Transforming India's Waste Management

SMI Japan



Revolutionizing waste management across INDIA

MWM REACTOR from SMI Inc. Japan. (Multi Waste Management)
Japanese Technology for a Cleaner, Greener Future

HRDS INDIA
The Highrange Rural Development Society

ABOUT HRDS INDIA

Empowering Communities, Protecting Our Environment



HRDS INDIA is a visionary NGO dedicated to uplifting vulnerable populations across India. Our multifaceted approach tackles pressing social issues:

- Sheltering the homeless
- Championing environmental protection
- Empowering women and youth
- Improving sanitation and health
- Breaking educational barriers
- Implementing latest technologies from world leading companies for the development of the country

Through our extensive social engagement, we've identified environmental degradation as a critical factor affecting public health and longevity. This realization has propelled us to take decisive action in ensuring environmental sustainability nationwide.

OUR INSPIRATION



Swachh Bharat Mission

Swachh Bharat Abhiyan was started by Prime Minister Narendra Modi.

It is a national level campaign aimed at cleaning the streets, roads and infrastructure and keeping the garbage clean. This campaign was started on 2nd October 2014. Father of the Nation Mahatma Gandhi freed the country from slavery, but his dream of 'Clean India' remained unfulfilled. Mahatma Gandhi gave an excellent message to the nation by providing education related to maintaining cleanliness to the people around him.

Swachh Bharat Mission aims to reduce or eliminate open defecation through the construction of individual and cluster.

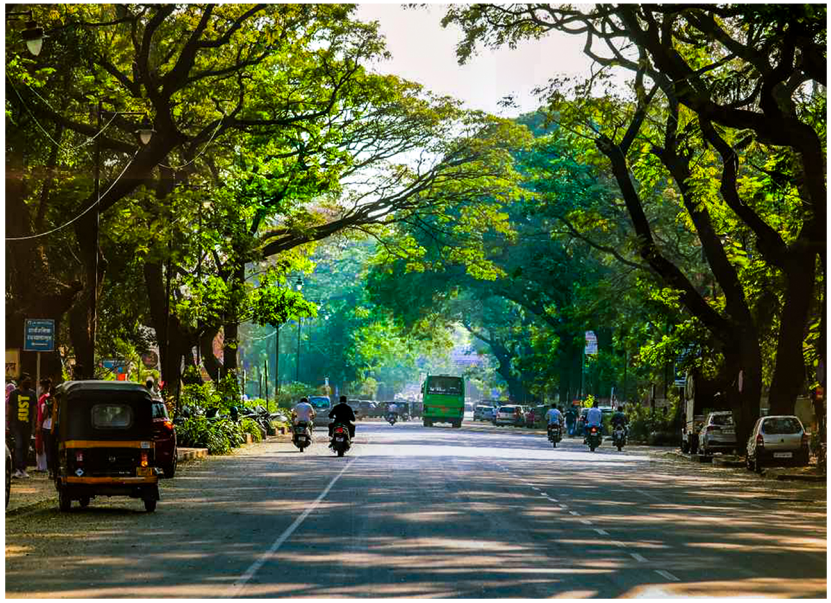
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Hon'ble Prime Minister Narendra Modi cleaning ground with school students during Clean India Campaign

OUR VISION

A Cleaner, Greener India





At HRDS INDIA, we envision an India where:

- Every piece of waste is transformed into a reusable organic product
- Cities are clean, green and healthy
- Environmental sustainability is a reality, not just a goal
- Innovative technologies drive ecological balance

To realize this vision, we have collaborated with SMI Inc., a pioneering Japanese company, to bring cutting-edge waste management technology to India. Together, we are introducing the Multi-Waste Management Machine – a revolutionary approach to waste treatment that promises to transform India's environmental landscape. We believe that with the right technology and collective will, we can transform India's waste management landscape, creating a brighter, cleaner future for generations to come.

We're committed to turning this vision into reality, one city at a time.

INTRODUCING MULTI WASTE MANAGEMENT MACHINE JAPANESE INNOVATION

Japanese Innovation for India's Environmental Future

In our quest for a sustainable solution, HRDS INDIA has forged a partnership with SMI Inc., a pioneering Japanese technology company. This collaboration brings state-of-the-art waste management technology to India, marking a new era in our fight against pollution. Together, we're introducing a game-changing technology to India: the Multi Waste Management Machine.

