INDIA SANITATION COALITION

BUILD • USE • MAINTAIN • TREAT

Godrej | CONSUMER PRODUCTS

sampurnEarth

Cities in Focus
Nashik and Nagpur

Together we can make India an extraordinary global example and a pioneer on Inclusive Waste Management, where no one is left behind...

About Sampurn(e)arth

12 Recovery and 5 Recycling Facilities with Plastic recycling capacity of 10,000 MT/Year	Engaging with 2000+ waste workers across these facilities & the Supply Chain	50+ Plastic Brands and Producers
30+ Biogas Units	Customized Awareness Programs and Digitized Waste Collection for 50,000 Households	
60,000 MT Waste Processed in last 12 months		

*Plastic Recycling Units and Material Recovery Facilities

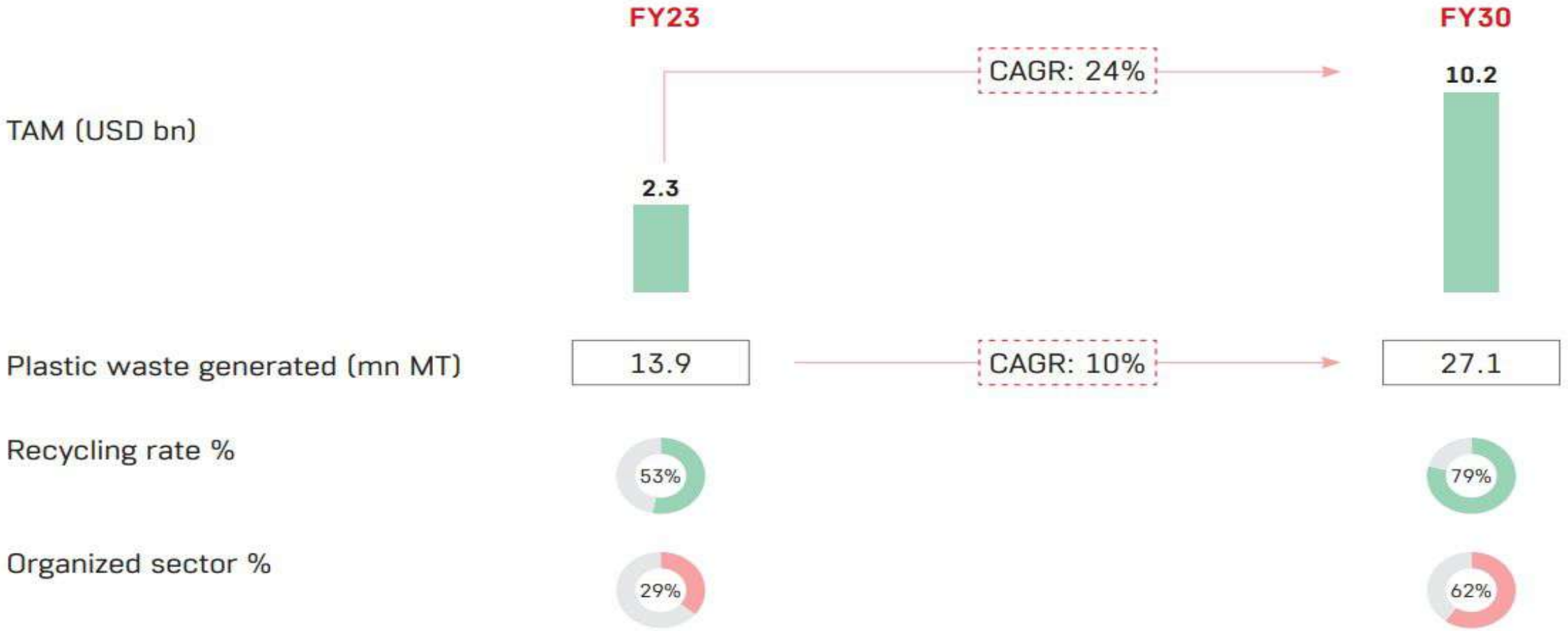
- Mumbai, Maharashtra
- Malegaon, Nasik, Maharashtra
- Nagpur, Maharashtra
- Bicholim, Goa
- Harvalem, Goa
- Pissurlem, Goa
- Dhoraji, Junagarh
- Mithapur, Gujarat

Recently Niti Ayog published case study about our work with Bicholim, Goa under best practices in Plastic Waste Management in "Waste Wise Cities" report. (https://www.niti.gov.in/sites/default/files/2021-12/Waste-Wise-Cities.pdf)

Our Partners

Glimpse of Indian Plastic Recycling Market

The size of the Indian plastic waste recycling industry was estimated to be USD 2.3 billion in FY23. The industry is expected to grow at a CAGR of 24% and reach USD 10.2 billion by FY30.



