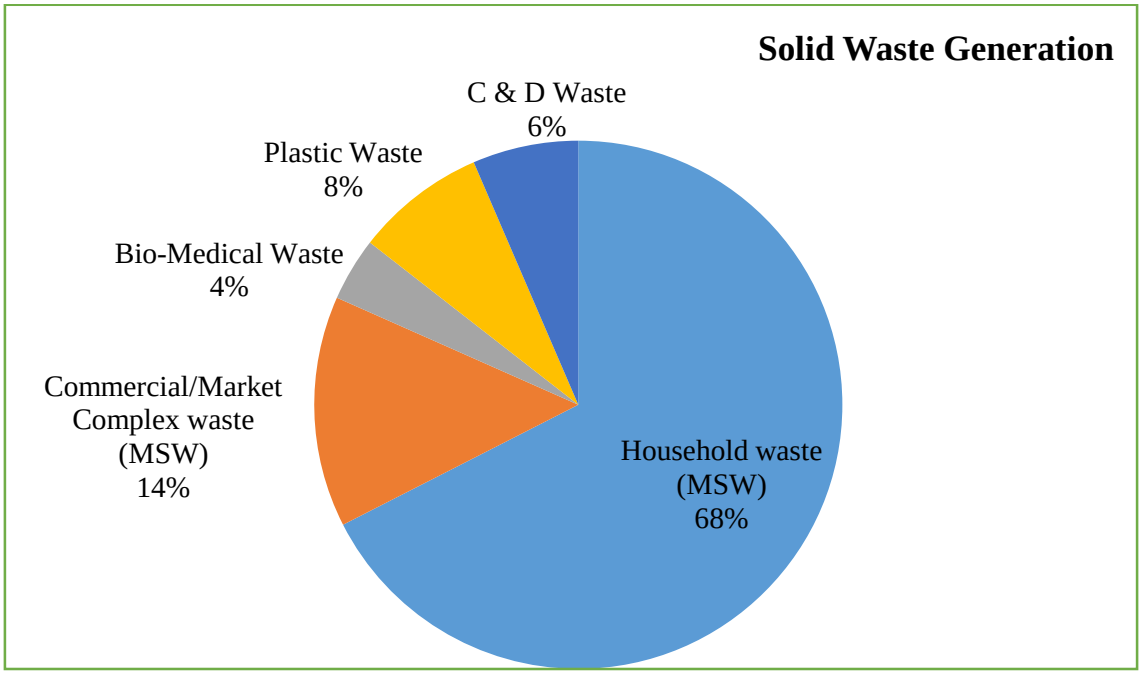

Figure 5: Solid waste generation at Hastinapur (Nagar Panchayat, Hastinapur, Dec 2019) (100%=9.26 TPD)

4.1 Types of wastes and their management criteria

Various types of waste and its best management practices at Hastinapur is as following:

4.1.1 Municipal Solid Waste

- 100 % door to door collection from household, market complex, commercial hubs etc.
- More than 60% of waste segregated and recycled
- 100% organic waste converted into compost and supply to local farmers and revenue generated

4.1.2 Agriculture and Animal Husbandry Waste

- Agriculture waste and Animal waste managed at field itself by farmers to produce compost and reuse

4.1.3 Sewage

- Septage managed at household (Septic tank and Soak pit)
- Two Sewer Suction Machine for collection and disposal of Septage
- Septage disposed of at nearest forest and dumped into agriculture land

4.1.4 Plastic Waste

- Followed On-Source-Segregation
- Penalty levied on defaulter commercial entities
- Weekly inspection to market and Haat by Nagar Panchayat (NP) officials
- Penalty on ploy-ethylene seller
- Mass awareness programme to avoid single-use-plastic

4.1.5 Bio-Medical Waste

- Government and Private Hospitals self-managed
- Frequent audit by Nagar Panchayat
- Household Bio-Medical Waste collected by NP and handover to Bio-medical waste management vendor