The Multi Waste Management (MWM) is a revolutionary waste processing system that:

- Processes mixed solid waste, including plastic, medi-waste and E-waste
- Converts waste into non-toxic, soil-like Product
- Operates with low energy consumption
- Non-incineration organic waste treatment
- Utilizes subcritical water reaction for hydrolysis
- Hydrolysis and high-temperature, high-pressure processing
- Converts waste into valuable resources
- Environmentally friendly with no dioxin or CO2 emissions
- Produces no harmful emissions
- Features compact design and automated operation
- Versatile – processes all types of waste except glass, iron, and stone





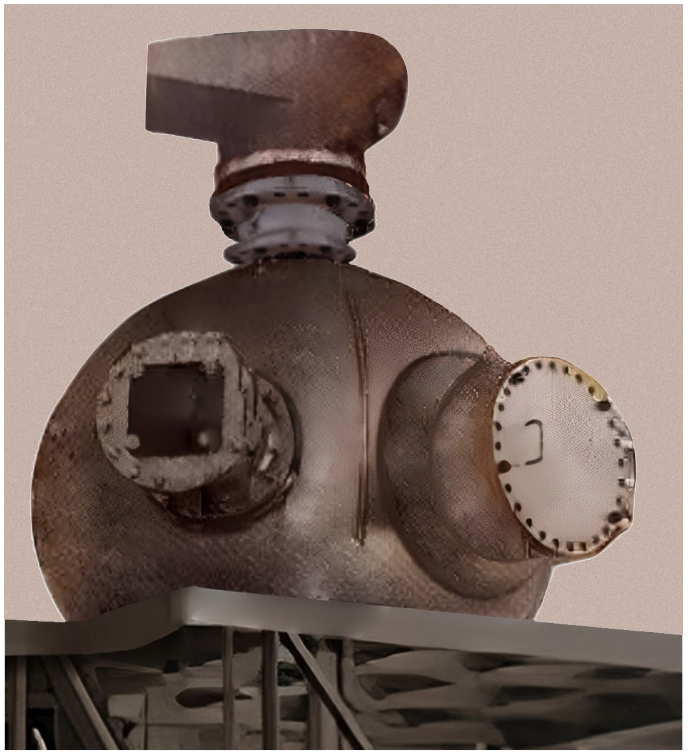
This versatile machine is the cornerstone of our waste management strategy.

" EVERY PIECE OF WASTE IS A RESOURCE WAITING TO BE UNLOCKED."

HRDS INDIA

HOW IT WORKS

Transforming Waste into Resource



1. Collection => Organic waste is gathered from various sources
2. Pre-processing => Waste is sorted and prepared for treatment
3. Hydrolysis => Subcritical water reaction breaks down complex molecules
4. High-Pressure Treatment => Further decomposition and sterilization
5. Resource Recovery => Production of valuable materials (fertilizer, feed, fuel)

The Multi Waste Management Machine employs cutting-edge sub-critical water technology to transform waste:

The Science Behind the Magic

1. Mixed waste is collected and fed into the machine.
2. The waste is subjected to high-temperature, high-pressure conditions just below the critical point of water.
3. This process breaks down complex organic molecules into simpler, non-toxic compounds.
4. The result is a sterile, Soil like product safely used for several applications and also as organic manure.
5. Basic sorting removes glass, iron, and stones.
6. Mixed waste is loaded into the Multi Waste Management Machine.
7. Molecular level process is known as Hydrolysis
8. Waste is converted into a non-toxic, soil-like product.
9. The resultant material can be used for agriculture, construction, and more.

The entire process is efficient, clean, and environmentally friendly

WIDE RANGE OF TREATABLE WASTE









Versatile Solutions for Diverse Waste Streams

Multi Waste Management Machine can effectively process various types of organic waste, including:

- Food waste from households and businesses
- Agricultural residues and crop waste
- Livestock manure and slaughterhouse waste
- Sewage sludge
- Medical and pharmaceutical waste
- Certain types of industrial organic waste

BENEFITS FOR INDIAN CITIES

Implementing the MWM technology across India will:

- Drastically reduce landfill waste
- Improve air and water quality
- Create new resources from waste
- Reduce greenhouse gas emissions
- Promote circular economy principles
- The quality of life and total health will be at par with developed countries







" OUR GOAL IS NOT JUST TO MANAGE WASTE, BUT TO MINIMIZE IT."