** Source- Avendus

Study Objectives

- The study aimed to assess the existing SWM system of Nagpur and identify the gaps and areas of interventions (under Phase-2) to achieve plastic circularity.

Aspects Captured

SWM Operations	Waste Assessment	Stakeholder engagement
• Waste Collection System • Collection Level • Segregation Level • Transfer point assessment • GVP Mapping • Waste Processing	• Waste generation (by types) • Waste collection (by types) • Waste processed (by types)	• Level of awareness of people • Capacity and Well-being of Sanitation Staff • Assessment of Scrap dealers • Assessment of Bulk Waste Generators

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Approach & Methodology

Desk Research

- Review of published reports - CSWAP, DPRs, SWM reports etc.
- City data provided by municipal corporation and collection contractors

Stakeholder Survey

- Citizen Survey
- Safai Karmachari Survey
- Waste Pickers Survey
- Scrap dealers Survey
- BWG Survey

Visual Observation

- Segregation Level
- Waste composition
- Infrastructure assessment - collection vehicles, transfer stations & MRF
- GVP hotspots

Stakeholder Coverage

- **ULB officials**
- **Collection contractors** ***(AG & BVG)***
- **Households (417)** *-(HIG: 144, MIG: 124, & LIG: 149)*
- **Safai Karmachari (55)**
- **Waste pickers (63)**
- **Scrap dealers (47)**
- **BWG** (3 hotels & mapping in 5 wards from 4 zones)

Key Findings

Component 1: SWM Operations (Journey of Waste)

Collection Level

❖ **Current Status**

- **> 90% for 3 wards covered** (based on comparison of GPS maps)

❖ **Gaps**

- Presence of GVP spots (avg. GVPs per ward: 32) which may be linked with collection system
- Need of examining collection timing and stoppage points

❖ **Recommendations**

- Collection Route redesigning and monitoring

Key Findings

Segregation Level

❖ **Current Status**

- **38.93% (residential areas)**
- **56% (commercial areas)**
- **33% (BWGs)**

❖ **Gaps**

- Low level of segregation

❖ **Recommendations**

- IEC awareness campaigns
- Segregation Monitoring

Key Findings

Transfer Station Assessment

❖ **Issues**

- Lack of separate transfer of dry and wet waste
- Lack of adequate and designated space

❖ **Recommendations**

- Setting up decentralized plastic sorting centre
- Separate platforms for unloading of dry and wet waste

Waste Processing

❖ **Current Status & Issues**

- Planned to process only ~15% of waste and trial runs shall be taken up *(by Netherlands based company, SusBDe)*
- More focus on wet waste and dry waste to be processed through RDF *(which is against circular economy principle)*