4.1.6 C&D Waste

- Designated C&D dumping ground provided by Nagar Panchayat
- Penalty levied on the defaulter
- Reuse in Government construction

4.2 Solid waste generation, collection & transport

The solid waste is collected from different sources in different methods. The waste from the households and commercials establishments are covered under door to door collection of waste with the help of manual tricycles, E-Rickshaw and Tractor. NPH has issued two color coded bins to all households and individual shopkeepers at market complex to encourage 100% collection and segregation of waste at source. Market and chicken & mutton waste are being collected separately by two numbers of Auto tippers. In order to facilitate collection of MSW from the bulk generators like marriage & function halls, hotels, restaurants & lodgings, two numbers of tractors placed at commercial areas and bulk waste generation points. Solid waste collection & transport at NP Hastinapur is depicted in **Fig 6**. The MSW stored in the dumper

bins is transferred to the compost facility and SLRM (Solid Liquid Resource management) center located inside the Nagar Panchayat office campus.

Figure 6: MSW collection and Transportation

Street sweepings and drain cleanings are the other major aspects for the Nagar Panchayat to handle the MSW generated. Both the activities are carried out twice a day by trained man power with the help of mechanical equipment. To ensure the activities performed on daily basis, photos and videos shared through WhatsApp group managed by Nagar Panchayat officials. Also frequent inspection conducted by supervisors and Executive officers to confirm the operating procedure followed by workers. The street sweepings and the silt collected from the road side drains are temporarily stored is small heaps on the road sides and are collected in the bins, transferred via tractor for treatment and disposal. Twelve numbers of permanent staff and 58 contractual staff are engaged by Nagar Panchayat Hastinapur for collection, transportation, street sweeping, segregation and composting activities. During visit, it was found that, more than of 40% of the staff are female and earned Rs. 9000/- (Rupees Nine

thousand only) per month from Nagar Panchayat from the revenue generated by selling the recyclable material to recycler. The highest revenue generates from plastic, human hair waste, egg cartons and waste blister packs.

4.3 Segregation

The solid waste collected from the households and commercial establishments are stored temporarily in the dust bins and then transported to the SLRM center. The waste collected from the roads and bins is directly transported to the old dumping ground. The tractors and rickshaws carrying waste are properly covered to avoid splitting on the road with the loud speaker system. It announces and give a call to community when travel around the ward. The driver is himself involved in the segregation during collection of waste from individual household. Vehicles that are used for Solid Waste Management are monitored through GPS system. Once it reaches SLRM center, the wet waste send to compost yard and dry/recycle waste to segregation center. ***There are more than 50 items getting segregated per day at SLRM center which is really a significant achievement by Nagar Panchayat Hastinapur.*** The Self Help Group involved in the segregation activities from 9:00 AM to 5:00 PM except Sunday.

The log book for all the activities are well maintained with the input and output details on date wise to track the work. An expert on MSW with sound knowledge on the sector and a women supervisor has been deployed for these activities. Segregation activities performed at SLRM center is depicted in **Fig 7**.

4.4 Resource recovery and reuse

Earlier to year 2015, the municipal solid wastes generated within the city area was dumped in an ad-hoc manner at several locations within Hastinapur. Taking into consideration the quantity and composition of municipal solid waste generated a Material Recovery Facility (MRF) center developed under Swacch Bharat Mission.

Subsequently, NPH started operating the facility by deploying its own staff and resources. ***At present, NPH receives revenue amount of approximately Rs. 40,000/- (Rupees Forty thousand only) per month by selling compost, liquid fertilizer and recyclable items.***

Figure 7: SLRM center at NP Hastinapur

4.5 Compost Plant

Around 9 to 10 tons of solid waste generated per day in the city is collected and brought to SLRM center. Out of this approximately 2.5 ton of wastes are organic in nature and treated at compost plant. After unloading, the waste is segregated manually and moved to stack yard and is stacked in the form of trapezoidal heaps called windrows. These windrows are periodically turned and shifted once in a week using JCBs to enable aerobic decomposition of waste. The fresh stacks of material are sprayed with inoculum *via* sprayer which enhances composting process and reduces odor.

