

Session on Circular Economy Spotlight- Celebrating Innovation & Impact

“Building Circularity & Sustainability through Collaborative Partnerships Rural and Urban Landscapes of India”

**Presenter: Mr. Prabhjot Sodhi , Senior Programme, Director,
Centre for Environment Education**



CEE

Problem Statement

- India generates **1.86 lakh tons (2026) solid waste/day**, increasing **6 to 7 %** annually.
- Nearly **1.14 lakh ton/day** processed, **0.39 lakh ton/day ends up in dumping yards**.
- **Segregated Collection of waste** is a gap in tier II & tier III Cities-towns, peri urban areas.
- **Limited Investments in Recovery& Recycling infrastructure**
- **Fragmented waste value chains**; limited investments with a systemic thinking by Sector
- **Disconnect within partners**; therefore, a linear systems focus – quick fixing, risks uncovered.
- **Environmental a misplaced priority**; lately greater attempts as **India a Signatory to Treaties**.
- **Small towns and emerging markets** lack structured waste ecosystems
- **Informal waste workers** low on dignity, respect, recognition and credit & market access

**1.4 BILLION DREAMS
1.4 BILLION AMBITIONS**

**BUT AS WE MOVE FORWARD,
WHAT ARE WE LEAVING BEHIND?**

165 $\frac{\text{Mn}}{\text{MT}}$ TOTAL WASTE GENERATED



IF THE TREND CONTINUES, TOTAL GENERATED WASTE IS PROJECTED TO GROW UPTO

215 Mn
MT
BY 2030



CONSTRUCTION & DEMOLITION WASTE

150 Mn MT Generated

Only 1% Officially Processed & Reused

MUNICIPAL SOLID WASTE (MSW)

62.17 Mn MT Generated

40% Collected
28% Treated With Scientific Methods

EFFLUENT WASTE WATER

Total Effluent Waste:
117 Bn Litres/Day

Municipal Sewage:
73 Bn Litres/Day
42% Treated

Industrial Waste Water
44 Bn Litres/Day

NON HAZARDOUS INDUSTRIAL WASTE

100 Mn MT Generated

45-50% Recycled

PLASTIC WASTE

9.3 Mn MT GENERATED

50-80% RECYCLED



CONSTRUCTION & DEMOLITION WASTE

MUNICIPAL SOLID WASTE (MSW)

INDUSTRIAL EFFLUENT WASTE WATER

INDUSTRIAL WASTE

PLASTIC WASTE

The figures mentioned pertain to India's annual estimates. Detailed sources are available at greensexpo.com

**165 Mn
MT**
TOTAL WASTE
GENERATED

**IF THE TREND CONTINUES, TOTAL GENERATED
WASTE IS PROJECTED TO GROW UPTO**

215 Mn MT BY 2030

CEE

Solutions

CEE initiatives approach - addressed challenges in a **6-way systemic model**:

- Envisioned **Partnerships MCs/CEO-ZPs, SPs,..**
- Proactive circular economy model – **business benefits across all** value chain stakeholders.
- Decentralized **MRFs and MRCs - infrastructure**
- Traceable, transparent physical monitoring and reporting, including dashboards; QR Codes etc.
- **MOUs with defined clear roles, accountability** of all S/Hs - long term operations
- **Better Accounting systems** in operations.

