Municipal Council- Ratnapura
Sri Lanka
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Sri Lanka
General information on Ratnapura MC

Population: 54,373

Land Extend: 22.8 sqkm

No. of Division: 15

Rain fall: 3,380-4561 mm/year*

from April to July,

from November to January
1. Current situation of SWM at Ratnapura MC

**Current Intermediate Treatment Facilities at RMC**

**For Organic Wastes**
- Old compost yard: Funded by UNESCAP-IRRC in 2014
- Two New compost yards: Funded by Pilisaru Project will open from January 2018

**For Recyclable materials**
- Sorting out and storage facility increased
- Recycling center will open from January 2018
1. Current situation of SWM at Ratnapura MC

Windrow System

Boxed System
1. Current situation of SWM at Ratnapura MC
1. Current situation of SWM at Ratnapura MC

**Current Waste flow in 2017**

1. Waste generation
   - 53.76 t/d (100.0%)

2. Discharge
   - 48.02 t/d (99.0%)

3. Direct haulage
   - 0.80 t/d (1.5%)

4. On-site Compost
   - 0.30 t/d (0.6%)

5. Self disposal
   - 2.24 t/d (4.2%)

6. Illegal dumping
   - 1.97 t/d (3.7%)

7. Collection
   - 47.60 t/d (88.6%)

8. On-site recycling
   - 0.42 t/d (0.8%)

9. Recycling (1)
   - 2.7 t/d (5.0%)

10. Landfill site
    - 44.9 t/d (83.5%)

11. Offsite compost
    - 2.1 t/d (3.9%)

12. Other LAs
    - 3.8 t/d (0.0%)

13. Recycling (2)
    - 0.1 t/d (0.3%)

12. Final disposal
    - 47.3 t/d (87.9%)
2. SWM Action Plan
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Functions of Action Plan

Local Authorities as a service provider,

• Enhance the PPP

• Keep accountability & transparency

• Encourage participation of citizens

• Continuously operate & improve SWM
3. SWM Action Plan for Ratnapura MC (Draft)
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Projected Waste flow in 2022 With 3Rs

1. Waste generation
   58.88 t/d
   (100.0%)

2. Discharge
   52.60 t/d
   (89.3%)

3. Direct haulage
   0.88 t/d
   (1.5%)

4. On-site Compost
   0.78 t/d
   (1.3%)

5. Self disposal
   2.46 t/d
   (4.2%)

6. Illegal dumping
   2.16 t/d
   (3.7%)

7. Collection
   52.14 t/d
   (88.6%)

8. On-site recycling
   0.46 t/d
   (0.8%)

9. Recycling (1)
   3.4 t/d
   (5.8%)

10. Landfill site
    48.7 t/d
    (82.8%)

11. Offsite compost
    15.0 t/d
    (25.5%)

12. Final disposal
    27.2 t/d
    (46.2%)

12. Other LAs
    3.8 t/d
    (0.0%)

13. Recycling (2)
    10.5 t/d
    (17.8%)
## 3. SWM Action Plan for Ratnapura MC (Draft)

<table>
<thead>
<tr>
<th>Items</th>
<th>Indicator</th>
<th>Situation 2017</th>
<th>Target in 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Waste Minimization (Reduction of discharge amount)</td>
<td>Number of household doing onsite home compost</td>
<td>6% (2014)</td>
<td>10%</td>
</tr>
<tr>
<td>2. Compost production</td>
<td>Receiving waste amount for offsite composting (ton/day)</td>
<td>2.3 ton/day</td>
<td>15 ton/day</td>
</tr>
<tr>
<td></td>
<td>Compost production at Kanadola (ton/month)</td>
<td>2.3 ton/month</td>
<td>15 ton/month</td>
</tr>
<tr>
<td>3. Recycling</td>
<td>Sales amount of recyclable wastes at Kanadola (ton/day)</td>
<td>0.14 ton/day</td>
<td>10.5 ton/day</td>
</tr>
<tr>
<td>4. Awareness</td>
<td>Percentage of 5 separation categories at generation level</td>
<td>0%</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>Number of annual awareness rising programs on SWM in 15 divisions</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>5. Training/education</td>
<td>Number of training for staffs of RMC</td>
<td>Not regular</td>
<td>biannually</td>
</tr>
<tr>
<td>6. Waste disposal</td>
<td>Final disposal amount (ton/day)</td>
<td>47.3 ton/day</td>
<td>27.2 ton/day</td>
</tr>
<tr>
<td></td>
<td>Acquisition of a new land and construct a sanitary landfill</td>
<td>In progress</td>
<td></td>
</tr>
</tbody>
</table>
Challenging – Limited space
Current situation
Future options of total solutions to reduce waste disposal amount