Once the material is stabilized, it is fed to the sieving section using a Skid Steer Loader for screening. Two stage screening process being followed to achieve maximum screening efficiency and fine compost particle. The first screen is of 10 mm Screen, where the stabilized waste is fed and the output from this screen is transferred to the next screen (3 mm) and the reject are carried by a separate drum, collected and stored. To reduce the moisture content, it was dried under sunlight. To prevent pollution of ground water during composting or during rainfall, the compost pad is lined and a peripheral drain is provided to collect any leachate generated.

The material coming out of the 3 mm screen is uniform in texture and contains pure organic compost. ***The organic manure is then sold to local farmers with selling price of Rs. 5/- per kg. The liquid fertilizer which is developed from fish waste also sell at market price of Rs. 60/- per liter with properly sealed and leveled.*** Compost plant at SLRM center NPH is depicted in **Fig 8.**

Figure 8: Compost Plant at SLRM Centre NP Hastinapur

4.6 Disposal of municipal solid waste

About 40% of the un-segregated waste is being disposed of at old dumping site located at outskirt of the Nagar Panchayat. The old dumping site is partially abandoned as stated by Nagar Panchayat officials and development of a Scientific Sanitary landfill site at the same location is under consideration. Dumping site at NPH is depicted in **Fig. 9.**

Figure 9: Old Dumping site for MSW at NP Hastinapur

Figure 10: Nala Screening and cleaning at NP Hastinapur

4.7 Nala screening

The local nala (storm cum grey water drain) carrying waste water from households and market complex is screened throughout the city. The solid deposit is cleaned twice a day by sanitary worker and recorded in the log book. Nala screening and cleaning activity is depicted in **Fig 10.**

5. SIGNIFICANT ACHIEVEMENTS (STRENGTH)

- Mass public awareness created through nukkad natak, awareness campaign, school programme, kid's competition, wall murals, posters, banners etc.
- Community driven and participatory approach
- Technical and scientific intervention by expert team
- Dedicated and trained man power deployed for specific work
- Focused 100 % door to door collection by community and administration
- Distribution of collection bin to all households and market establishments
- Revenue generation model from waste for self-sustainability
- Maximum utilization of resources for segregation and composting
- Filed work monitoring and redressal of public grievances through Swacch MoHUA application
- Healthy coordination and communication between public and administration

6. CHALLENGES

- Budget allocation from Namami Gange fund
- Floating population due to tourism sector (Jambu Dweep Jain temple and Old Hindu temples)
- Identification of proper landfill site
- Area not allocated to store/dump storm water collected or generated during monsoon

7. CITY PERFORMANCE AND RECOGNITION

Swachh Survekshan, conducted by MoHUA since 2016, is the world's largest urban sanitation and cleanliness survey. It has been instrumental in fostering a spirit of healthy competition among towns and cities to improve their service delivery to citizens and towards creating cleaner cities and give added impetus to cities to accelerate their journey towards a garbage-free status. The Swachh Survekshan framework is redesigned innovatively every year, to ensure that the process becomes more robust.

The cities would be evaluated on the basis of the star rating achieved by them as per the protocol released by MoHUA. The Star Rating protocol is based on 12 parameters and follows a SMART framework - Single metric, Measurable, Achievable, Rigorous verification mechanism and Targeted towards outcomes - and has been devised in a holistic manner including components such as cleanliness of drains & water bodies, plastic waste management, managing construction & demolition waste etc. which are critical drivers for achieving garbage free cities.

Citizens may contribute to their city's Swachhata scores by segregating their waste at source, adopting home composting and coming up with innovative solutions for waste management and creating short videos and jingles to support their respective Urban Local Bodies in Swachh Survekshan 2019. The Hastinapur city performed well and therefore has been awarded 11th rank among the best cities in North Zone in Swachh Survekshan 2019 (**Fig 11&12**).

