



SOLID WASTE MANAGEMENT

DISTRICT BHOPAL

PRE EXISTING SCENARIO

No idea of Solid Waste Management prevailed.

Recycling only meant to sell the waste to local vendors.

Centralized GP or District level waste aggregation didn't exist for Rural areas

No specific task or roles cut out for any Panchayat Functionary regarding its management.



OPEN GARBAGE DISPOSAL



CHALLENGES

MIND SET

- Not possible in Rural Areas
- Its a huge task
- Impossible to implement in the entire Rural area

LACK OF FUNDS

No separate Funds for Waste and its O&M given to Rural Panchayat similar to Urban Bodies

LACK OF SPECIFIC KNOWLEDGE

About waste disposal and the mechanism

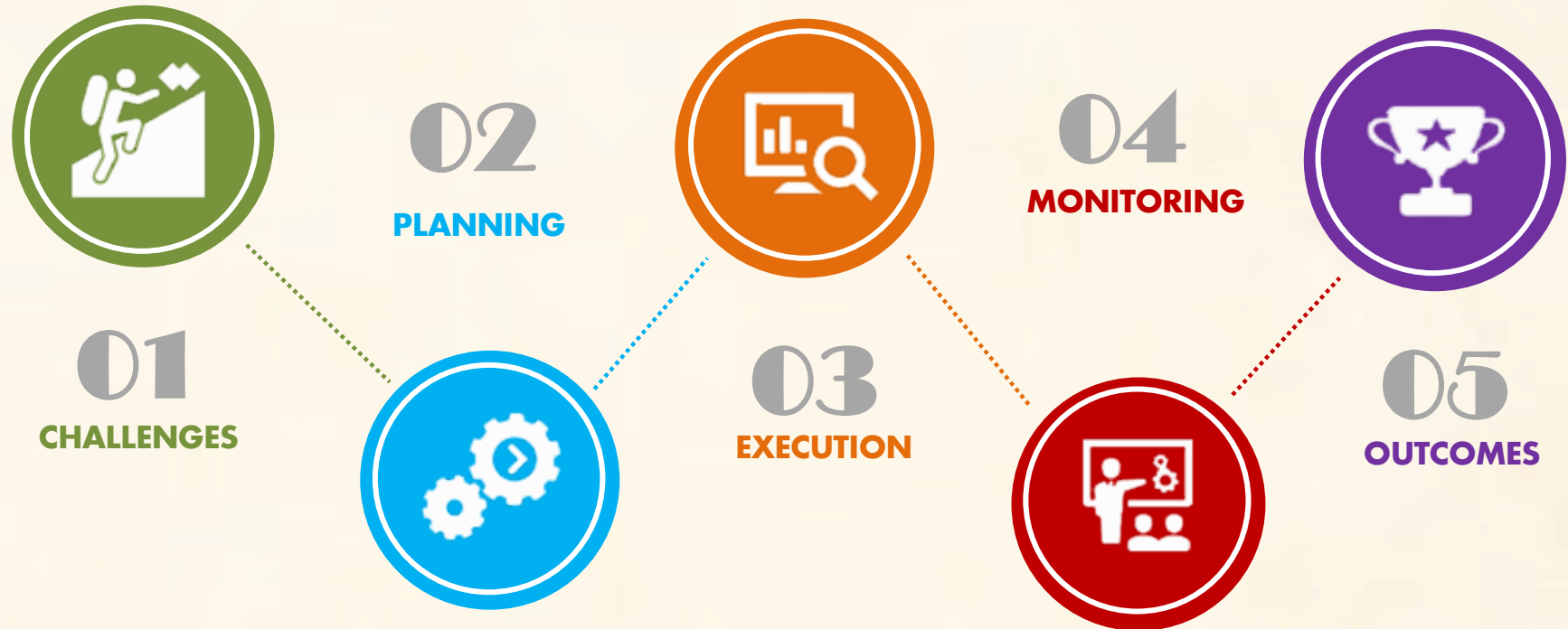
Never Implemented before in Rural Areas.

LACK OF PLANNING

The Modus Operandi to operate MRF was not clear. No precedents for Rural Areas existed.



WHAT WE DID



APPROACH

01

**Big Push
Model
taken in
all GPs.**

02

**Sensitization
for Door to
Door waste
Collection**

03

**Training
and IEC**

04

**Infrastructure
Manpower
Budgeting**

BIG PUSH MODEL

- Started execution simultaneously at all levels .
- GP started construction of all necessary infra and purchased vehicles
- Block started the Training, IEC and identification of Manpower
- ZP pushed forth on revenue generation through Tax Collection, MRF center set up and its O&M , setting up Command center and Process development for Monitoring and Control.
- Results could be seen in 6 months .

SENSITIZATION & TRAININGS



Training of Swachhagrahis at District level



Training of women public representative

- **Swachhagrahis** were used for sensitization to boost the door to door collection.
- Manpower were identified to work at Segregation sheds and to operate the waste collection vehicles.

