



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

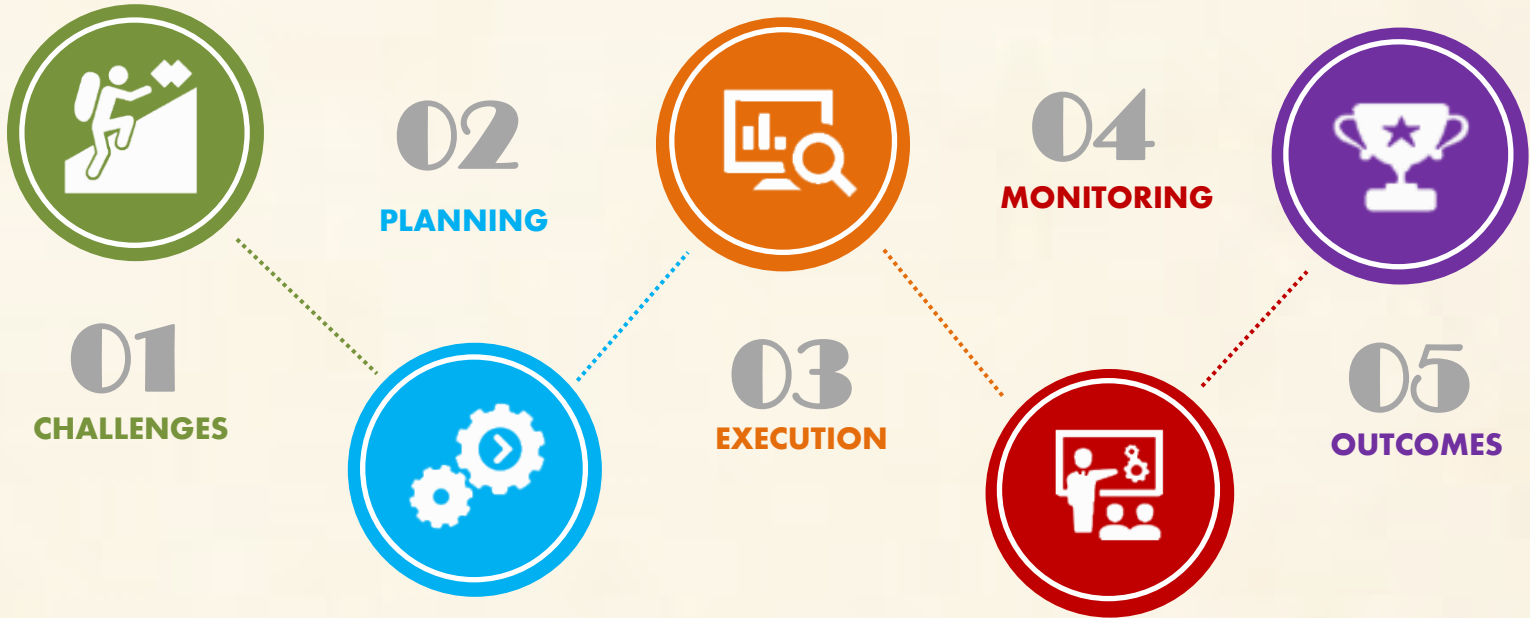
Never Implemented before in Rural Areas.