❖ **Recommendations**

- Ensuring source segregation and higher processing capacity

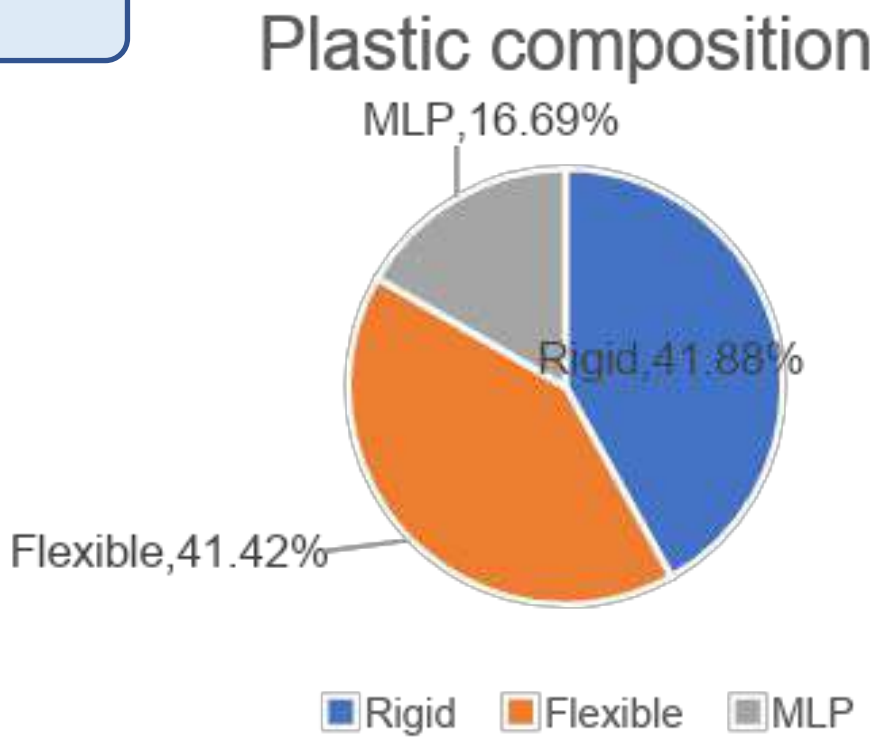
Key Findings

Component 2: Waste Assessment

Waste generation from residential areas

- Total dry waste **147.5 TPD** (Plastic: 26.2% & Non-plastic: 73.8%)
- Total wet waste: **553.8 TPD**
- Total sanitary & hazardous waste: **13.3 TPD**

***Total Waste: 714.6 TPD**



Significant share (58.11%) of low-value and zero-value plastic

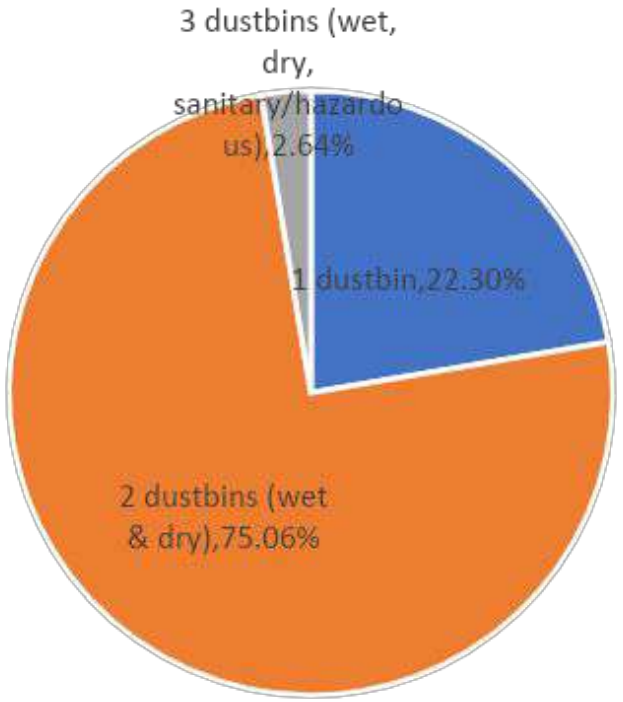
Key Findings

Component 3: Stakeholder Engagement

Level of Awareness of people

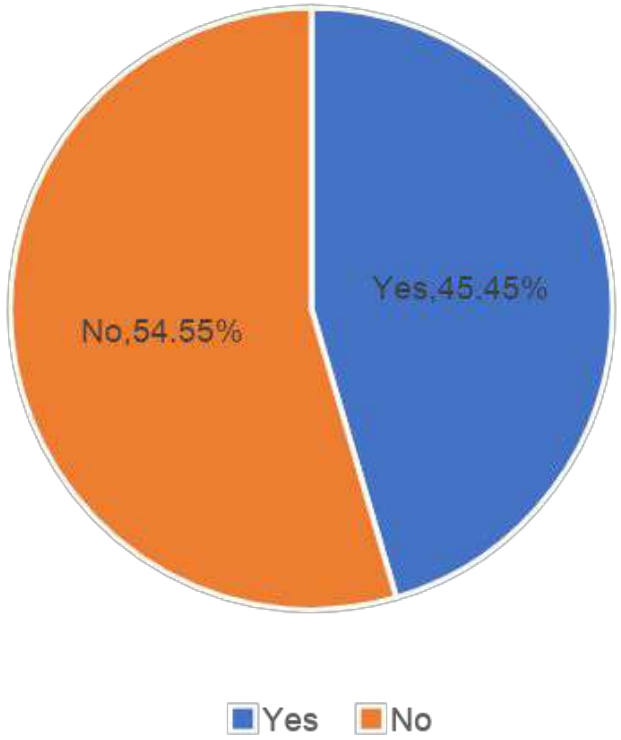
Use of dustbins

- Although majority (75.06%) HHs use 2 dustbins, level of segregation is low at 38.9%.
- It indicates low knowledge of waste types and benefits of segregation.