IEC ACTIVITIES



Swachhta Run at Nipania Sukha Village of Phanda Block

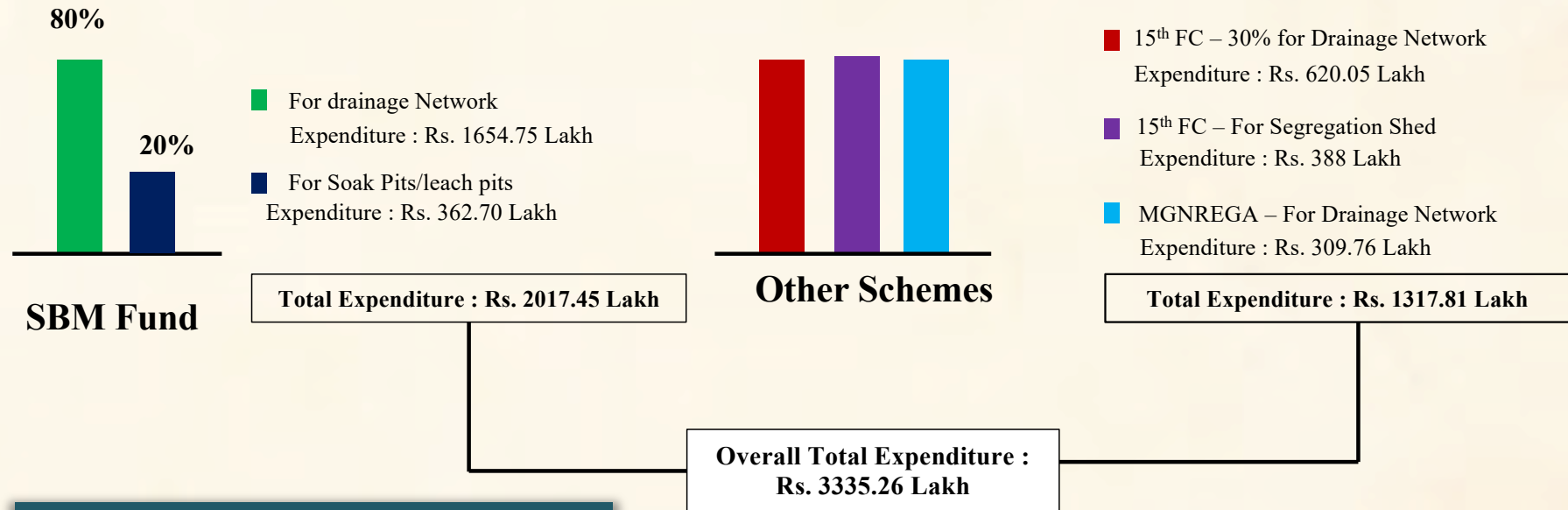


Involvement of Transgender community



Nukkad Natak performed by College girls at gram panchayat Bagonia

BUDGETING



Taxation : Own Source of Revenue

Total tax of Rs. 2.50 Crore collected by the GP's in Yr 2022-23 .

- Purchase E vehicles
- It was used to Pay the salaries of the Manpower deployed at each GP.
- Meet out the O&M at the GP
- To meet the Transportation Cost

INFRASTRUCTURE DEVELOPMENT

Name of Structure	Constructed Structures	
	Target	Achievement
Compost Pit	1421	1406
Segregation Shed	218	218
Garbage Vehicles	226	229 (75 tri-cycles, 154 e-rickshaw)
Gobar Gas Plant	08	06
MRF Centre	01	01

EXECUTION

Door-to-door waste collection through Tri-cycle and e-rickshaws

Infrastructure build up at gram panchayat and cluster level.

Construction of MRF centre for scientifically disposal of waste and its processing.

SEGREGATION SHEDS

For the systematic disposal of the waste collected at the village, a Segregation Shed has been constructed at the Gram Panchayat level. Garbage is collected from the houses by the Gram Panchayat with its own resources like tricycle, e-rickshaw etc. and then it is segregated into various categories at the Shed. Then it is sent to the Nodal Cluster Panchayat for further processing.

218

Total Segregation Shed constructed
in District

**1.80
Lakh**

Estimated cost of each constructed
Segregation Shed of 7x5 M



Segregation Shed constructed at GP Bagonia of Phanda Block

COMMUNITY NADEPS

Nadep has been constructed in the Gram Panchayats as per the requirement, through which the Bio Degradable and kitchen waste coming out of the houses and agricultural related waste are collected in Nadepts and are COMPOSTED.

2095

**No. of Total NADEP
constructed in District**

**0.08-0.12
Lakh**

**Estimated cost of construction
of Individual Nadep**

**0.14-0.25
Lakh**

**Estimated cost of construction
of Community Nadep**



NADEP

E-RICKSHAWS

Similar to urban area Door-to-Door waste collection, is being ensured through tricycles and e-rickshaws in villages. Garbage vehicles operate daily to collect the waste coming out of the houses. Tracked through GPS from the Command Center.

226

E-rickshaw running daily to collect waste door-to-door in villages.

2.50
Lakh

Estimated cost of each
E-rickshaw



Door-to-door waste collection through e-rickshaws

GOBAR GAS PLANTS

With the construction of Gobar Gas Plants in gram panchayats, the economic condition of the rural families is improving and its uses is also being environmentally friendly to manage the Gobar and liquid bio waste.