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**

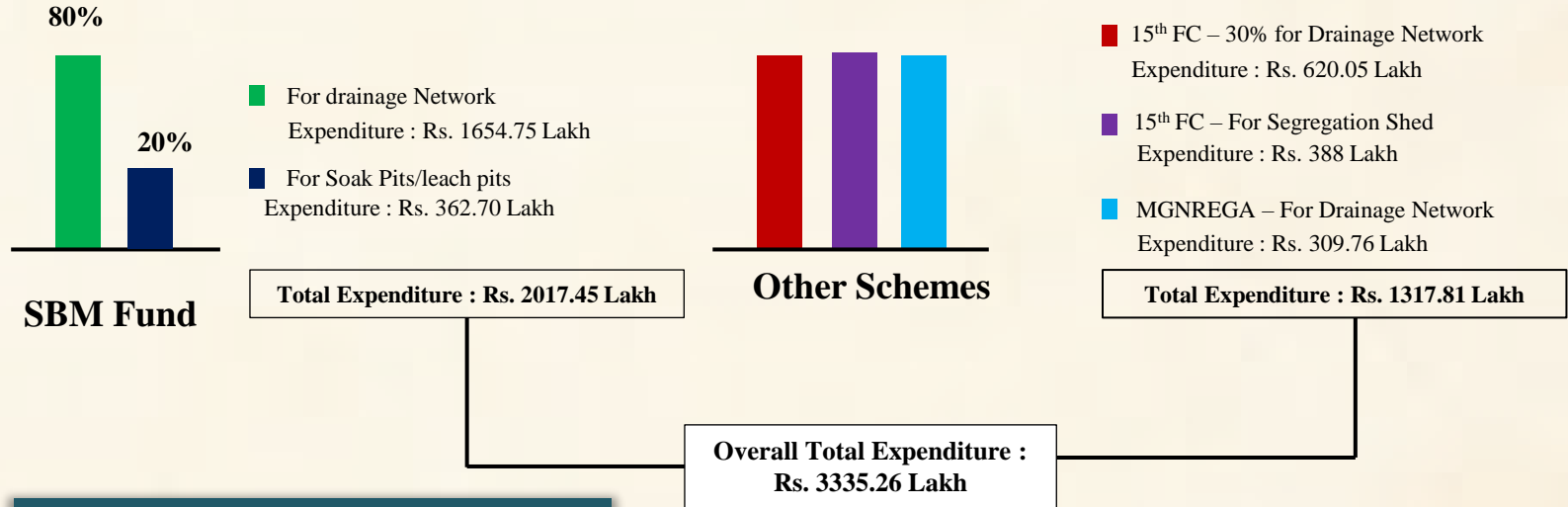


**Involvement of Transgender
community**



**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 than 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

0er
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

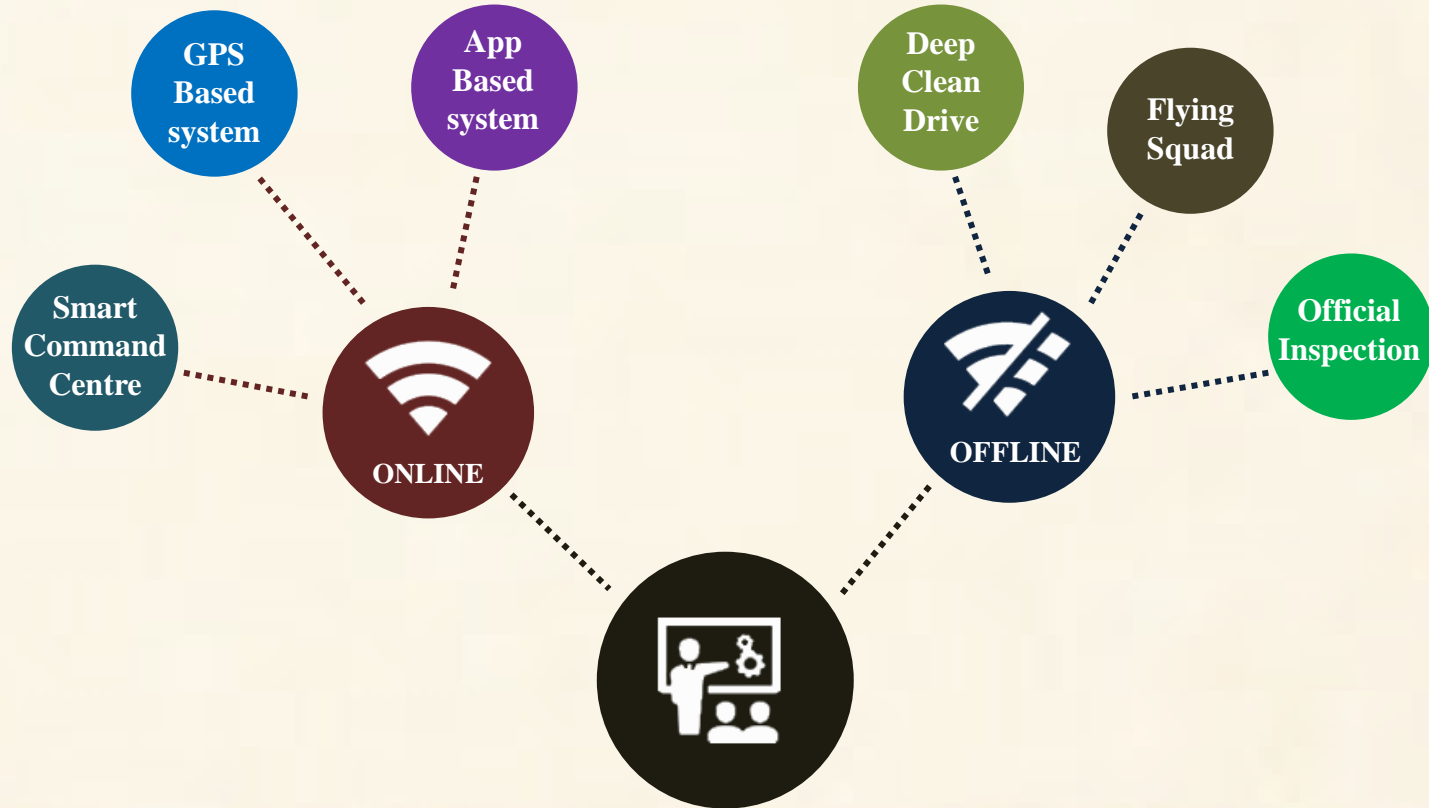
MoU with MPRRDA

MoU with MPRRDA and the waste Aggregators

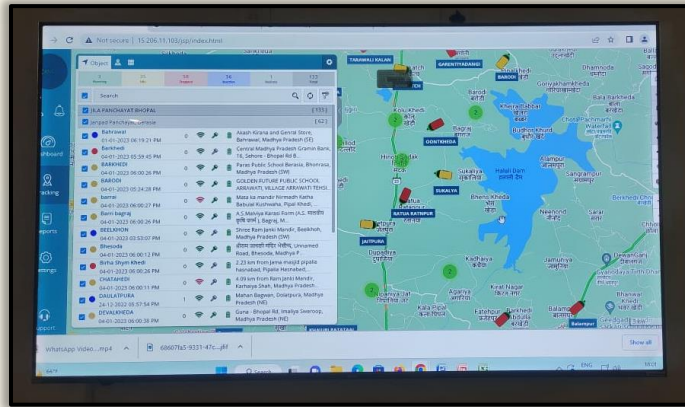
MoU with Nagar Palika

MoU with Nagar Palika

MONITORING



SMART CONTROL AND COMMAND CENTER

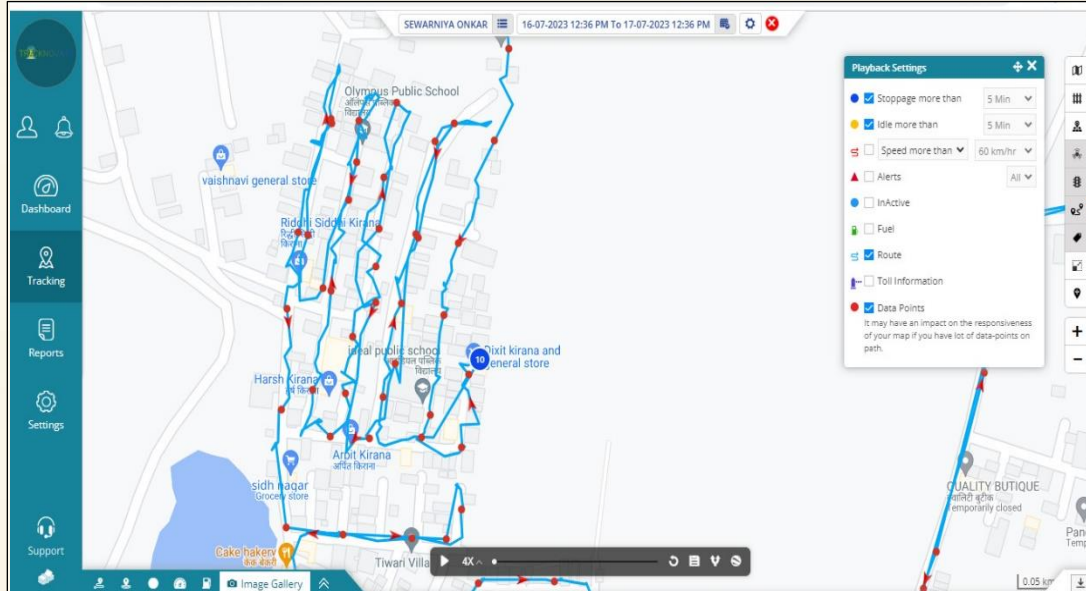


Smart Control & Command Center

- 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 through a dedicated application.
- Monitors Daily waste Processed at the MRF facility.

GPS TRACKING

GPS Based monitoring system



MRF CENTRE MOBILE APPLICATION

The screenshot displays the MRF CENTRE mobile application dashboard. The interface includes a sidebar menu with options like Dashboard, Reports, Cluster Panchayat, Panchayat, Entries, Add Entries, Routes, and Users. The main content area features a search bar, filters for Block (Phanda, Berasia) and Cluster (Gol, Bangrasia, Sukhi sewaniya, Khaj...), and a date range selector (11/09/2022 - 06/30/2023). Two primary data visualizations are shown: 'Waste Collected (Date Wise)' with a total of 61033 Kg and a line chart, and 'Garbage Type' with a donut chart and a table listing categories like Glass, Hair, Bones, Clothes, Paper, Mixed, Iron steel, and Plastic. A third visualization, 'Waste Collected (Clusters Wise)', shows a bar chart of collection over time for various clusters.

Waste Collected (Date Wise)
61033 Kg

Garbage Type

Garbage Type	Quantity
Glass	5037
Hair	2526
Bones	1167
Clothes	3029
Paper	32645
Mixed	6543
Iron steel	74
Plastic	10012

Waste Collected (Clusters Wise)
61033 Kg

Collection over time

Cluster	Quantity
Bangrasia	3845
Bangrasia	1063
Bangrasia	1918
Banhi Chankhad	1617
Gadaskala	2009
Gol	2515
Gung	2893
Hanahada	2301
Ikhadi Sadi	1496
Jamunur Kalu	4144
Kashim	1908
Korhanaya	863
Khajri Sadi	2842
Laka	1403
Lohi	1609
Mughaya Chahu	3697
Nayamadu	2788
Nazrabadi	2177
Rafhad Chahu	2590
Rukha Ratandhu	1542
Runkhu	1957
Sindhu	1521
Sonay	1809
Sukhi sewaniya	3171
Tarawli Kalu	1958