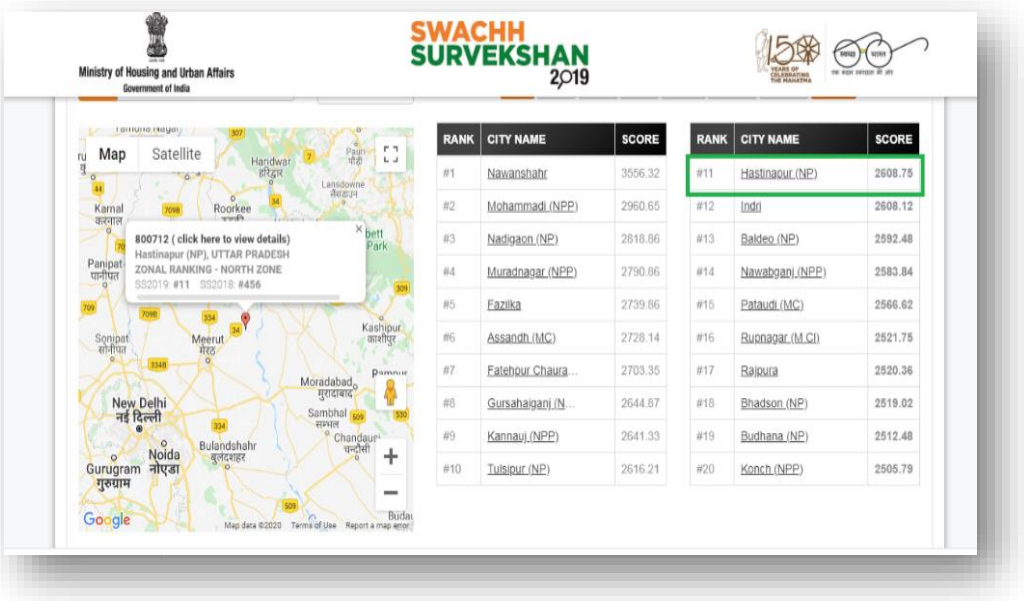

Figure 11: Swacch Survekshan 2019 rank of Hastinapur

The Direct Observation for the city captures the ground level cleanliness and maintenance of public facilities including toilets in the city by the local administration among others. The city has received a score of 2608.75 **(Fig 11)** and the majority of locations surveyed by an independent assessor were found to be according to the standards prescribed. Around 96% of the residential areas and commercial areas were found to be substantially clean. About 94% of the community and public toilets surveyed during Swacch Survekshan 2019 were found to be well lit, well ventilated, had electricity connection and had water supply/ flush. 100% of

septage was found to have on-site safe (OSS) disposal system, i.e. either having septic tank with no overflow or sewer network with no open drainage.