08

Gobar Gas Plant Constructed in District with 02 under Construction

70.00
Lakh

Total Invested Cost

0
er
Construction



Gobar Gas Plant at GP Bhensoda of Berasia Block



Gobar Gas Plant at GP Mendori of Phanda Block

MATERIAL RECOVERY FACILITY (MRF) Center



MoU with CLF's

MoU with CLF's SHG Women Group to Operate and maintain the MRF

Expert Assistance

Experts Agency to assist the CLF's

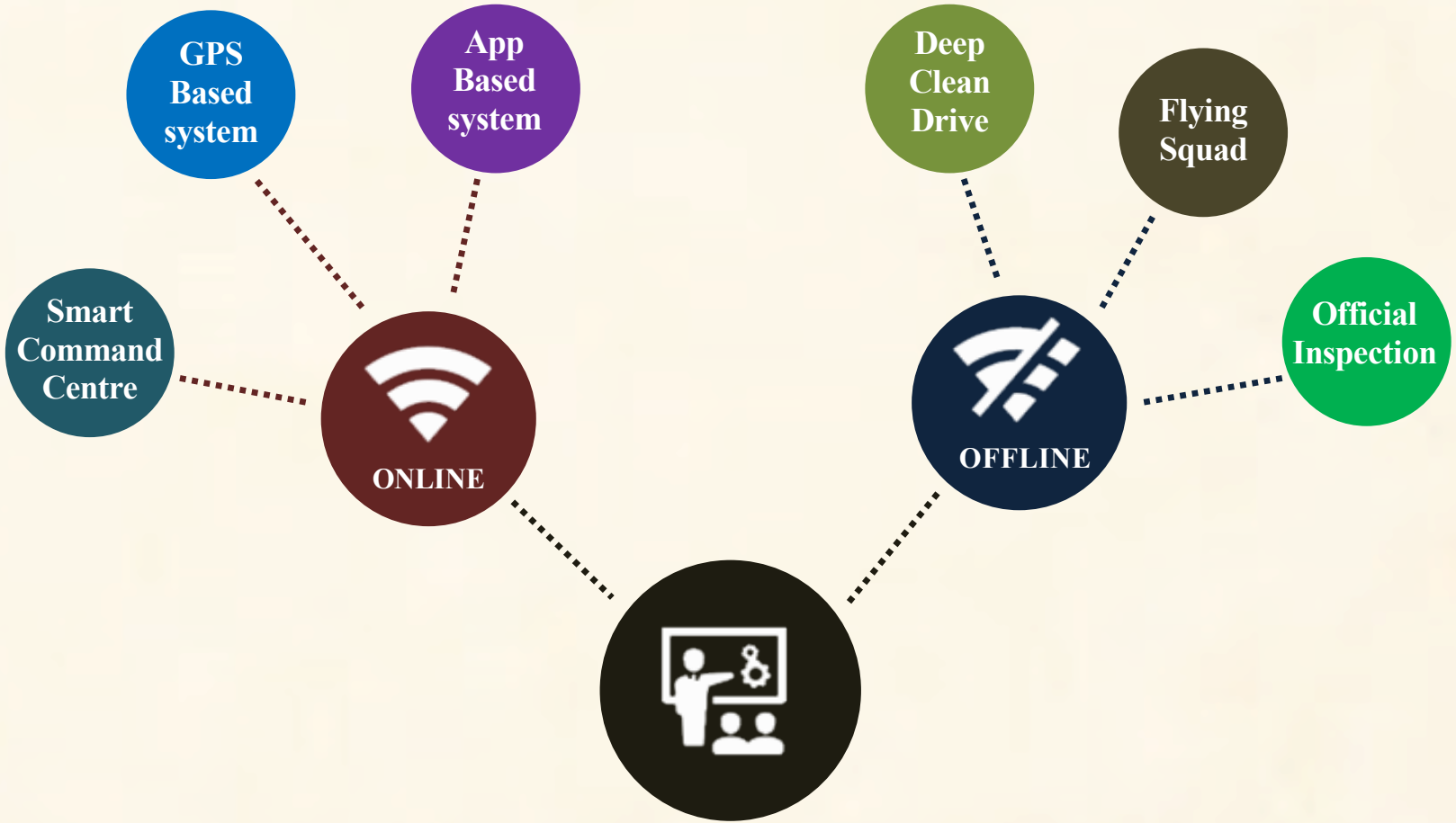
MoU with MPRRDA

MoU with MPRRDA and the waste Aggregators

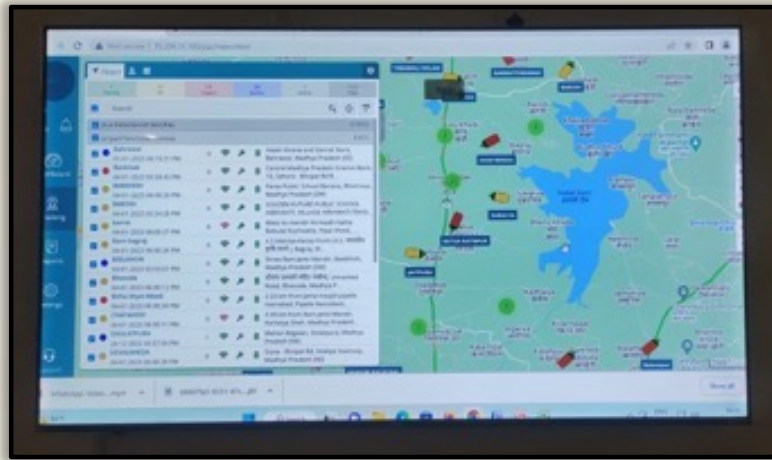