OFFLINE MONITORING : Flying Squads

Before



After



Gram Panchayat : Imaliya, Block : Phanda

Before



After



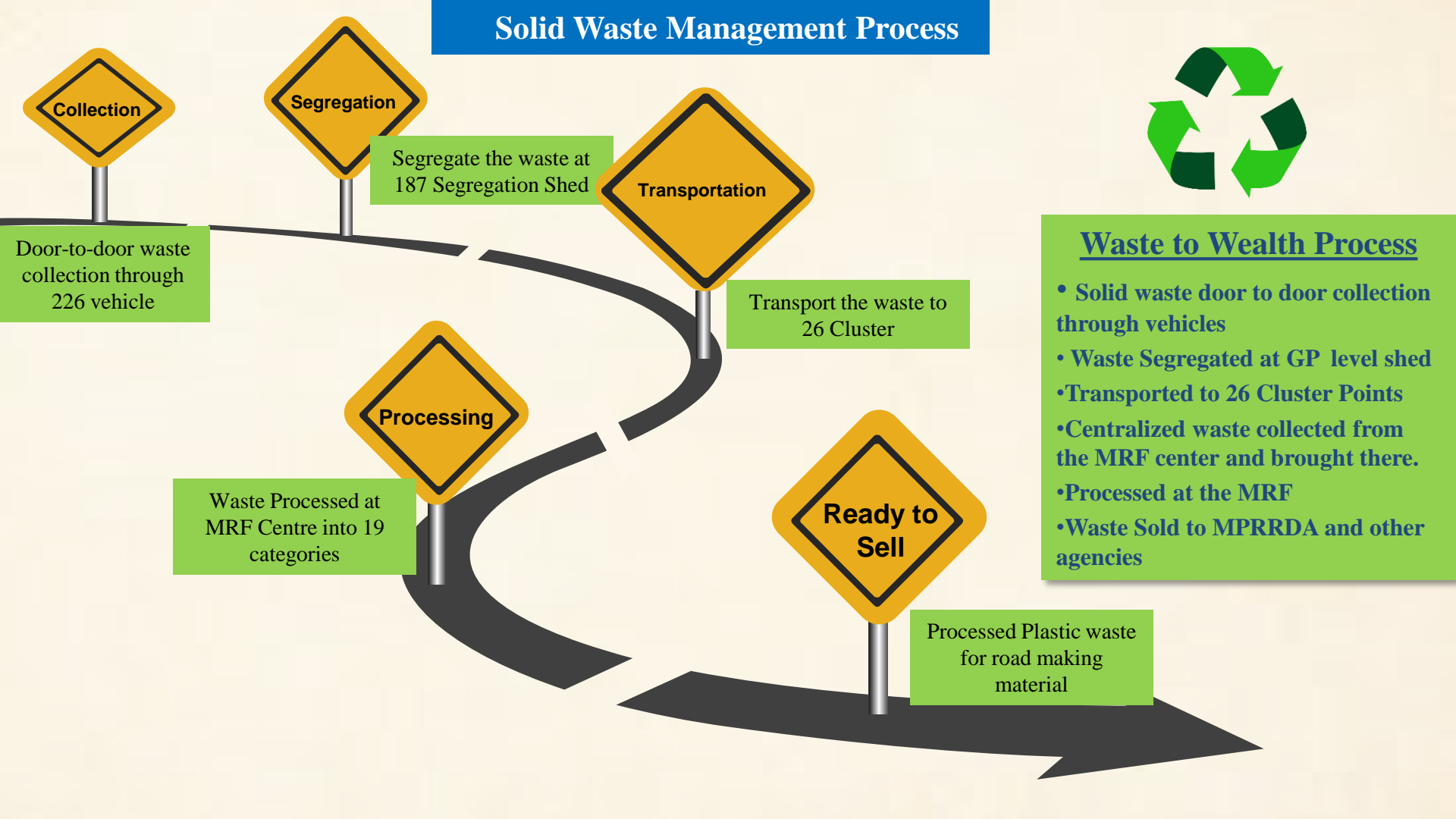
Gram Panchayat : Bangrasia, Block : Phanda