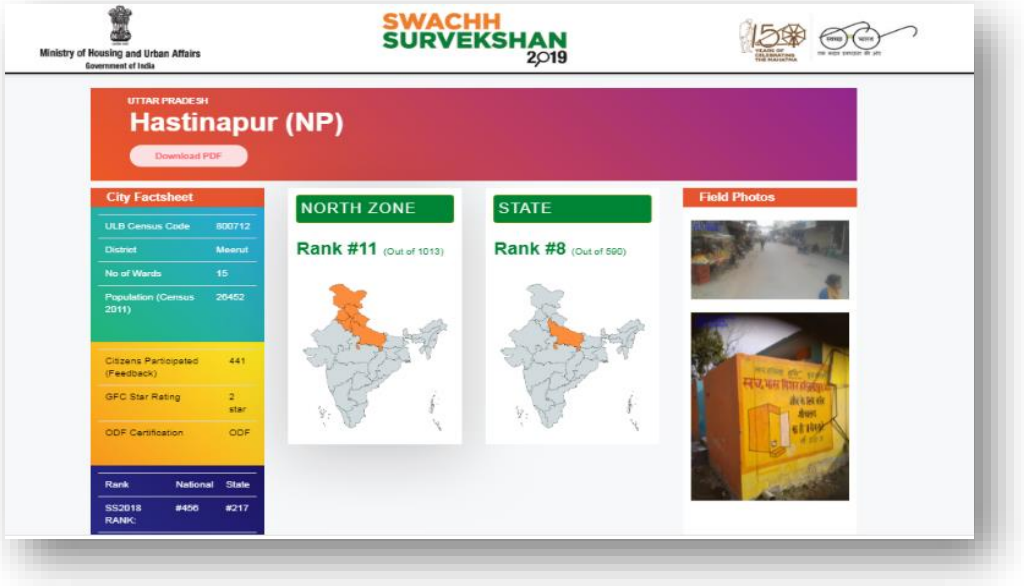

Figure 12: North Zone Rank: 11 and State Rank: 8 (Source: Swachh Survekshan 2019, Ministry of Housing and Urban Affair)

8. WAY FORWARD

Solid Waste Management (SWM) is a state subject and it is the responsibility of the state government to ensure that appropriate solid waste management practices to being place in all the cities and towns. However, **SWM is a municipal function and it is the urban local bodies (ULB) that are directly responsible for it**. The ULBs are required to plan, design, operate, and maintain the SWM in their respective cities/towns. About 10% to 50% of the municipal budget is allocated for SWM and 30% to 50% of the total staff is typically engaged in SWM. Incorrect choice of technology, lack of public participation, financial constraints, institutional weakness, are factors that prevent a ULB from providing satisfactory service. The ULBs need both support and guide to manage the solid waste in a scientific and cost effective manner.

The role of the CPCB is broadly to ensure the MSW Rules, 2016 and the guidelines developed under Namami Gange project shall be adhere by the Ganga front towns to maintain the water quality of River Ganga. It also assists the state governments and local bodies in mobilizing assistance for implementation of solid waste management practices. Under this, the Hastinapur town of U.P. has taken initiatives and well performed by involving and engage the community towards cleanliness and run the programme in community driven mode.

Annexure-1: (Inspection report)

General information provided by Nagar Panchayat, Hastinapur during visit of CPCB officials is as below:

S. No.	Type of waste	Solid Waste generation (in TPD)
1	Municipal Solid Waste Household: Commercial/Market Complex:	 6.25 1.31
5	Bio-Medical Waste	0.36
6	Plastic Waste	0.74
7	C & D Waste	0.6
Total		9.26

Source: Nagar Panchayat, Hastinapur, Dec 2019

Other data:

Sl. No.	Description		Status
1	Population (Census 2011)	**:**	26,452
2	Present population of the city	**:**	30,336
3	No. of Wards	:	15
4	Agency/Agencies responsible for handling MSW	:	Nagar Panchayat
5	Contact Person	:	Mr. Mukesh Mishra, EO, Hastinapur NP Mob: 7906873906 Mr. Sourav, MSW Expert Mob: 9565780581
6	Generation of MSW per day (in Tonnes/day)	:	9.26
7	Per Capita Waste Generation (gms)	:	250
8	No. of employees engaged for collection & transportation of waste	:	Permanent staff: 12 Temporary staff: 58
9	Whether reported MSW generation is based on actual survey/or it is based on estimation	:	Field and desk based
10	The year of reporting for generation of MSW	:	2019-20
11	Percentage of door to door collection	:	100%
12	Segregation of Waste at the source is practiced (Yes/No)	:	Yes (60%)
13	Numbers and Type of vehicles used for collection and Transportation of waste	:	Manual Tricycle: 33 TATA ACE: 02 E-Rickshaw: 05 Tractor: 04 JCB: 01
14	Quantity of waste remaining uncollected (from collection points/ dustbins) (in Tonnes/day)	:	Nil
15	Quantity (Approximately) of waste littered at different places (other than dustbins) (in Tonnes/day)	:	Nil
16	Annual expenditure on O& M	:	Not provided