HRDS INDIA

Waste Management Statistics

1. Waste Generation

India generates approximately 62 million tonnes of waste annually, with an average daily waste generation of 147,613 tones.
The per capita waste generation in Indian cities ranges from 200 to 600 grams per day.

2. Waste Composition

Organic waste constitutes about 50% of the total waste generated, followed by recyclables (17%), inert materials (30%), and hazardous waste (3%).

3. Waste Management Infrastructure

Only about 75-80% of the waste generated is collected, and a mere 22-28% is processed and treated.
India has around 1,210 waste processing plants, with a capacity to process 33,900 tonnes per day (TPD), which is insufficient to manage the waste generated.

4. Waste Management in Urban India

Urban areas generate the majority of waste; metropolitan cities alone generate around 31 million tonnes of waste annually.
Only 60% of waste generated in urban areas is collected, and merely 15% is processed.

5. Plastic Waste Management

India generates about 3.3 million metric tonnes of plastic waste annually, with an average daily generation of 26,000 tonnes.
Only 60% of plastic waste is recycled, with the remaining 40% ending up in landfills or littered.

6. E-waste Management

India is the third-largest e-waste generator in the world, with an estimated annual generation of 3.2 million metric tonnes.
Only 1.5% of e-waste is recycled through formal channels, posing significant environmental and health risks.

7. Biomedical Waste Management

India generates around 600 tonnes of biomedical waste per day, with the majority coming from healthcare facilities.
About 415 tonnes of this waste is incinerated, while the rest is treated through autoclaving or deep burial.

8. Waste Management Regulations

The waste management sector in India is governed by various regulations, including the Solid Waste Management Rules (2016), Plastic Waste Management Rules (2016), E-waste Management Rules (2016), and Biomedical Waste Management Rules (2016).

HRDS INDIA is committed to improving waste management practices, promoting waste segregation at source, and increasing recycling rates. By adopting sustainable waste management strategies, we can strive for a cleaner, greener India.

THE CHALLENGE

India's Waste Management Crisis:

India, our beloved homeland, faces a monumental challenge:

- Daily waste generation: Over 150,000 metric tonnes
- Annual waste generation: Approximately 62 million tonnes
- Only 43% of waste collected
- Mere 11.9% treated
- 31.1% dumped in landfills

Despite the valiant efforts of state governments and local municipalities to collect waste door-to-door, the ultimate solution – complete recycling or destruction – remains elusive. The practice of dumping waste in designated areas only exacerbates health problems and environmental degradation.

The consequences are dire:

- Polluted air and water bodies
- Loss of biodiversity
- Climate change acceleration
- Overflowing landfills
- Deteriorating air quality
- Increasing health hazards

It's time for a revolution in waste management.











Output is non-toxic solid soil like product

Can process all types of waste

" TOGETHER, WE CAN CREATE A WASTE-FREE INDIA. JOIN HRDS INDIA IN THIS NOBLE MISSION."

HRDS INDIA

OUR COMMITMENT TO SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Our vision aligns closely with several UN Sustainable Development Goals:

SDG 3 : Good Health and Well-being
SDG 6 : Clean Water and Sanitation
SDG 11: Sustainable Cities and Communities
SDG 12: Responsible Consumption and Production
SDG 13: Climate Action











VALUABLE OUTPUTS & APPLICATIONS

From Waste to Wealth

The organic product produced by the Multi Waste Management Machine has valuable outputs and numerous applications:

1. High-Quality Organic Fertilizer:
   - Improves soil health and crop yields
   - Combines immediate and slow-release nutrients