MoU with Nagar Palika

MoU with Nagal Palika

MONITORING



SMART CONTROL AND COMMAND CENTER

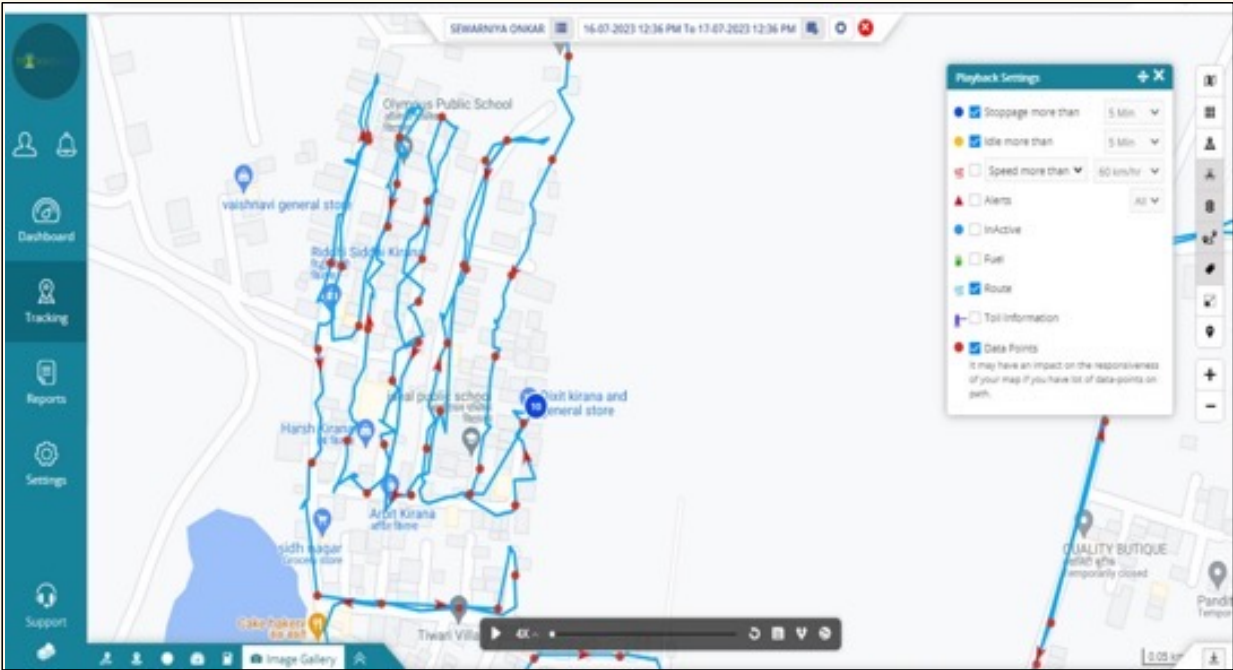


Smart Control & Command Center

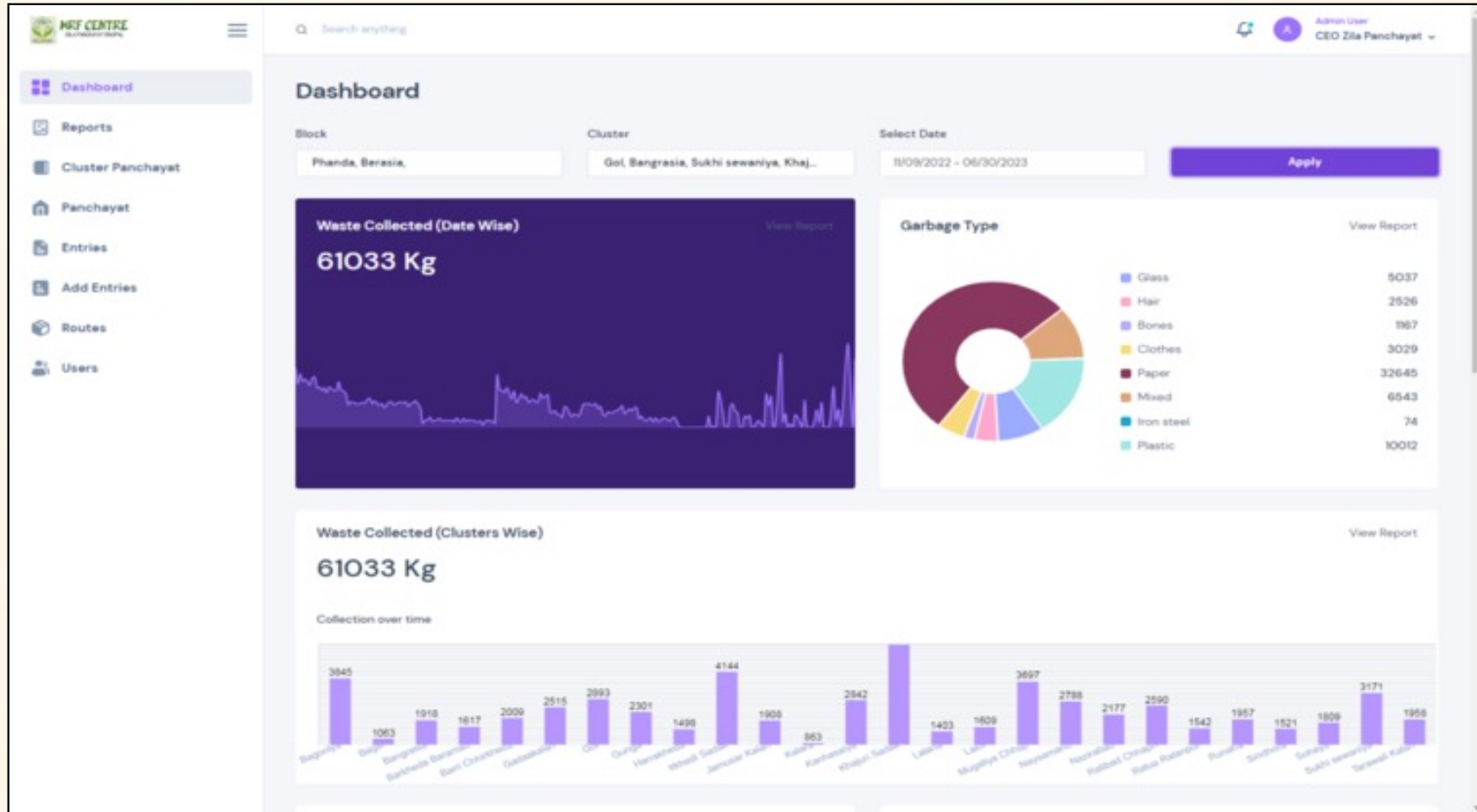
- Entire District Operations can be monitored from the Center.
- Gets the GPD location of all waste vehicles in the GPs through GPS tracker.
- Tracks the daily run time and distance covered in each GP
- Gets live data of daily waste Collected in GP thorough a dedicated application.
- Monitors Daily waste Processed at the MRF facility.