17	Quantity of waste processed (in Tonnes/day)	:	Composting: 2.072 TPD
18	Quantity of waste landfilled per day (in Tonnes/day) Number of landfills in operation and the area Whether operational landfill are complying with MSW Rules	:	- 1 old waste dumping site No
19	Funding agencies	:	SBM (Urban) Namami Gange Local Administrative fund
20	Implementing Agency	:	Nagar Panchayat
21	Log books maintained (Y/N)	:	Yes
22	No. of labors working in Landfill site	:	2 nos. at old waste dumping site
23	Any particular recurring diseases noticed in & around the site (if any)	:	No
24	Whether any action plan has been prepared for management of MSW	:	Yes
25	If yes, Summary (if available detailed report may be attached)	:	Summary attached as **Annexure-A**
26	Date of Inspection	:	14th Feb 2020
27	**Observations & recommendations of Inspecting Team** Key observations are as follows; • During inspection the SLRM-MRF centre and compost plant was found operational and observed large quantity of waste segregated & stored. • The segregation of waste was done manually and the housekeeping in the plant was found very well maintained. • The fresh MSW received is being treated on daily basis without storing for long time to prevent the obnoxious odour. • During inspection, the non-biodegradable waste was found segregated by the trained women group and supervised by team leader. • The old dumping site was found partially abandoned and minimal amount of waste was dumped. • During inspection it was found that, the innovative leachate collection system at compost plant was developed scientifically according to the MSW rule. • The waste that was accumulated at dumping ground from log time also segregated and send back to the MRF centre for recycling. • The storm water drainage system was under consideration by NP Hastinapur to reduce water wastage and ground water pollution due to mixing of leachate and storm water. **Recommendations/Opportunities:** The Nagar Panchayat Hastinapur may be directed to implement the following and to inform the status of compliance to CPCB; • To Comply and gets certified with MSW Rules, 2016 with respect to Segregation, Collection, transportation and disposal of waste.		

	• To take necessary and time bound action to achieve 100% from 60% in segregating the waste into biodegradable, recyclable, etc. at the source to reduce the load in compost and dumping site. • To dispose the non-biodegradable and non-recyclable waste and the rejects dumped in the waste treatment plant or landfill site. • To completely move accumulated waste at old dumping site to sanitary landfill area at the earliest. • To take necessary action in developing a waste to energy plant and sanitary landfill site. • To provide the storm water drains collection area for the town before monsoon season as per the MSW Rules to avoid ground water contamination. • Follow the waste hierarchy of five steps: reducing waste at the source, reuse of materials, recycling, energy recovery, and land filling.

Inspection Team

Sl. No	**Name**	**Designation**	**Organization**	**Signature**
1. 2.	Dr. Pankaj Kumar Sh. Pradeep Mishra	Sc. 'D' RA-III	CPCB, New Delhi	

Source: Information collected from NP, Hastinapur during visit

Field photographs during visit:


Interaction with sanitary workers at SLRM center


Segregation of recyclable material and storage facility

Composting work is in progress

Annexure-A: Summary note

Solid waste management at Hastinapur Nagar Panchayat, Uttar Pradesh- Best Practices

A review meeting was conducted by CPCB on Solid waste management at Ganga front towns of Uttar Pradesh. Officials from Urban development dept., UPPCB, SPMG and ULBs of Ganga front towns participated and briefed on the progress. Questionnaire survey reports and future action plan submitted by individual ULBs. There are 21 Ganga front towns with 697 wards. Approx. 3275 MT per day of solid waste generated. Achieved 100 % **door to door Collection** and 26% **at source segregation.**