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



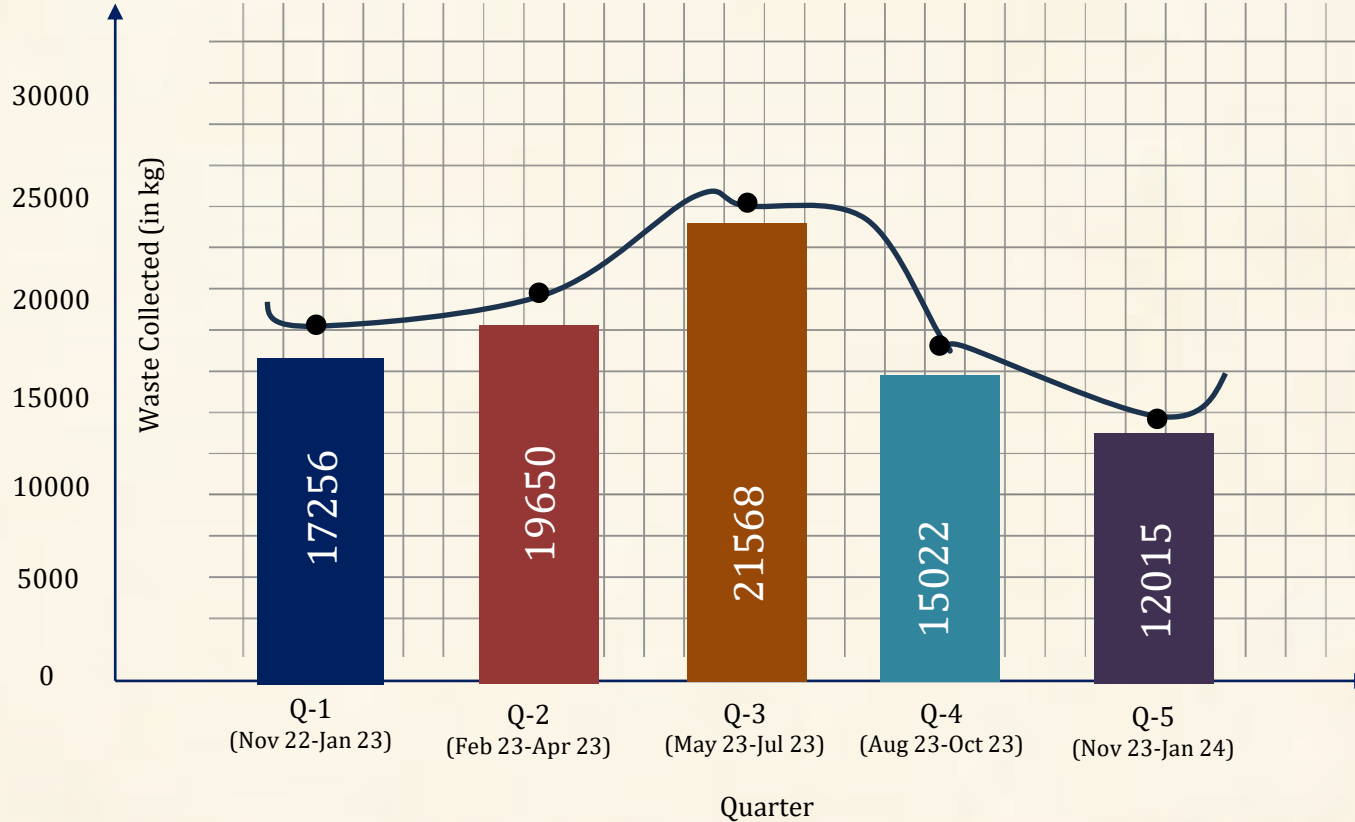
PROCESSING MACHINES USED

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



Waste collection Quarterly (from Nov 22 to Jan 24)