Well-being of Safai Karmacharis

Use of PPE Kit

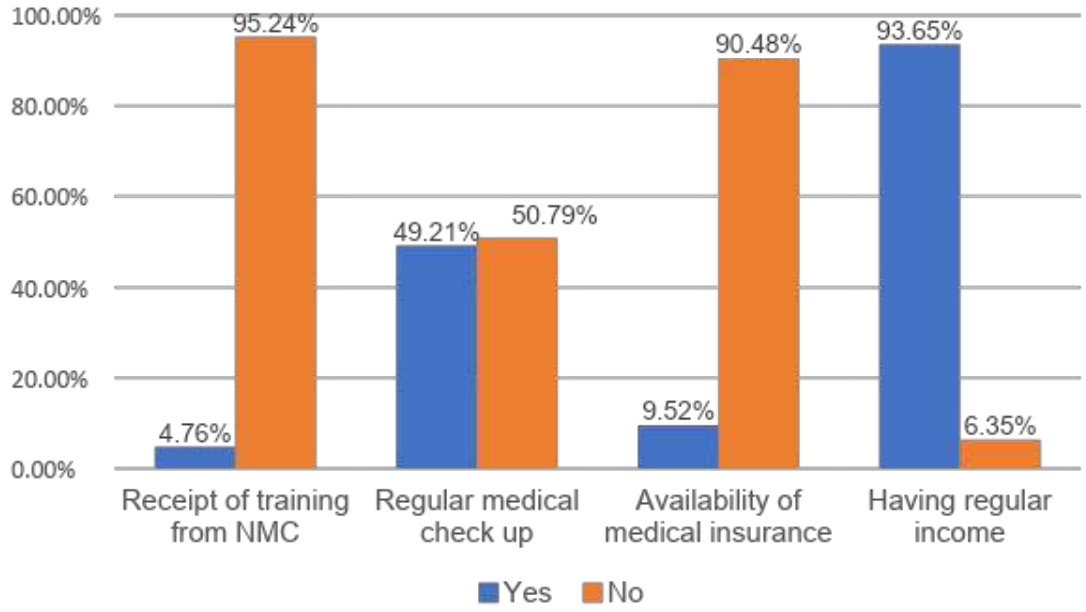


- The use of PPE kit is low at 45.45%
- Need to create awareness about the benefits of PPE kits and PPE kit distribution

Key Findings

Well-being of waste pickers

Formalization Measures



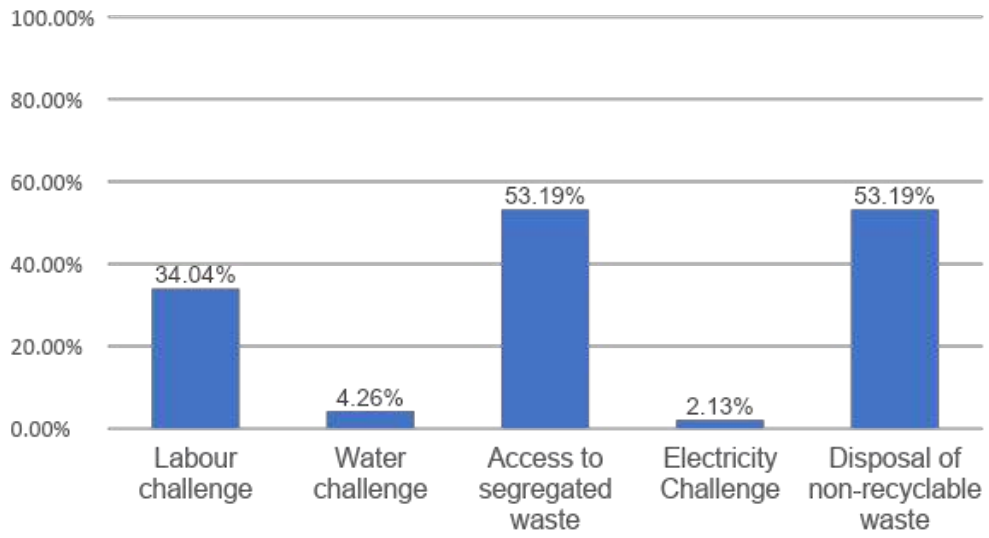
- There is a need of formal training and regular medical check-up.
- Fair price can be provided to the waste pickers by setting up collection centres.