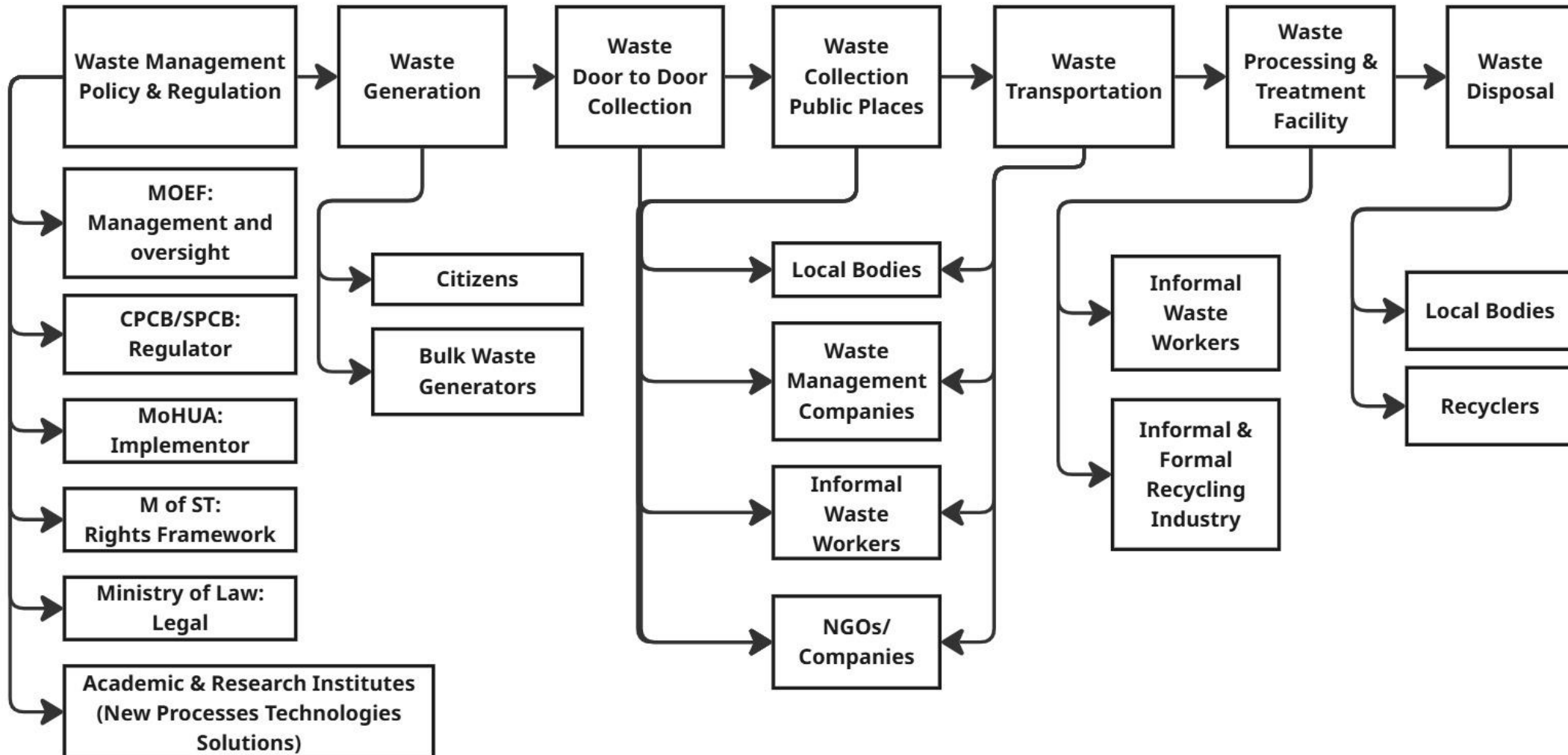
USP:

- **Planning and Review Meetings** between stakeholders at all locations on monthly basis.
- **Regular handholding service providers, safaii sathis, BWGs, etc.** in multidimensional areas – access & convergence in resources
- **Making government, private sector and public** as key partners
- **Regular Donors** review meetings Issues, challenges
- **Standard Operating Principles** guiding Tools in all areas.

Note: MRF (Material Recovery Facilities), MRC (Material Recycling Centres)