OUTCOMES



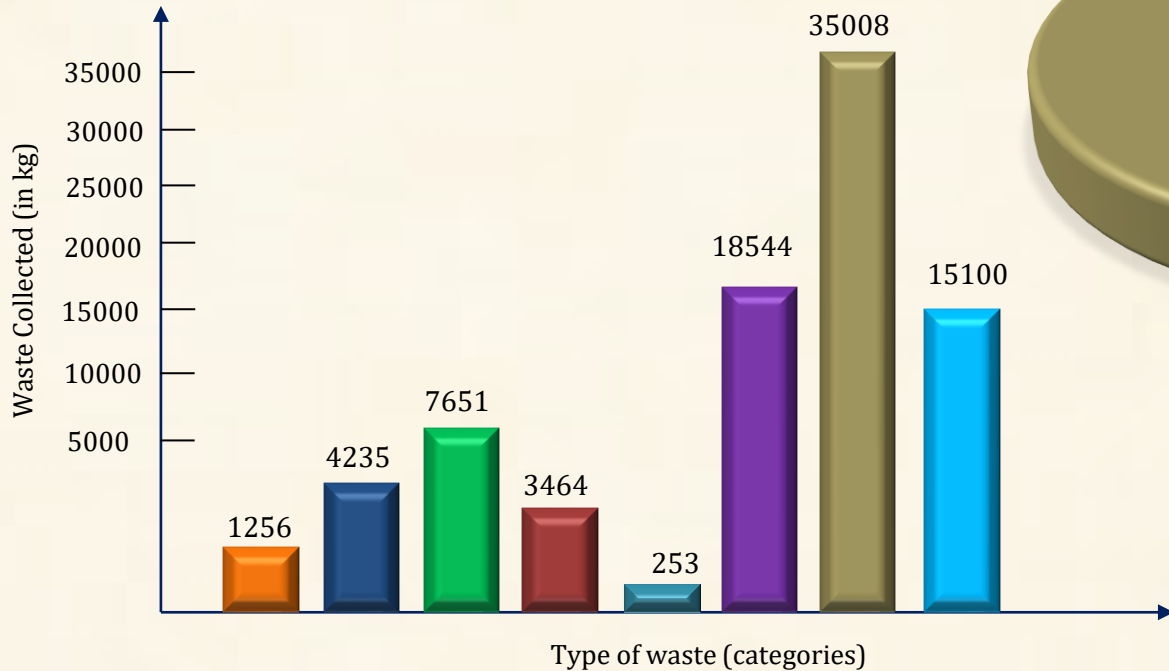
Total Waste Collected :
85.5 MT

Disposed Waste :
42.2 MT

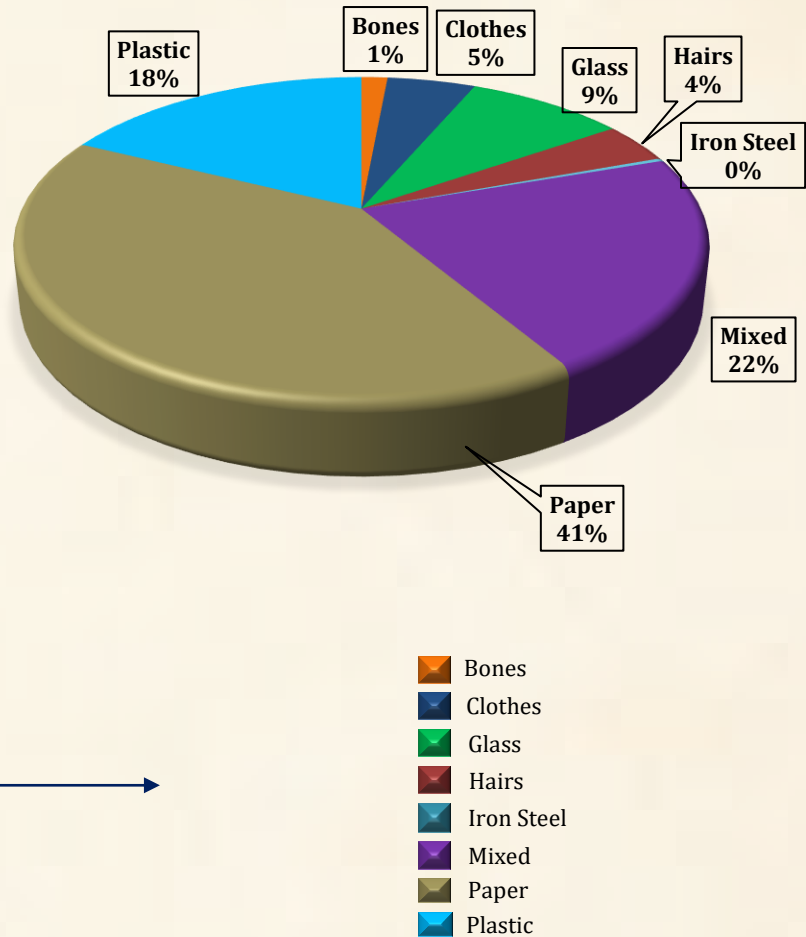
Total Processed Waste :
35.0 MT

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

As on date July

SBM Dashboard

SSG-2023 Toolkit

Peer Verification

District progress card

Village Self Assessment-Entry Status

Peer Verification- Entry Status

Front Runners

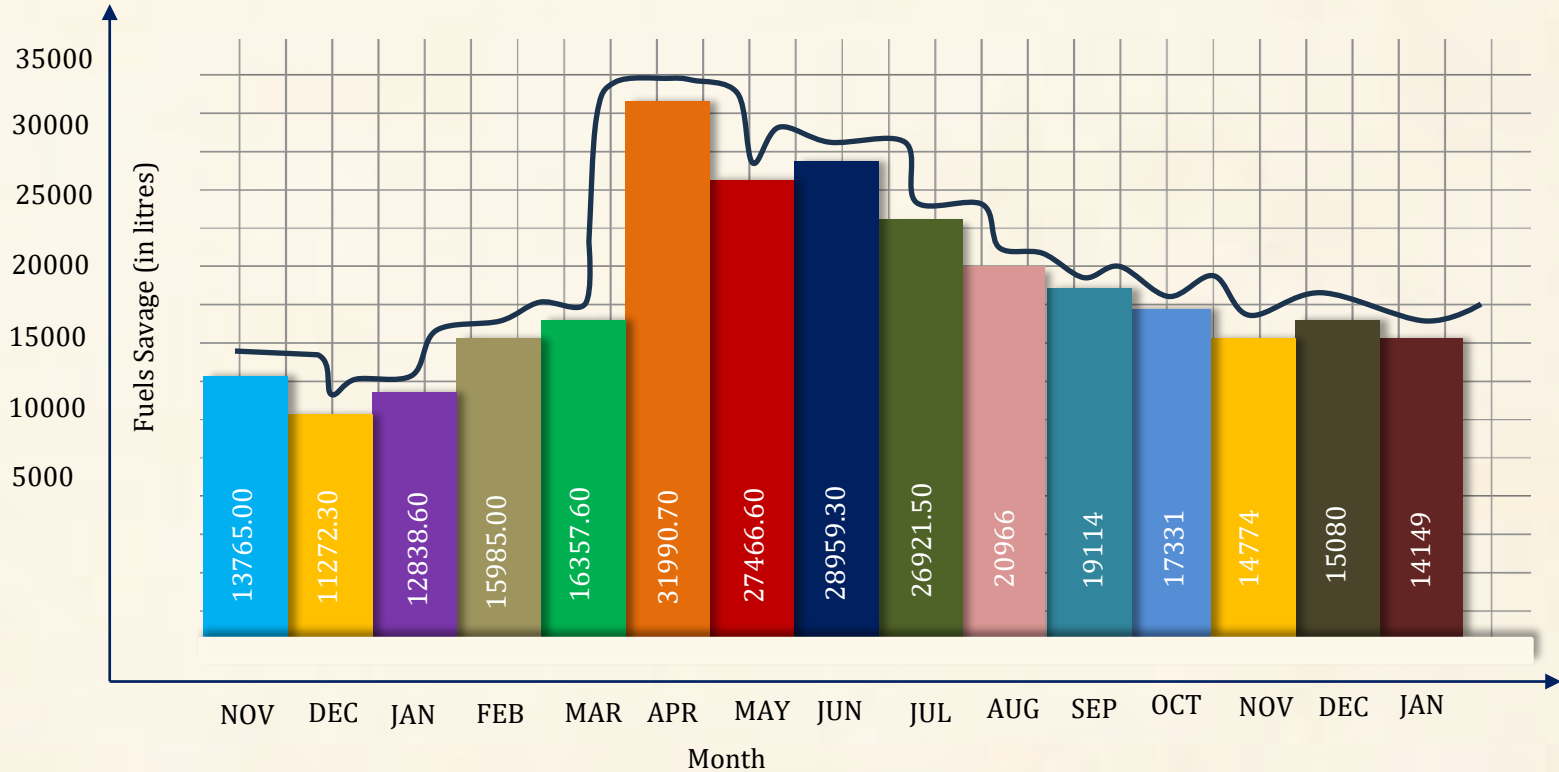


, ANUPPUR [Madhya Pradesh], BHOPAL [Madhya Pradesh], GANGTOK [Sikkim], MANGAN [Sikkim], Pakyong [Sikkim], Soreng [Sikkim], JAGTIAL [Telangana], KARIMNAGA

Fuel Savings through the Use of EVs

Total Petrol Savings
286971.10 liters

Total Fund Saving :
Rs. 2.86 Cr

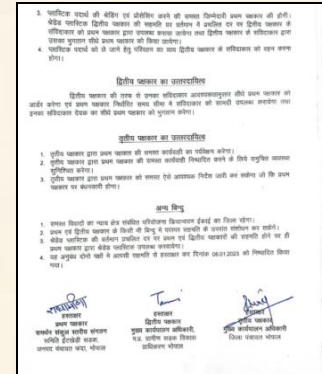


MoU with MP RRDA : Plastic Sale to Rural Roads Agency in MP



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



