NON-BIO DEGRADABLE WASTE MANAGEMENT IN KERALA
Total quantity of dry waste generated in Kerala per year = 10,26,497 MT
NON BIODEGRADABLE WASTE MANAGEMENT PROCESS

Collection of Non Bio Degradable waste by Haritha Karma Sena from source

Transfer to Grama Panchayath/Municipal ward Level MCFs

Segregation – Recyclable / Non Recyclable - at MCFs

Transfer to Block Level / Municipal Level RRFs

Shredding of zero value plastics using shredding machines

Shredded plastic for polymerized road construction

Bailing of other plastics using baling machine and sale to recyclers

Rejects for Coprocessing and Safe landfill
Harithakarmasena (HKS)

- Each ward will be having 2 HKS (Green task force) members
- They provide support to households in source segregation & composting
- Assistance for composting like monthly supply of Inoculum will be taken care by HKS
- They conduct door-to-door dry waste collection monthly at each household
- Stored at Mini-MCF at ward level
Resource Recovery

Harithakarmasena (HKS) at LSGI level (Each ward 2 members)    Door to door collection of dry waste

Plastic collection from house - Kadirur GP
Storage and transfer

Mini MCF (Transfer stations at ward level)
Transportation from Mini-MCF to MCF
Material Collection Facilities at LSGI level (MCF)
Segregation at MCF

Collected materials are segregated at MCF and valuable items are sold locally from MCF itself

Plastics will be sent to RRF
## STATUS OF MCF

Almost 900 LSGIs have constructed Material Collection Facilities

<table>
<thead>
<tr>
<th>LSG</th>
<th>Functional</th>
<th>Construction Completed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipality</td>
<td>100</td>
<td>86</td>
<td>186</td>
</tr>
<tr>
<td>Municipal Corporation</td>
<td>19</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td>Grama Panchayath</td>
<td>453</td>
<td>409</td>
<td>862</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>572</strong></td>
<td><strong>517</strong></td>
<td><strong>1089</strong></td>
</tr>
</tbody>
</table>

### Targeted no. of MCF

- 1 at Each Ward in Municipal Corporations
- 3 per Municipality
- 1/Grama Panchayat
Resource Recovery Facilities (RRF) at Block level in Rural Areas and LSGI level in urban Areas
Baling & Shredding facility at RRF
RRF

Baling facility at RRF

Baled plastic blocks
Baled blocks for recycling
Shredding at RRF

Shredding on progress at a block level RRF

Shredded Plastics ready to sale
Managing Non recyclable waste

- In RRFs, Plastic shredding and bailing machines of adequate capacities are installed for further processing.
- The non-recyclable plastics are shredded and used for road construction works (tarring).
- E-waste, glass and metals are channelised to recycling centres through Clean Kerala Company Ltd.
<table>
<thead>
<tr>
<th>Sl No</th>
<th>Districts</th>
<th>No. of RRF in each district</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thiruvananthapuram</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Kollam</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Alappuzha</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Kottayam</td>
<td>17</td>
</tr>
<tr>
<td>5</td>
<td>Pathanamthitta</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Idukki</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>Ernakulam</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>Thrissur</td>
<td>23</td>
</tr>
<tr>
<td>9</td>
<td>Palakkad</td>
<td>14</td>
</tr>
<tr>
<td>10</td>
<td>Malappuram</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Kozhikode</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>Kannur</td>
<td>13</td>
</tr>
<tr>
<td>13</td>
<td>Wayanad</td>
<td>3</td>
</tr>
<tr>
<td>14</td>
<td>Kasaragod</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>150</strong></td>
</tr>
</tbody>
</table>
Haritha Karma Sena, MCF and RRF Status

as on Dec, 2017

• Haritha Karma Sena formed in 532 LSGIs
  (486 GPs and 46 ULBs)
• 171 Material Collection Facilities established
  (132 in GPs and 39 in ULBs)
• 61 Resource Recovery Facilities established
  (35 in GPs and 26 in ULBs)

as on Mar, 2020

• Haritha Karma Sena formed in 813 LSGIs
  (720 GPs and 93 ULBs)
• 837 Material Collection Facilities established
  (744 in GPs and 156 in ULBs)
• 148 Resource Recovery Facilities established
  (49 at Bps, 40 in GPs and 59 in ULBs)
Systems already established for Managing 60% of Dry Waste Generation

Establishing Network for Recycling through Clean Kerala Company (CKCL) which is formed by State Govt.

Rejects Management System in pipeline (CKCL)
- RDF MOU signed with ACC
- Landfill facilities Construction Process initiated
## Total Dry Waste Collection

<table>
<thead>
<tr>
<th>Total quantity of dry waste collected per year</th>
<th>6,47,130 MT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantity of dry waste collected through systems established by LSGI per year</strong></td>
<td>3,88,278 MT</td>
</tr>
<tr>
<td><strong>Quantity of dry waste collected through informal and private agencies</strong></td>
<td>2,58,852 MT</td>
</tr>
</tbody>
</table>
DATA ON SHREDDED PLASTIC

Total quantity of plastic shredded from 2017 – 2020 - 1337.24 MT

Total Income from sales of shredded plastic – Rs. 2,25,45,600
ROAD CONSTRUCTED AS ON 31-05-2020
= 2023.34 Km
Total Quantity of E Waste Collected (From 2016 ) = 1452.867 MT
## LEGACY WASTE REMOVED

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flood waste (2018-19)</td>
<td>15674.81 MT</td>
</tr>
<tr>
<td>Other campaigns</td>
<td>5012 MT</td>
</tr>
<tr>
<td>COVID 19 &amp; pre monsoon</td>
<td>5969.675 MT</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>26656.485 MT</strong></td>
</tr>
</tbody>
</table>
Local Self Governments are proactive in establishing systems for Non Bio degradable waste collection and management and are actively involved transforming system to a circular economy approach
THANK YOU

GOVT. OF. KERALA

SUCHITWA MISSION
LOCAL SELF GOVERNMENT DEPARTMENT KERALA