Hastinapur Nagar Panchayat showcased as a model "***No Garbage City***" among Ganga towns in Uttar Pradesh. Total population of 26,000 with 7,351 households as per 2011 census. The Material Recover Facility Centre (Solid & Liquid Resource Management) and compost plant functioning and significant quantity of waste segregated & stored in designated containers. The segregation of waste was done manually and the housekeeping in the plant was found very well maintained. The fresh MSW received is being treated on daily basis. The non-biodegradable waste segregated by trained women group and supervised by team leader. The old dumping site (legacy waste) was found partially abandoned and minimal amount of waste was dumped. The innovative leachate collection system at compost plant (30 ton capacity) developed scientifically according to the MSW rule. The dumping yard waste also segregated regularly and sends back to the MRF centre for recycling. The storm water drainage system was under consideration by NP Hastinapur to reduce water wastage and ground water pollution due to mixing of leachate with storm water. Mass public awareness created through Nukkad Natak, Awareness campaign, School awareness programme, Kids competition, Wall murals, posters and banners. Recurring revenue generation model by selling organic manure and bio-pesticides prepared at waste to compost plant creates self-sustainability. More than 14,000 dustbin distributed by Nagar Panchayat to all households and market establishments. Filed work monitoring and public grievance redressal through ***Swacch MoHUA*** App. Healthy coordination and communication between public and administration. Community driven and participatory approach and technical intervention by expert team was the key to develop the city as a successful model for effective solid waste management at source.

City Sanitation Plan- Hastinapur

Ministry of Housing and Urban Affairs

Government of India

Swachh Bharat Mission

City Sanitation Plan

Dated : 11/02/2020

State : Uttar Pradesh District : Meerut ULBName : Hastinapur (NP)

Existing Situation Analysis

Statutory Town(Y/N)	Y	Total No. of Wards	15
Area of the City (Sq. Km)	7.570	No. of HouseHolds 2011 Census	26452
No. of Slums	0	Current City Population	30421
No. of wards with 100% D2D Collection	15	No. of wards with 100% Source Segregation	0
Waste Generated (Other than C&D) (in TPD)	10.250	C&D Waste Generated (in TPD)	0.930
Total Solid Waste Generated (in TPD)	11.180	Waste Transported (Other than C&D) (in TPD)	10.200
C&D Waste Transported (in TPD)	0.920	Total Waste Transported (in TPD)	11.120
Waste Treated (Other than C&D) (in TPD)	10.250	C&D Waste Treated (in TPD)	0.930
Total Waste Treated (in TPD)	11.180	Dry Waste Generated (in TPD)	3.440
Dry Waste Segregated (in TPD)	3.440	Bio Degradable Waste Segregated (in TPD)	0.000
Domestic Hazardous Waste Segregated (in TPD)	0.000	Domestic Hazardous Waste Generated (in TPD)	0.020
C&D Waste Segregated (in TPD)	0.000	Total Waste Segregated (in TPD)	0.000
Decentralized Processing Capacity (in TPD)	0.000	No. of Wards Covered under Decentralized Processing	0
Total Waste Collected (in TPD)	11.180		

Population

Year	Total Population	Slum Population	Floating Population
2001	21249	0	450
2011	26452	0	950
2019 Projected	0	0	0
2025 Projected	0	0	0

Assumption %age for floating population: 3.12

	As per 2011 Census	Projected up to 2019	Justification for the Projection	Current Status
No. of Urban HHs resorting to Open Defecation	0	0	NO	ODA : 100
No. of Urban HHs having Pit latrines	0	0	NO	Pit : 0
No. of Urban HHs having Insanitary Latrines	0	0	NO	Insanitary : 0

Is Anti Litering Law Incorporated by Law ? Yes/No	Y	No. of spot fine made	0
Amount Generated(In Rupees)	0.00	Is User Fee Incorporated by Law ? Yes/No	Y
Amount of user fee Generated Residential (In Rupees)	0.00	Amount of user fee Generated Commercial (In Rupees)	0.00
Capacity Building Current Status(Count)	2	Public Awareness IEC Status	80