मध्य प्रदेश MADHYA PRADESH परचम सहमति अनुबंध पत्र BK 269946

यह अनुबंध आज दिनांक को प्रथम पक्षकार के रूप में सम्मन संकुल स्तरीय संगठन समिति, जनपद पंचायत फंडा (एमआरएफ सेंटर चंदासनकावा) तथा द्वितीय पक्षकार, नगर पालिका बैरसिया की ओर से मुख्य नगर पालिका अधिकारी, बैरसिया तथा तृतीय पक्षकार, मुख्य कार्यपालन अधिकारी, जनपद पंचायत बैरसिया, जिला बोधाल के मध्य निष्पादित की जाती है -

प्रथम पक्षकार - सम्मन संकुल स्तरीय संगठन समिति ईटखेडी सड़क, जनपद पंचायत फंडा, भोपाल (म.प्र.)

द्वितीय पक्षकार - मुख्य नगर पालिका अधिकारी, नगर पालिका परिषद बैरसिया

तृतीय पक्षकार - मुख्य कार्यपालन अधिकारी जनपद पंचायत बैरसिया

कार्य की पुष्टि

नगर पालिका बैरसिया अर्थात् बैरसिया के नगरीय क्षेत्र एवं समस्त वार्ड से प्राप्त होने वाला सूखा कचरा को अपने सेप्टीमिशन सेंटर व अलग-अलग प्रिंटवाकर प्रत्येक सप्ताह एमआरएफ सेंटर जनपद पंचायत फंडा में भेजा जाना सुनिश्चित करेंगे।