Zonjhari Vasti (Ward 28- Zone 5)- where majority of waste pickers sell their scrap

Key Findings

Assessment of scrap dealers

Major challenges faced



- The major challenges are lack of access of segregated waste, disposal of non-recyclable waste and labour challenge.
- Availability of authorized land is a common problem.
- Need of setting up linkages with MRF or collection centres

Key Findings

Assessment of BWGs

Mapping of BWGs

Ward	Zone	Total No. of BWGs
Ward 14	Zone 2	97
Ward 32	Zone 3	233
Ward 27	Zone 5	282
Ward 28	Zone 5	161
Ward 1	Zone 10	209

Key Observations

- Low level of segregation
- Lack of linkages with scrap dealers for the sale of valuable dry waste
- Need to conduct awareness drives for source segregation
- Need to set up collection channels for valuable dry waste

The Waste Supply Chain

Level 0	Households, BWGs, Commercials
Level 1	Waste Pickers, Municipal Collection Workers, Housekeeping Staff
Level 2	Scrap Dealers Purchasing from Level 1 and also Collecting from Industries and BWGs
Level 3	Aggregators and Traders working with selected categories of waste
Level 4	Recyclers, End of Life Disposal(eg.Cement Factories)
Level 5	Producers/ Manufacturers
Level 6	Brand Owners

Policies Guiding Plastic Waste Management Rules- Calls for inclusion for informal waste markets

Solid Waste Management Rule by Supreme Court in 2016: "State policies and strategies should acknowledge the primary role played by the **informal sector of waste pickers, waste collectors and recycling industry** in reducing waste and provide broad guidelines regarding integration of waste pickers or informal waste collectors in the waste management system" (§11.c, 2016)

Plastic Waste Management Rules by Ministry of Environment, Forest and Climate Change 2018: And whereas, to implement these rules more effectively and to give thrust on plastic waste minimization, source segregation, recycling, **involving waste pickers, recyclers and waste processors in collection of plastic waste fraction either from households or any other source of its generation** or intermediate material recovery facility and adopt polluters pay principle for the sustainability of the waste management system, the Central Government reviewed the existing rules.

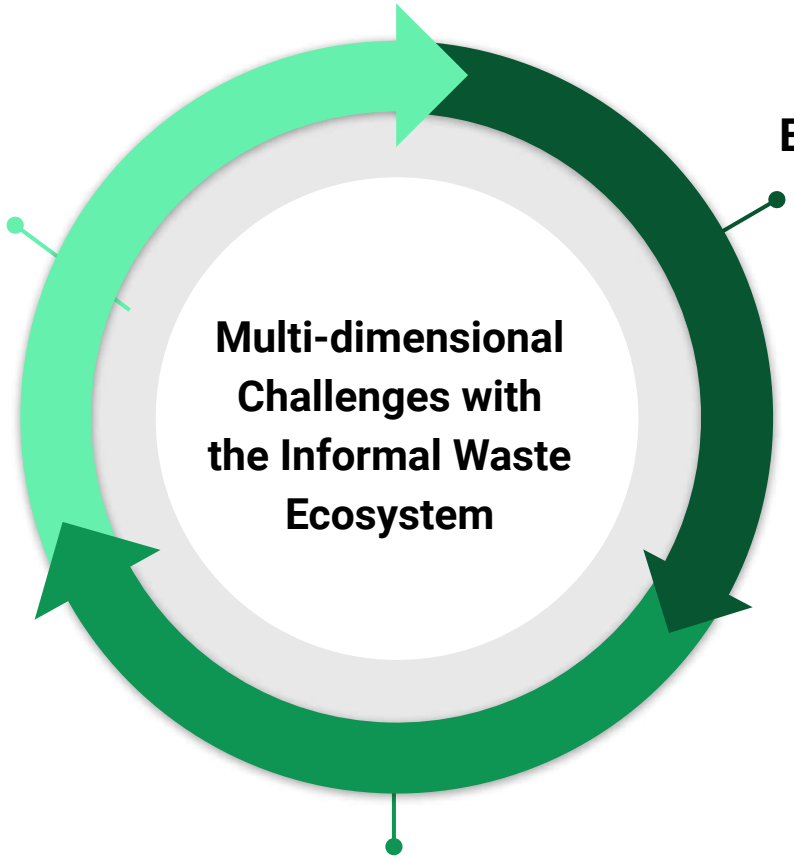
Swatchh Bharat Survekshan, Key Focus Areas in 2020: **Uplift social condition of informal waste pickers**