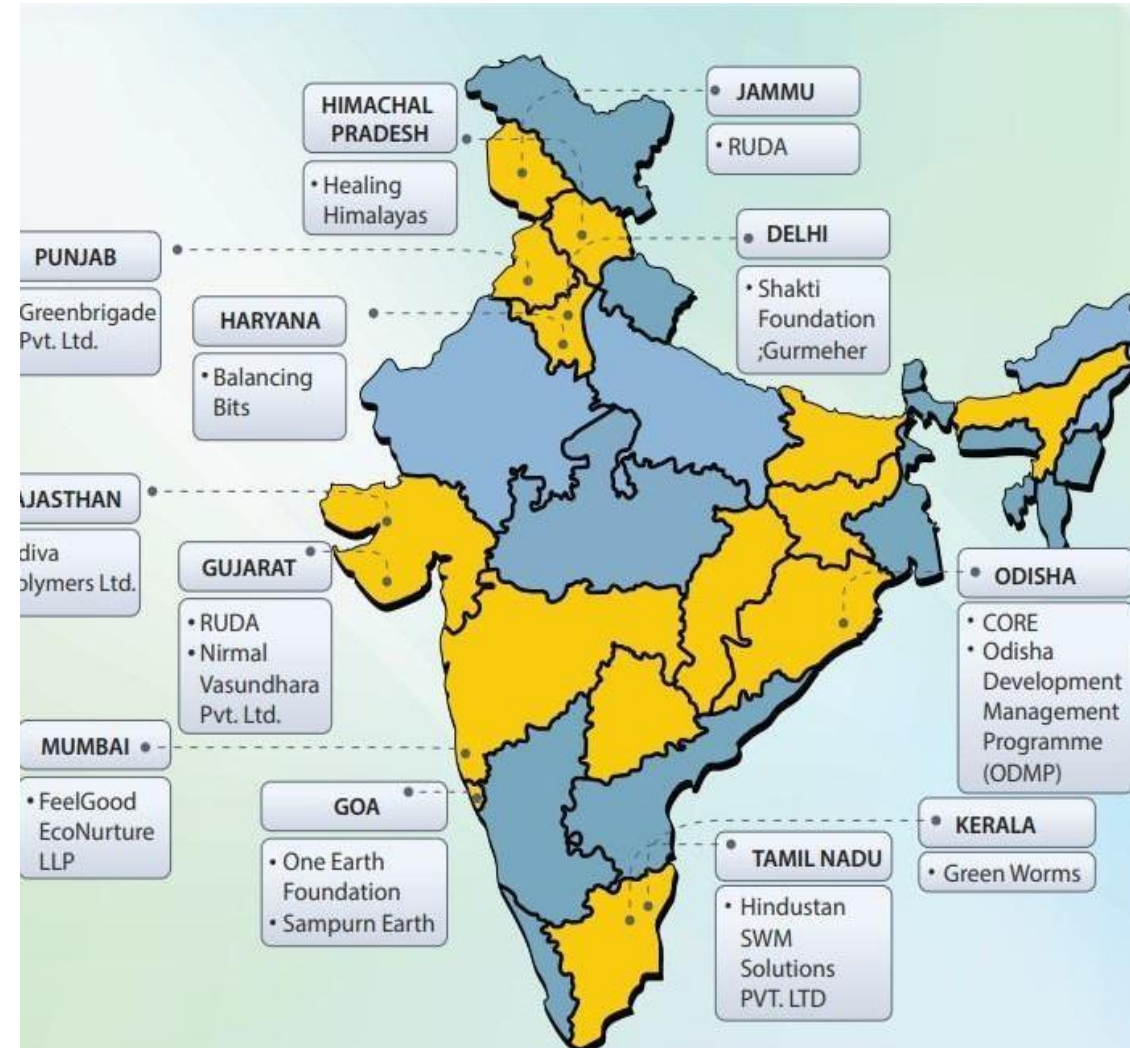
The Systems Approach

Solid Waste Management Journey (Ecosystem Approach)



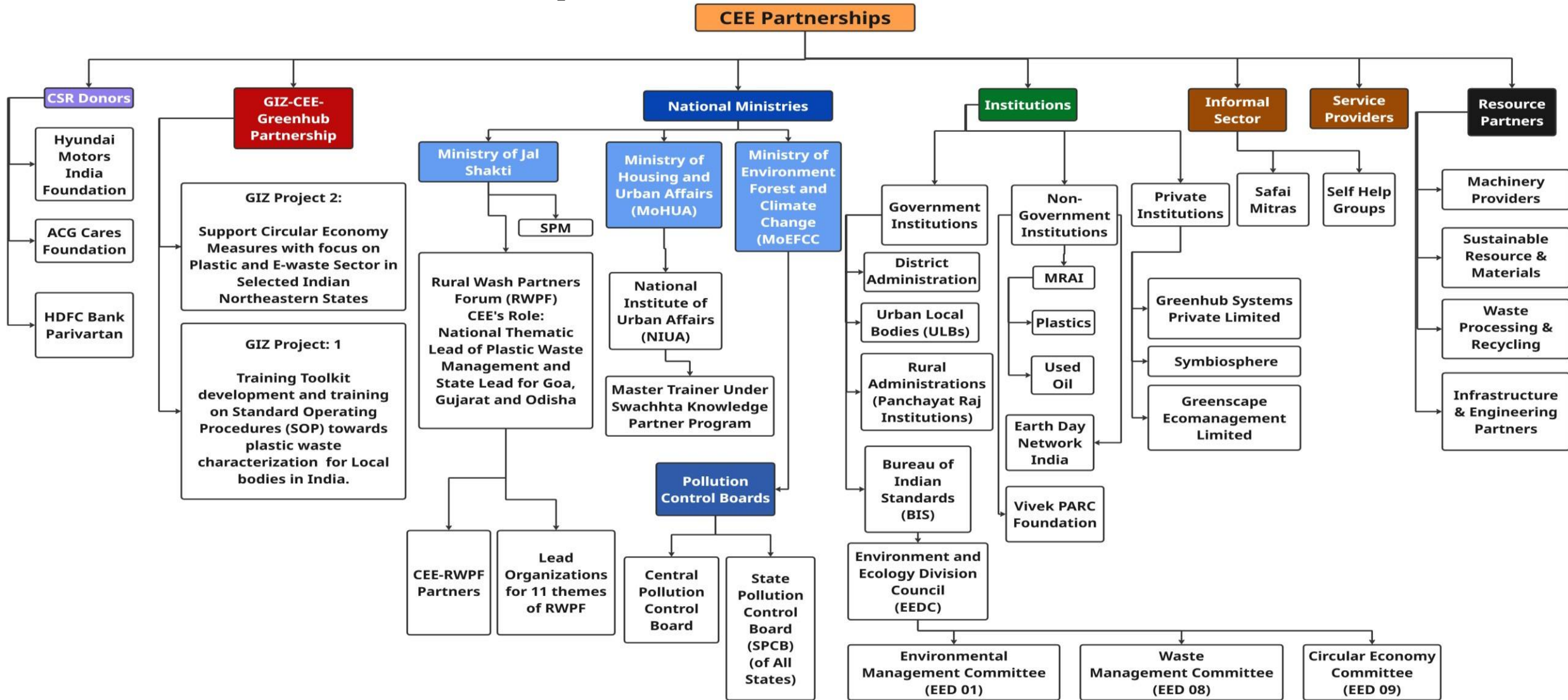
Geographic Coverages, Investments, Maturity