प्रथम पक्षकार

- सम्मन (एमआरएफ सेंटर चंदासनकावा) जनपद पंचायत फंडा द्वारा नगर पालिका बैरसिया से प्राप्त समस्त सूखे कचरे का रिपोर्ट संभाषित किया जायेगा।
- संस्था द्वारा प्राप्त सूखे कचरे का श्रेणी अनुसार जैसे- तोह, प्लास्टिक, रबर, पन्नी, कोच आदि का अलग-अलग गोंदवाड़ा बनाना सुनिश्चित करेंगे।
- समस्त सूखे कचरे की तुलना नगर पालिका द्वारा भव्यनिष्ठ प्रतिनिधि में सम्मल की जायेगी।
- वेधे गये कचरे की राशि नगर पालिका को दिया जाना होगा एवं आय-व्यय का रिपोर्ट प्रस्तुत करना होगा।
- समस्त सूखे कचरे का परिवहन द्वितीय पक्षकार द्वारा किया जायेगा।



मध्य प्रदेश MADHYA PRADESH द्वितीय पक्षकार BK 269945

- द्वितीय पक्षकार की तरफ से नगर पालिका बैरसिया क्षेत्र के सूखे कचरे का अलग-अलग संग्रहण किया जायेगा।
- नगर पालिका द्वारा प्राप्त सूखे कचरे को प्रतिनिधि निष्कास कर दूर कार्य को सम्पन्नित करेंगे।
- द्वितीय पक्षकार के पास वगैरे को स्थान कचरा उपस्था होगा वह किसी भी समय प्रथम पक्षकार को सूचित कर कचरा निष्कास करेंगे।

तृतीय पक्षकार

- तृतीय पक्षकार द्वारा प्रथम पक्षकार को समस्त कार्यान्वयन का पर्यवेक्षण करेंगे।
- प्रथम एवं द्वितीय पक्षकार के किसी भी विवाद में परचम सहमति को उपरोक्त संकेतन कर सकते।
- प्रथम पक्षकार अधिकार संकेतन प्रवर्ति करे को तृतीय पक्षकार को उपस्था करवाये।
- तृतीय पक्षकार द्वारा प्रथम पक्षकार को समस्त पैके निर्देश जारी कर सकते जो को प्रथम पक्षकार पर बंधनकारी रहेगा।

अन्य बिन्दु

- समस्त विवादों का मध्य क्षेत्र संबंधित परिधानन क्रियान्वयन इकाई का जिला रहेगा।
- प्रथम एवं द्वितीय पक्षकार के किसी भी विवाद में परचम सहमति को उपरोक्त संकेतन कर सकते।
- प्रथम पक्षकार अधिकार संकेतन प्रवर्ति करे को तृतीय पक्षकार को उपस्था करवाये।
- यह अनुबंध दोहो पक्षों में अंतीम बंधनकारी से इस्तेमाल करे दिनांक को निष्पादित किया गया।

Handwritten signatures and stamps of the parties involved, including the Municipal Corporation of Berrasia and the District Collector's office. A date stamp reads 'Dt 06/06/2023'.

Consent Order

M.P. Pollution Control Board - Bhopal
E - 5, Arera Colony
Bhopal 46
Tel: 0755-2466392, 4276342
Bhopal

RED-SMALL

CTE-Fresh

CORSENT NO. ***

PCB ID: 153304

Consent No: CTE-113145

Outward No: 24427, 27/05/2023

To,
M/s. Samartha Sankal Starta Sansthan
 Inkhedi, Sadak,
 Near Canoy School, Berrapur
 Berrasia Road,
 Dist: Bhopal (M.P.)

Subject: Grant of Consent to Establish under section 25 of the Water (Prevention & Control of Pollution) Act, 1974 under section 21 of the Air (Prevention & Control of Pollution) Act, 1981

Ref: Your Consent to Establish Application Receipt No. 1261035 Dt. 04/05/2023.

Without prejudice to the powers of this Board under section 25 of the Water (Prevention & Control of Pollution) Act, 1974 under section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and without relieving your responsibilities under the said Acts in any way, this is to inform you that this Board grants Consent to Establish for setting up of an industrial plant/activities at Inkhedi, Sadak, Near Canoy School, Berrapur Berrasia Road, Dist: Bhopal (M.P.)

SUBJECT TO THE FOLLOWING CONDITIONS :-

- Location: Inkhedi, Sadak, Near Canoy School, Berrapur Dist: Bhopal (M.P.)
- The capital investment in lakhs: Rs. 30 Lakh
- Product & Production Capacity:

Product	Production Capacity
All Types Plastic Scraps (Shredded & Bailed Plastic from Scrap)	2000 MT

The consent (for operation) as required shall be granted to your industry after fulfillment of all the conditions mentioned above. For this purpose you shall have to make an application to this Board in the prescribed Form at least two months before the expected date of commissioning of your industry. The applicant shall not operate the unit without obtaining consent for operation from the Board and shall not bring in to use any set for the discharge of effluent and gaseous emission.

Conditions:-

- Conditions under Water Act
- Conditions under Air Act
- General conditions

Signature Not Verified

Digital Signature of: BRAJESH SHARMA, E.E.

Date: 27/05/2023 12:29:45 AM

(Organic Authentication on AADHAR from UIDAI Server)

BRAJESH SHARMA
Regional Officer

NOC from Pollution Control Board for establishment of MRF Centre

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 eMonitoring 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!