2. Sterile Animal Feed:
   - Safe, nutritious feed for livestock
   - Addresses concerns about disease transmission

3. Bioenergy:
   - Solid fuel for power generation

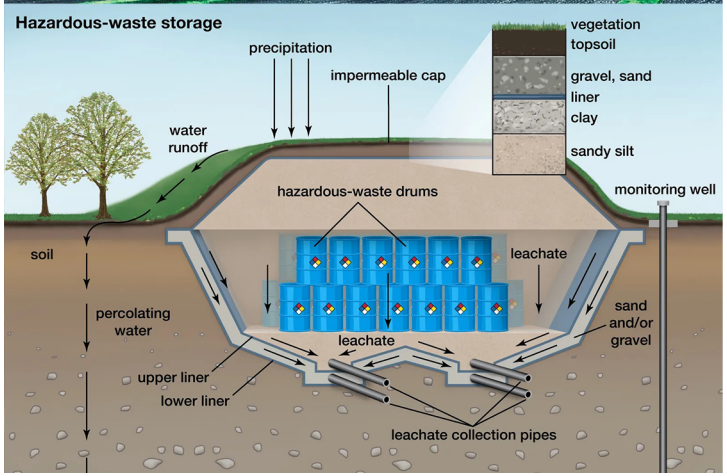
4. Detoxified Materials:
   - Safe disposal of hazardous organic waste
   - Potential for further resource recovery

By transforming waste into valuable resources, we're not just solving a problem – we're creating opportunities.

From Waste to Resource: Endless Possibilities







TECHNICAL SPECIFICATIONS

Power Packed Performance

Model Specifications

MWM-2 (2m³)	MWM-6 (6m³)
Size of the Reactor: 2m³	Size of the Reactor: 6m³
L:7.55m, W:2.0m, H:3.7m	L:9.4m, W:3.0m, H:4.3m
Standard Output per day (10 batches / day)	Standard Output per day (10 batches / day)
Mixed urban waste: 8 tons (for cities of 10,000 people)	Mixed urban waste : 24 tons (for cities of 30,000 people)
Sewage Sludge: 14 tons (for cities of 100,000 people)	Sewage sludge : 42 tons (for cities of 300,000 people)

Operation Specifications

Operation hours	24 hours
Operation hours per batch	1.5 hours
Capacity	6m³
Throughput	45m3
Number of batches per day	16
Specific Gravity	0.4
Output per day	72m³/D
Residual Weight per day	20t/D

Note: These specifications are for reference only. Actuals may change as per the requirements

Transforming Waste Management Nationwide

IMPLEMENTATION PLAN

From Vision to Reality: Our Roadmap

HRDS INDIA proposes a phased approach to revolutionize waste management across India:





Phase 1: Research and Planning (1-2 months)

- Conduct comprehensive waste audits in target cities
- Identify optimal locations for **Multi Waste Management Machine** installation
- Develop partnerships with local municipalities and waste management authorities

Phase 2: Pilot Implementation (3-6 months)

- Install **Multi Waste Wanagement Machine** in 5 major cities
- Train local operators and maintenance personnel
- Monitor and analyze performance metrics