GPS TRACKING

GPS Based monitoring system



MRF CENTRE MOBILE APPLICATION



OFFLINE MONITORING : Flying Squads

Before

After



Gram Panchayat : Imaliya, Block : Phanda

Before

After



Gram Panchayat : Bangrasia, Block : Phanda

Deep Cleaning Drives on Regular Occasions



Deep Clean Drive held in all the gram panchayat of District

Solid Waste Management Process



Waste to Wealth Process

- Solid waste door to door collection through vehicles
- Waste Segregated at GP level shed
- Transported to 26 Cluster Points
- Centralized waste collected from the MRF center and brought there.
- Processed at the MRF
- Waste Sold to MPRRDA and other agencies

TRANSPORTATION FROM CLUSTER TO MRF



WASTE COLLECTED FROM SHEDS



PROCESSING OF WASTE AT MRF



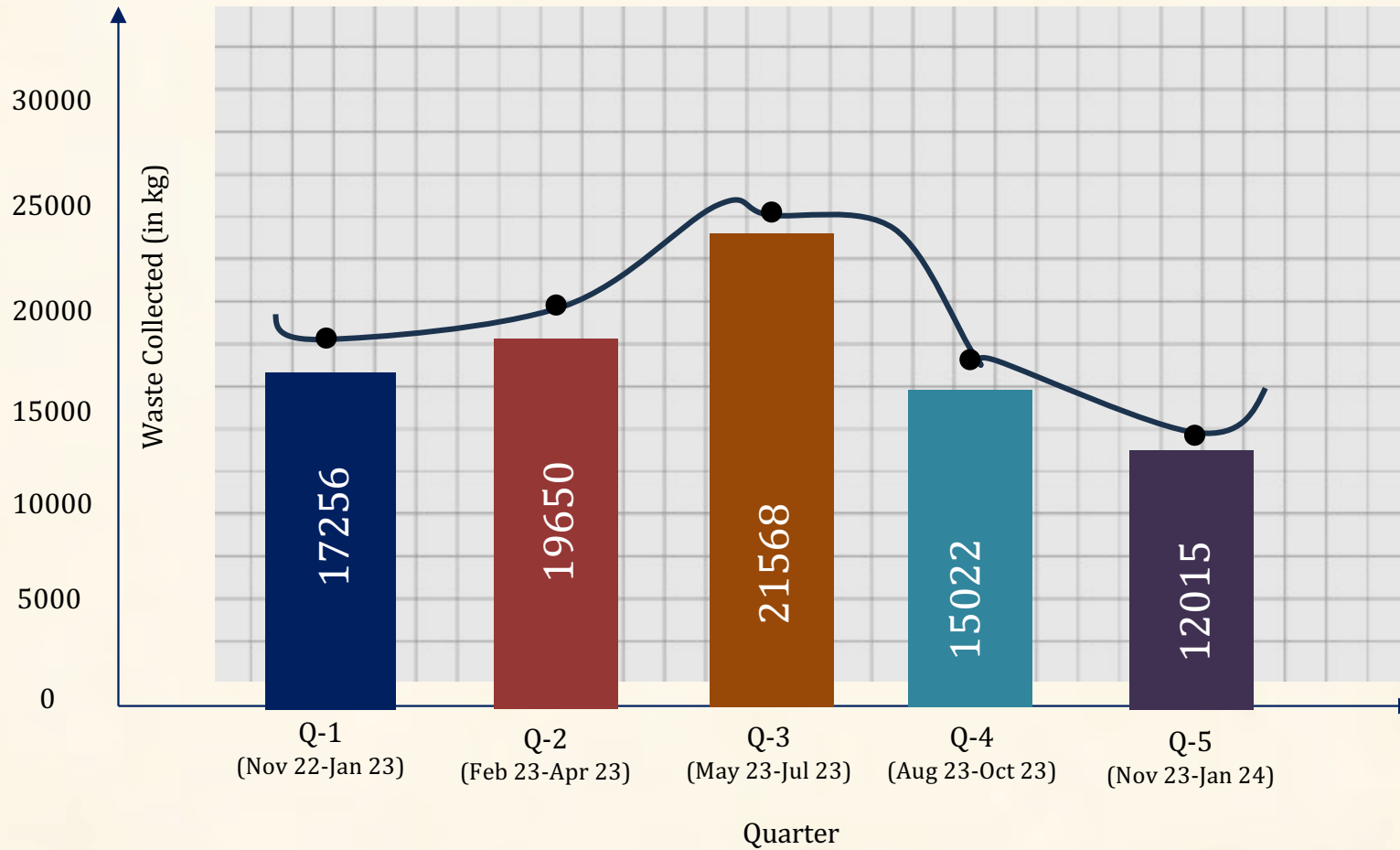
PROCESSING MACHINES USED

- Conveyor Belt and Segregator
- Fatka Machine
- Grinding Machine
- Compressor Machine
- Incinerator



