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# Biodegradable Waste Management

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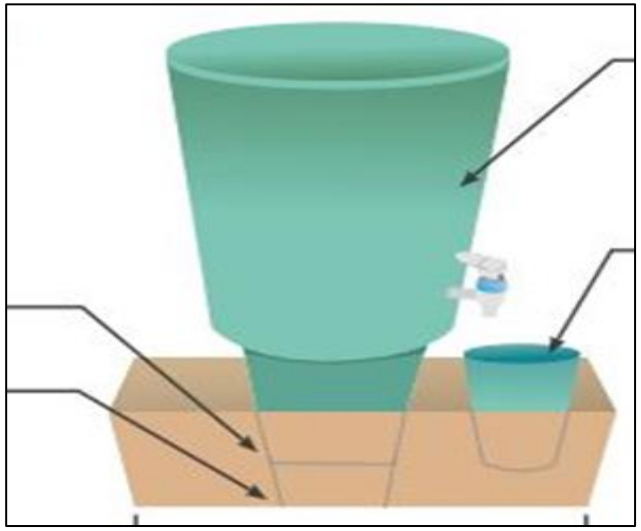
# Composting Technologies – HH Level

Tripot Composting

Pipe Composting



Portable Bin / Bucket Composting

Kitchen Bin Composting

Portable Household Bio Bin Composting

Ring Composting

# Composting Technologies – Community Level

Pit Composting

Pile Composting

NADEP composting

Windrow Composting

Rotary Drum Composting

Vermi composting

# Some Best practices

# 1. Management of solid waste in *Bohar 1 GP, West Bengal*

**Initiatives taken:**

- Panchayat taking actions to make Bohar 1 a model village in waste disposal practices
- GP population approx. 12000, households 3300
- Initially, GP **constructed segregation shed, purchased 4 battery operated vehicles for door to door waste collection** from 2200 Households
- **Three pit composting units** constructed for BWM.
- **Manures produced from treated waste, sold to farmers**
- Dry waste sold to authentic recyclers, amount received used for running the solid waste plant, Initial Capital Cost : 13 - 15 lacks

**Key outcomes:**

- Employment generation for local youth & SHGs
- Hygienic environment for workers
- Effective SWM resulting in zero waste to landfill
- Proper SWM helping GP to achieve visual cleanliness
- **Use of manure produced from composting has helped to reduce use of chemical fertilizers making the soil more fertile**




# 2. *Madan Heri, Punjab* - Successful venture for Solid Waste Management

- Madan Heri,  Kharar block of Sahibzada Ajit Singh Nagar district adopted SLWM Plan.
- **Blue and green dustbins were distributed to the households for segregation of waste**
- A dedicated waste collection vehicle with a kit including **medical ointments, gloves, jacket and cap was** handed over to the appointed waste collector.
- **3 composting pits (290 HH level & 17 in common areas) constructed in 1500 sq. ft. plant under MNREGS and village funds**
- **Broken the reproduction chain of mosquitoes and kept the vector-borne diseases in check**

# 3. *Kali Billod GP*, Madhya Pradesh: successful SWM by engaging SHGs

- Kali Billod has a population of around 40,000 people and about 3800 houses
- Daily 250 kg dry waste and 2 tonnes wet waste generated in the GP
- Panchayat realized the importance of waste management: entered into an agreement with **SHG group for management of waste**
- An **NRLM SHG of five women selected & trained for waste management drive**
- SHG group starts at 6.00 am in groups of two- collects and segregates waste. They makes a total 4 rounds/day.
- **Biodegradable waste is composted at community composting unit, supervised by one supervisor**
- The GP has imposed a spot fine for non-segregation of waste by HHs.

<u>Financial Sustainability</u>

- Dry waste **sold to recyclers** every 15 days
- Monthly 3,000 kg compost generated from treated waste, sold at 5 Rs. Per kg.
- **GP retains 10 % of the collected amount & transfers the remaining 90 % amount to the SHG**.

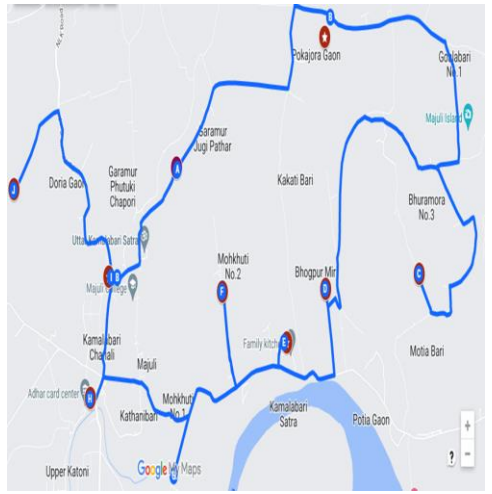
***Source**: Biodegradable waste management manual, MoJS, GoI (2021)*

# 4. *Kamalabari village, Assam*: showcases cleanliness impacts of Solid Waste Management

- Gram Panchayat Kamalabari village, District Majuli

  Population: approx. 10600 and households: 1987 revenue villages: 9& habitations: 34

- Need for cleanliness motivated the GP to take up sanitation initiatives
  - Purchase of 1 Battery Operated Vehicle and 2 tri-cycles for collection
  - Collection of waste twice a week from 1987 HHs
  - Construction of **9 small sheds for storage and 1 big segregation shade**
  - Installation of **100 Community level dustbins**
  - **7 compost units** constructed for community level treatment of biodegradable waste
- The compost from compost units is sold to farmers @10 Rs/ KG or PHED
- The village looks cleaner with **no open dumping of waste**




Route map

community level dustbins

Collection and transportation

Community level composting units

# 5. Establishing benchmark in Biodegradable Waste Management:
## *Pratap Aditya Nagar Eco Park, Kakdweep, West Bengal*

- Pratap Aditya Nagar, WB has emerged as a role model for other GPs and villages by efficiently managing biodegradable waste
- Previously, all waste in the GP dumped in water bodies resulting in numerous health issues.
- The GP took following initiatives-
  - Purchase of **15 collection vehicles** (2 big vans, 10 paddle tricycle, 3 E-Rickshaws)
  - **14 waste collectors, 20 segregation workers, 1 security guard** engaged in daily operations of SWM unit
  - Construction of **25 cubic meter capacity biogas plant** for treatment of Biodegradable waste
- Annual revenue of **1,82,322/-** through sell of manure


Biogas Plant of 25 Cubic Meters, Pratap Aditya Nagar Eco Park

**Outputs:**

- ✓ Utilization of biogas for operational needs of SWM unit - **50% reduction in electricity bill**, (**approx. Rs. 30 k to Rs. 15 k)**
- ✓ Use of treated wastewater from the **Bio gas plant for cleaning purposes**- conservation of freshwater
- ✓ **100% of bio degradable waste effectively managed**
- ✓ Overall achievement of visual cleanliness

# Issues concerning BWM

i. Low awareness on **segregation at source**

ii. **Technically inappropriate waste management assets and practices-** No shed for NADEP, design issues - excess moisture content, inadequate slope at base of the composting beds, etc.

iii. **Lack of involvement of community** in planning/decision making process which results in low accountability and involvement of the community

iv. Provision for **segregated waste in the vehicles** is often not available

v. **Safety and dignity issues of sanitation workers : Need to sensitize employers**

vi. **Low involvement of school students and youth** in IEC activities

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# Thank you!