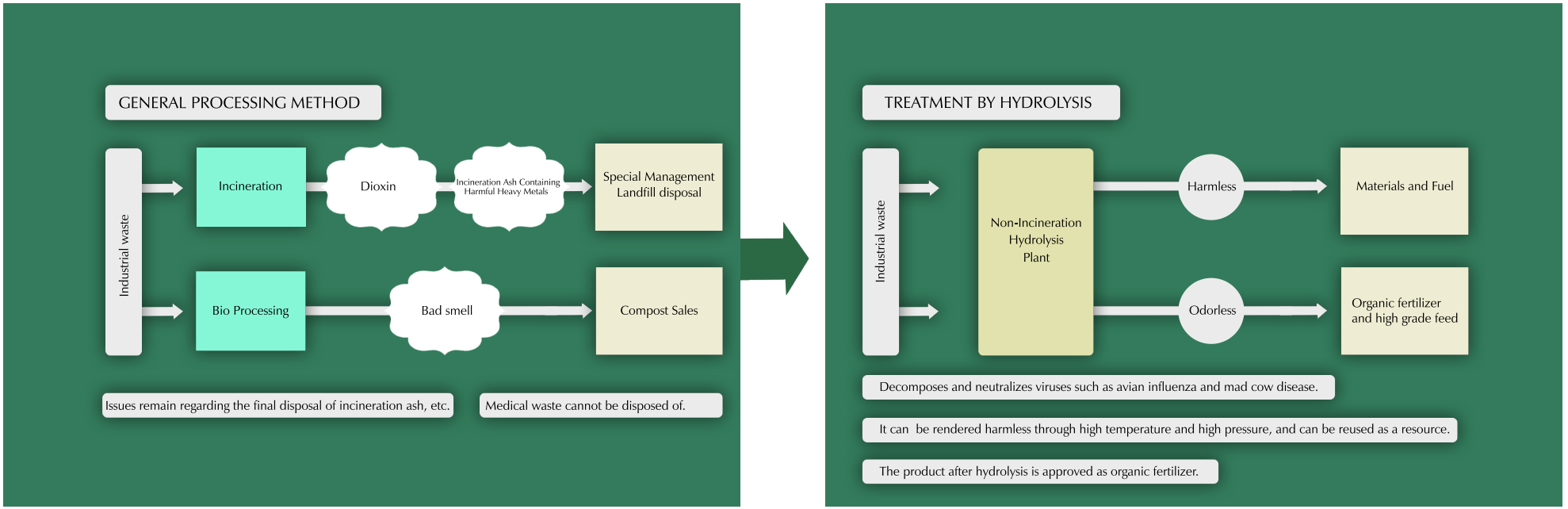
Phase 3: Nationwide Rollout (6 months-3 years)

- Expand installation to 100 cities across India
- Establish a network of waste collection and processing centers
- Supply maximum quantity of organic manure with help of major fertilizer manufacturing companies

Phase 4: Integration and Optimization (3-5 years/Ongoing)

- Continuously improve processes based on data and feedback
- Integrate MWM technology with smart city initiatives
- Promote public awareness and participation in sustainable waste management

DIFFERENCE BETWEEN GENERAL TREATMENT & HYDROLYSIS TREATMENT



SOCIAL IMPACT

Creating a Safer, Cleaner India

Environmental, Health Benefits

Implementation of MWM technology across India will lead to:

- Diversion of organic waste from dumps
- No incineration means no harmful emissions
- Prevention of leachate contamination
- Complete sterilization of pathogens
- Production of high-quality, safe fertilizers
- Lower greenhouse gas emissions from waste sector

Empowering Communities, Creating Opportunities

- New roles in waste collection, machine operation, and recycled material industries
- Reduced exposure to waste-related diseases
- Increased awareness of environmental issues and sustainable practices
- Cleaner neighborhoods fostering social cohesion
- New revenue streams from recycled materials

Turning Waste Management into an Economic Opportunity

Economic Advantages

The HRDS INDIA's MWM Project offers numerous economic benefits:

1. New opportunities in waste collection, processing, and product development
2. Increased crop yields and reduced fertilizer costs
3. Local, renewable energy sources
4. Fewer waste-related illnesses
5. Development of new industries based on recovered resources







WHY CHOOSE HRDS INDIA & MULTI-WASTE MANAGEMENT MACHINE?

Unparalleled Expertise, Proven Technology

1. **Japanese Innovation:** Cutting-edge technology backed by decades of research
2. **Patented Solution:** 8 global patents
3. **Environmentally Sound:** Zero harmful emissions, low energy consumption
4. **Versatile:** Processes various types of waste
5. **Compact:** Requires only 2000 sq. ft. of land
6. **Scalable:** Suitable for cities of all sizes
7. **Economically Viable:** Creates value from waste
8. **Supported by HRDS INDIA:** Leveraging our extensive experience in social development









" FROM LANDFILLS TO LIVELIHOODS: TRANSFORMING WASTE INTO OPPORTUNITIES."