Waste collection Quarterly (from Nov 22 to Jan 24)

OUTCOMES



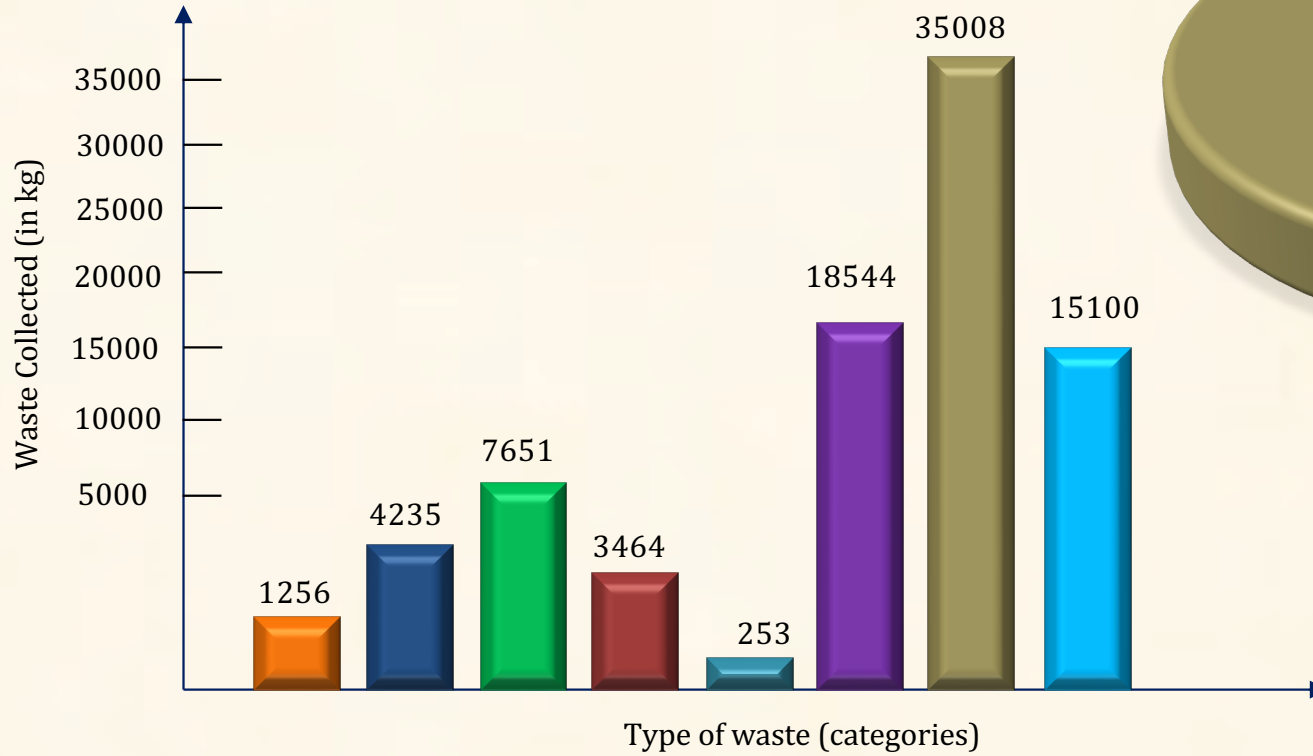
Total Waste Collected :
85.5 MT

Disposed Waste :
42.2 MT

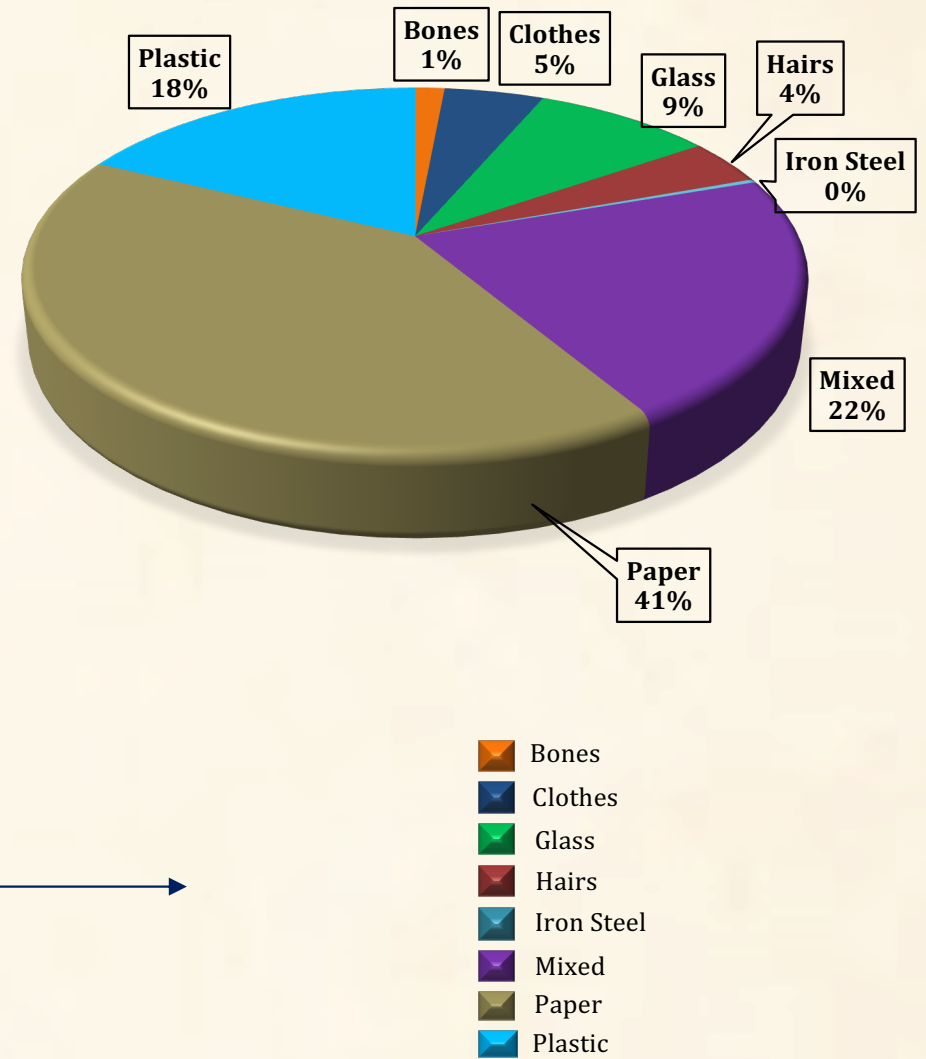
Total Processed Waste :
35.0 MT

Under process Waste :
8.2 MT

Type of Waste collected at MRF Centre (from Nov. 22 to Jan 24)



TOTAL WASTE COLLECTED = 85.5 MT



Waste Sold to different Agencies
(from Nov. 22 to Jan 24)

S.No.	Name of Agency	Total waste sold (in metric ton)
01	Punha Chakran Agency	14.21 MT
02	MP Rural Road Development Agency (RRDA)	4.01 MT
03	Sarthak Sanstha	10.16 MT
04	Local Vendors	6.68 MT