Swachh Bharat Mission (Urban) by Ministry of Housing and Urban Affairs, Govt of India in 2019: It is estimated that approximately 70% of plastic packaging products are converted into plastic waste in a short span. Approximately 9.4 million TPA plastic waste is generated in the country, which amounts to 26,000 TPD2 . **Of this, about 60% is recycled, most of it by the informal sector.**

Challenges with Informal Waste Markets and our approach

Social

- Child Labor
- Informal Working arrangement defying labour laws
- Health problems with dangerous working environments
- Mostly migrants and un-recognized by the local government.



Environmental

- Non- Regulatory disposal of non recyclables (burning, dumping, etc.)
- Non Regulatory disposal of Liquids and gases generated in the recycling process

Financial

- No continuous and sustainable access to the waste stream
- Not Taxed under and Govt loses on Revenues
- Not all categories of waste is recovered from the waste stream
- Fluctuating prices leading to business risks

The Approach

- **Assess impact of new policies and adapt to new regulations and market needs**
- **Identify, Enroll, Educate and Formalize and Collectivise**
- Registration & ID Card distribution for Scrapyards, Facility Workers, Supplier Waste Picker and Ferrywalas.
- Tailored Support Programs in Formalization(documentation, legal, children education support, state and national govt program enrollment)
- Accountability, Transparency and Traceability of their activity by using easy and accessible digital tools
- Make compliant as per pollution rules and disposal of non -recyclables
- Bring under the ambit of the Plastic Waste Management and EPR laws.
- Partnerships in Collection of Material from Bulk Waste Generators and other Govt. Collection Centers
- Further processing and recycling in close association to maximize economic gains.

Project Model and KPIs

BULK WASTE GENERATORS

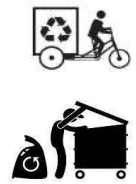
Segregated Dry Waste Collection System with IEC drives.

- Housing Complexes
- Hotels, Restaurants and other Commercials
- PUBLIC SPACES and Educational Campuses.

BWG Collection Program

Formalization & Market Connect

Waste Collectors and Scrap Dealers

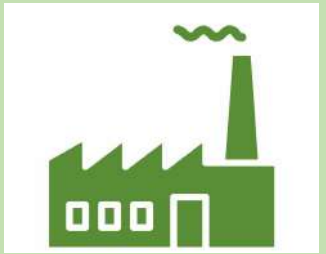


100 MT/ Month Mixed Dry Waste and 100 MT/month of Plastic Aggregation

Nagpur MRF (Primary & Secondary Sorting Facility)

Plastic Recycling Facility at Butibori IDC with capacity 2,000 Kg/Day

PCR applications



400 Bulk Waste generators with 2 Lakh Population

50 Direct Employment and Organized into SHGs/Co-Operative

Diversion of 2,5000 MT/Year of Dry Waste(70% plastic) away from Landfills

40 Local Scrap Dealers(L2) Organized into Association

500 Waste Worker Formalization and Mainstreaming

Project Budget for 3 years

Budget head	Year 1 (Rs in Lakhs)	Year 1 (Rs in Lakhs)	Year 1 (Rs in Lakhs)	Total for 3 years (Rs in Lakhs)	Details and Comments
Infrastructure Support	70	0	0	70	Baling Machine, Conveyors, Shredder, Forklift, 2 Waste Collection trucks
Awareness and IEC	55	38	34	127	Setting Up digital monitoring system(QR codes),Door to Door Awareness, Workshops and Meetings
Social Inclusion Programs	29	34	29	92	Working with 500 Waste workers for Social inclusion, Govt. Program registrations, PPE support and Health, Safety and Hygiene Programs,
Operational Support for the Material Recovery Center	22	11	6	39	Rental Support for the MRF, Working capital, Viability gap Funding till the project reaches Breakeven.
Total	177	83	68	328	

Thank You

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