- CEE in 10 states of India -16 plant set-ups. 02 MRCs and 13 MRFs - Guiding partnerships with more than 15 more institutions in 3 more states
- **Total Investments Rs 88.6 Cr**; Nearly **46.0 Cr** from Donors; **Rs 42.6 Cr** from Co-financing - Governments, SPs, Communities (in-kind and in-cash) contributions..
- **Investments also in knowledge building**, more than **123** trainings, exposure visits to and from projects.
- **Projects partnerships with MCs/CEO-ZPs and Donors - initial investments for 3.5 years - later**
- formally “no-cost extensions” for another 3 to 5 years in different locations bringing sustainability & circularity.



CEE

CEE Partnerships, Collaborations & Stakeholders



Innovation

- **Not on led by Rules but Principles** BUT SOPs created enroute the journey in multiple areas, MRFs/MRCs, Safety, Finance, M&R, Business, Safai sathis, BWGs ...
- **Piloting and then scaling** to capture lessons, Gaps.
- **People led**; Service Providers, SHGs encouraged to lead local priorities across **project's 11 locations**.
- Sustainable facility management models with 3.5-4.0 mts/day as a business threshold.
- Multiple sources of incomes at the MRF, MRC
- Women playing vital partner's in the management & operations of MRFs and MRCs.



Accomplishments

Environmental Impacts:

- 27,000+ mts. waste processed Rs 280 Cr Oil
- 63,000 MT CO2 emissions reduced
- 1.52 lakh cubic meters landfill reduction
- Improved recycling including low value plastics more than 1.25 crores MLP packets

Economic Value Creation

- ₹45-56 crore recyclables value generated. Bringing average profits Rs 5-9 lacs per SP/year
- Confident Communities replicating approach and Minimization of waste and costs
- Micro enterprise opportunities created.

Social Impacts:

- 2,000+ waste workers supported
- 20 to 45 % income increase average
- Formal integration of informal waste workers into Govt. Schemes.

Example: Bastar

- 114 villages and 39 panchayats
- 89 villages currently covered
- ₹4.12 crore donor investment; ₹ 0.60 crore SP
- ₹11.41 crore government investment
- 431 women benefitted

Accomplishments

Operational Accomplishments

- **Extension of contracts with LBs** showcasing administrative trust
- **Inventorization - Plastics Study** RSPCB, Jaipur.
- **Toolkit Development** on Waste Characterisation and Assessment Study Supported GIZ, MoEFCC.
- **National lead on Plastics** with Ministry of Jal Shakti, GOI under Rural WASH Partner's Forum.
- **Master Trainers** under NIUA SKP Program
- **Member in various Committees** of BIS, 11 Sector Committees on CE - Niti Aayog, Written as member EPR, MRF Guidelines –MOHUA.

Institutional Recognition

- **Member in BIS Committees (EEDC Committee)**
 - Circular Economy
 - Waste Management
 - Environment Management
- Partnership under Traditional Wisdom Exchange with MoEFCC
- **Donor (HDFC Bank) received FICCI RECEIC Awards**
- **Advisor at Materials Recycling Association of India (MRAI).**
- **Kartikeya V Sarabhai**, Director CEE with several National and International Awards

Way Forward Plan

Replicability & Scalability:

- Scaling decentralized waste management systems across regions in India
- Expansion of MRFs and MRCs
- Strengthening circular waste ecosystems

Capacity Building:

- Dedicated training for stakeholders.
- Networks & capacity building for waste workforce
- Handholding support for local bodies

Policy Alignment:

- Advocacy & Implementation aligned with new Government of India SWMgt., C&D Rules....
- Strengthening institutional frameworks

Future Integration:

- Linking E waste collection and management
- Integrating with existing solid waste management facilities.