Total		35.06 MT

TOTAL FUNDS GENERATED = 4.5 LAKH

DISTRICT ACHIEVEMENTS

1ST in West Zone and 7th in NATIONAL RANKING under SBM 2022

5 STAR RATING

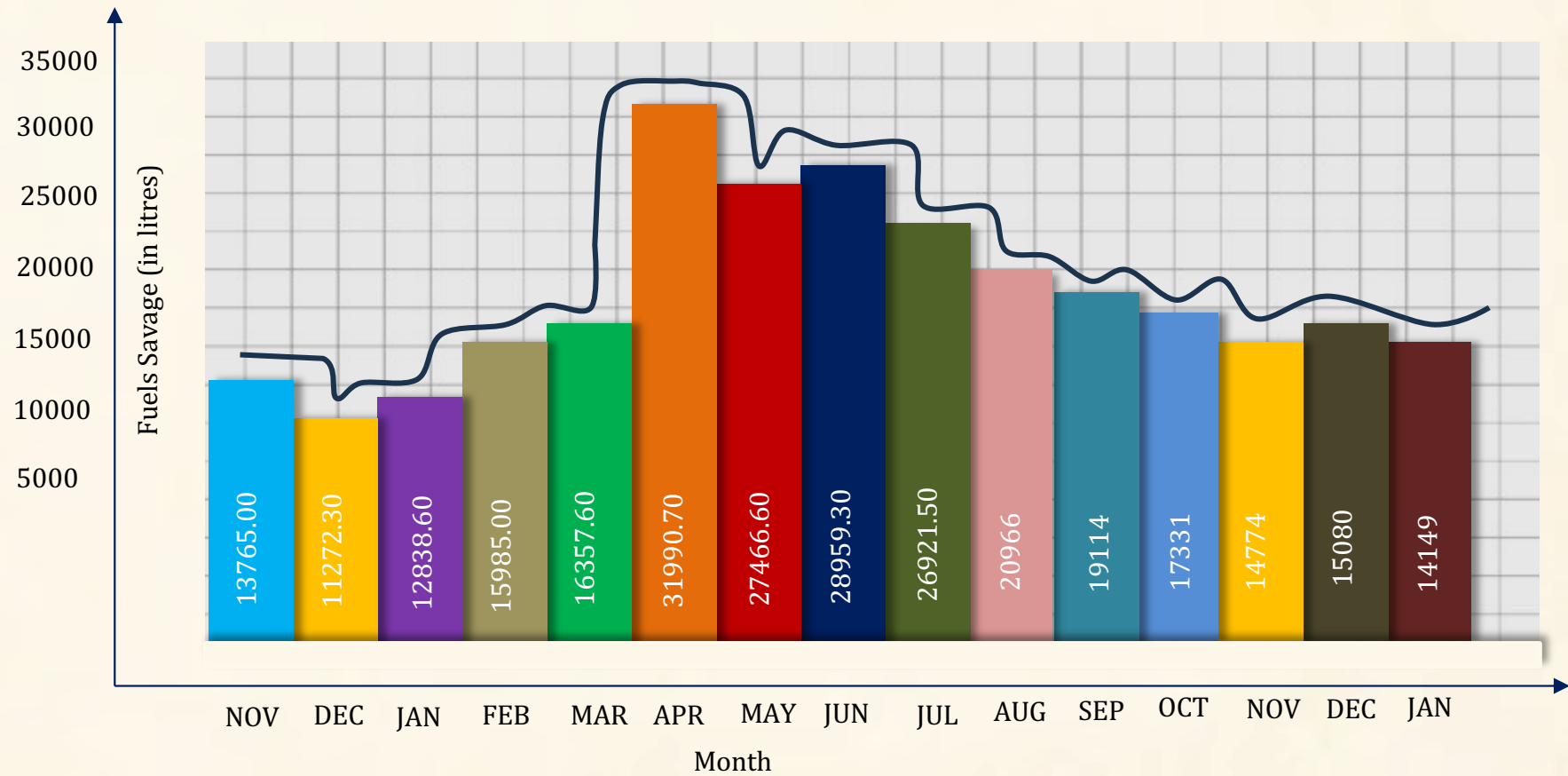
Swachh Bharat Diwas 2022				
Awards under various categories for the State of Madhya Pradesh				
Sl. No.	Name of Award	Category	State/ District	Rank
1	SSG- Top Performing States-Zone Wise	West Zone	Madhya Pradesh	1
2	SSG- Overall Top Districts Zone Wise	West Zone	Bhopal (MP)	1
3	SSG- Overall Top Districts Zone Wise	West Zone	Indore (MP)	3
4	Sujlam 1.0 Campaign		Madhya Pradesh	1
5	Sujlam 2.0 Campaign		Madhya Pradesh	4