HRDS INDIA

CASE STUDIES & PROJECTIONS

Transforming Delhi's Waste Management

Problem:

- Daily waste generation: 10,500 tones
- Only 85% collected, 15% treated
- Severe air pollution and health issues

Solution:

- Installation of 150 Multi-Waste Management Machines.
  With the capacity of 6 tones per hour
- Daily processing capacity: 9000 tones (total 12 cycles in a day)





Results (Projected):

- 70% reduction in landfill usage
- 40% decrease in waste-related air pollution
- Creation of 500 new green jobs

National Impact Projections (5-Year Plan):

- 1000 Multi-Waste Management Machines installed across India
- Daily waste processing capacity: 50,000 tones
- Annual reduction in landfill waste: 7.3 million tones
- Green jobs created: 20,000+
- Potential annual savings in waste management costs: ₹5000 crore

BENEFITS FOR INDIA

This is not a dream – it's our commitment to India's future

The implementation of Multi Waste Management (MWM) Machine across India will bring about a paradigm shift in waste management:

1. Environmental Protection:
   - Significant reduction in landfill usage
   - Decreased soil and water pollution
   - Improved air quality in urban areas
2. Health Improvements:
   - Reduction in waste-borne diseases
   - Cleaner living environments for communities
   - Enhanced overall public health
3. Economic Opportunities:
   - Creation of green jobs in waste management sector
   - Potential for selling recycled materials
   - Reduced costs for waste transportation and landfill maintenance
4. Sustainable Agriculture:
   - Use of processed waste as soil enhancer
   - Reduction in chemical fertilizer dependence
   - Promotion of organic farming practices
5. Urban Development:
   - Cleaner cities attracting more investment and tourism
   - Improved quality of life for urban residents
   - Enhanced India's image on the global stage







" WASTE MANAGEMENT IS NOT JUST ABOUT CLEANING, IT'S ABOUT CARING THE ENVIRONMENT."

HRDS INDIA





JOIN US IN THIS GREEN REVOLUTION

HRDS INDIA invites you to be part of this transformative journey towards a cleaner, healthier India. Together, we can:

- Revolutionize waste management practices
- Create sustainable communities
- Protect our environment for future generations
- Position India as a global leader in green technology

Your support can make a difference:

- Partner with us in implementing MWM technology
- Spread awareness about sustainable waste management
- Advocate for policies that promote innovative environmental solutions

Let's turn our waste into wealth and our challenges into opportunities!



" EVERY PIECE OF WASTE RECYCLED IS A STEP TOWARDS A GREENER INDIA."

HRDS INDIA

ABOUT
SMI Inc. JAPAN

Our Technology Partner

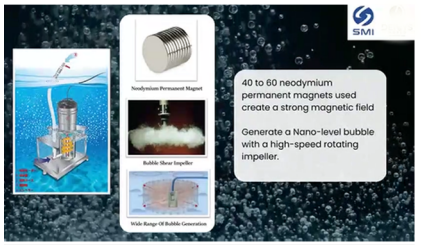
SMI Inc. Japan is a world leader in innovative environmental technologies. Their mission is to share cutting-edge Japanese innovations with the world, promoting global prosperity, equality, and peace.

Key Strengths:

- Patented technologies with global recognition
- Extensive network of scientists and technologists
- Commitment to achieve UN Sustainable Development Goals
- Continuous innovation in addressing global challenges









TESTIMONIALS



"All must adhere to the "golden principle" of the 3Rs **--Reduce, Reuse and Recycle--** which will significantly help in waste management and sustainable development of mankind."

– Hon'ble Prime Minister Narendra Modi

"The Multi-Waste Management Machine is not just a technological marvel; it's a solution for global waste management challenges." – **Mr. Shuichi Nonaka, Japan**



"HRDS INDIA's initiative with the Multi-Waste Management Machine aligns perfectly with our vision for a Swachh Bharat." – **Swami Atma Nambi, Brazil**



CALL TO ACTION

Join the Waste Management Revolution

- For Municipal Corporations : ——— Partner with us to transform your city's waste management
- For NGOs : ——— Collaborate on community engagement and education initiatives
- For Corporations : ——— Invest in sustainable waste management as part of your CSR initiatives
- For Citizens : ——— Support and participate in responsible waste management practices

Together, we can build a cleaner, healthier, and more sustainable India.





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" OUR PLANET DESERVES BETTER. LET'S REDUCE, REUSE, AND RECYCLE WITH HRDS INDIA."

HRDS INDIA

EMBRACING A ZERO-WASTE FUTURE HRDS INDIA: INNOVATING FOR A SUSTAINABLE TOMORROW



" क्लीन इंडिया, ग्रीन इंडिया " – " CLEAN INDIA, GREEN INDIA "