Swachh Survekshan Grameen-2023		
SBM Dashboard	SSG-2023 Toolkit	Peer Verification
District progress card	Village Self Assessment-Entry Status	Peer Verification- Entry Status
<p>Front Runners</p> <p>★★★★★</p> <p>, ANUPPUR [Madhya Pradesh], BHOPL [Madhya Pradesh], GANGTOK [Sikkim], MANGAN [Sikkim], Pakyong [Sikkim], Soreng [Sikkim], JAGTAL [Telangana], KAROMNAGA</p>		

Fuel Savings through the Use of EVs

Total Petrol Savings
286971.10 liters

Total Fund Saving :
Rs. 2.86 Cr

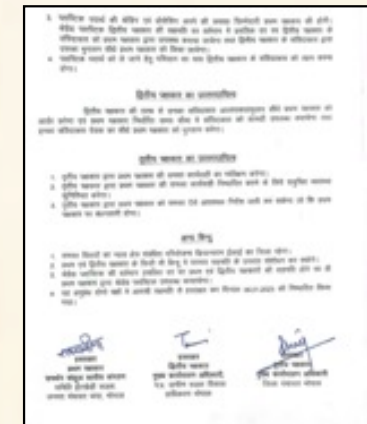
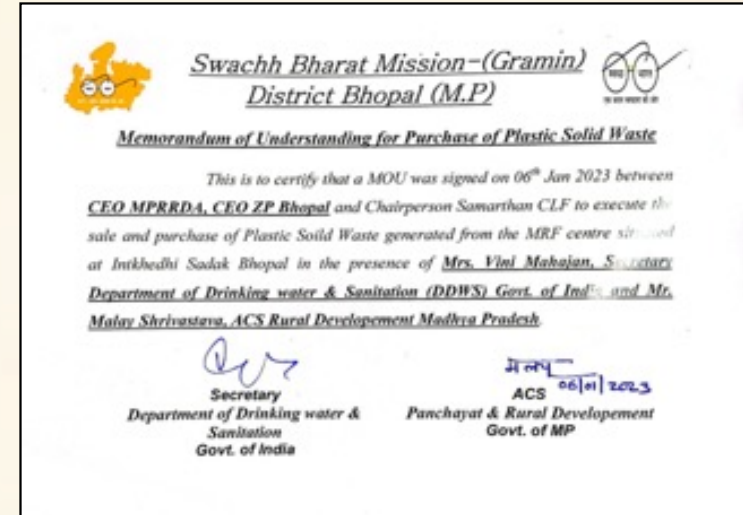


MoU with MP RRDA : Plastic Sale to Rural Roads Agency in MP



MoU for Purchase of Plastic Solid Waste

A tripartite agreement was executed between Samarthan Sankul Kendra, Madhya Pradesh Rural Road Development Authority and Zila Panchayat for using the plastic waste as a road-making material. Under this the women of SHG group will operate the MRF centre and after processing the plastic waste received in the centre, according to the terms of the contract, it is sold to MPRRDA.



MoU with Municipality to sell waste to Rural MRF



NOC from Pollution Control Board for establishment of MRF Centre

INNOVATION

Waste to Wealth



Manufacturing Shed for Waste to Usable Items through Handlooms

Plastic Bags , Plastic Rugs, Plastic sheets shall be manufactured through collaboration of NGO and SHG women from the waste collected at the MRF

Online Portal to Monitor Bio Gas : Collaboration with Start Up for real time Bio Gas Monitoring

BioSarathi Real Time Monitoring System for Biogas Plants

Runaha Gram Pachayat Plant Performance in 1 month (19 Dec-18 Jan) BioSarathi Installation 19-12-2023

Current Month Efficiency					
	21%	190	90	6	5,789
	Average Efficiency	Cum. Total Biogas Produced	Kg's LPG gas saved	Cylinder's LPG saved	INR Money saved

If monthly average efficiency of plant is

50%	450	214	15	13,710
Average Efficiency	Cum. Total Biogas Produced	Kg's LPG gas saved	Cylinder's LPG saved	INR Money saved

If monthly average efficiency of plant is

75%	675	321	23	20,565
Average Efficiency	Cum. Total Biogas Produced	Kg's LPG gas saved	Cylinder's LPG saved	INR Money saved

If annual average efficiency of plant is

55%	5996	2855	201	1,82,678
Average Efficiency	Cum. Total Biogas Produced	Kg's LPG gas saved	Cylinder's LPG saved	INR Money saved

CHALLENGES AHEAD

- Rising Cost of MRF center Operations (Fixed Cost of 75k per month)
- NO separate funds available for Maintenance of Vehicles in GP
- Separate Budget Line required for ZP for O&M similar to Urban Areas.
- Over Reliance on Taxation to meet salaries of cleaning staffs and other costs at GP level.
- Lack of Policy regarding Bulk Waste Generators in Rural areas.

Thank
You!