• New land fill site – in progress
• Closing of current open dumping site
• Biogas plant
4. Outcome & Target of JICA Pilot Project

- To reduce discharge amount of wastes
- To increase waste separation percentage
- To reduce disposal amount of wastes at dumping site
- To cover the collection of inaccessible area
- To formulate guideline on intermediate treatment system

<table>
<thead>
<tr>
<th>Biodegradable</th>
<th>Plastic</th>
<th>Glass &amp; Metal</th>
<th>Paper</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Food waste</td>
<td><img src="image1" alt="Plastic" /></td>
<td><img src="image2" alt="Glass &amp; Metal" /></td>
<td><img src="image3" alt="Paper" /></td>
<td><img src="image4" alt="Other than left mentioned wastes" /></td>
</tr>
<tr>
<td>• Garden waste</td>
<td><img src="image1" alt="Plastic" /></td>
<td><img src="image2" alt="Glass &amp; Metal" /></td>
<td><img src="image3" alt="Paper" /></td>
<td><img src="image4" alt="Other than left mentioned wastes" /></td>
</tr>
</tbody>
</table>

Separation bin

Colored Poly sack
## 4. Outcome & Target

<table>
<thead>
<tr>
<th>Indicators of PP Outcome</th>
<th>Before After</th>
<th>Target (2017 ➔ 2018)</th>
<th>Data source</th>
</tr>
</thead>
</table>
| Discharge amount of wastes from households level in PP areas                            | ✅           | TBD after composition survey | • Waste composition survey  
• Questionnaire survey                                                             |
| Number of household doing onsite home compost in PP areas                               | ✅           | 6 % 10 %              | • No of distribution of home compost bins  
• Questionnaire survey                                                             |
| Percentage of separation in PP areas                                                    | ✅           | 90 %                  | • Waste composition survey  
• Questionnaire survey                                                             |
| Production of compost at Kanadola (Receiving amount)                                    | ✅           | 2t/m (2t/d) 6t/m (6t/d) | • Data record of collection amount of biodegradable waste at Kanadola  
• Data record of compost production at Kanadola                                      |
| Sales of recyclable waste at Kanadola                                                  | ✅           | 0.14t/d (10 times more) | • Sales record of recyclable wastes at Kanadola                              |
| Disposal amount of wastes at dumping site (Kanadola)                                   | ✅           | 47.3t/d (12.6 % reduction) | • Data record of dumping amount incl. residues via compost production.       |
| Door to door collection service coverage of RMC                                         | ✅           | TBD                   | • Collection and Transportation plan  
• GPS tracking                                                                     |
| Creation of 5 years Action Plan                                                        | -            | -                     | • 5 years Action Plan                                                        |
Survey result
6. progress of the pilot project

**Result of Questionnaire Survey**

Question: Do you know about national policy on solid waste management in Sri Lanka?

**Residents: 200**
- a. Yes, I know about it. 26%
- b. Yes, I have heard about it. 25%
- c. No. 49%

**Commercials: 143**
- a. Yes, I know about it. 28%
- b. Yes, I have heard about it. 32%
- c. No. 40%
6. progress of the pilot project

**Result of Questionnaire Survey**

Question: Are you separating wastes?

Residents: 200

- Yes: 82%
- No: 18%

Commercials: 143

- Yes: 90%
- No: 10%
6. progress of the pilot project

**Result of Questionnaire Survey**

**Question:** How do you discharge your wastes in using RMC service?

**Residents:** 200

- a. Waste container: 28%
- b. Shopping bag: 49%
- c. Poly sack bag: 21%
- d. Other: 2%

**Commercials:** 143

- a. Waste container: 33%
- b. Shopping bag: 37%
- c. Poly sack bag: 29%
- d. Other: 1%
6. progress of the pilot project

**Result of Questionnaire Survey**

**Question:** Are you using RMC collection service for recyclable items?

Residents: 200

- **a. Yes, only RMC service** 91%
- **b. Yes, also other services** 2%
- **c. No, not using RMC service** 2%

Commercials: 143

- **a. Yes, only RMC service** 95%
- **b. Yes, also other services** 3%
- **c. No, not using RMC service** 2%
6. progress of the pilot project

**Result of Questionnaire Survey**

Question: How do you satisfy with solid waste management service provided by RMC?

Residents: 200

- Very satisfied: 37%
- Somewhat satisfied: 59%
- Not satisfied: 4%

Commercials: 143

- Very satisfied: 29%
- Somewhat satisfied: 64%
- Not satisfied: 7%
## Supplemental slides (1)
### Transition toward 2022

<table>
<thead>
<tr>
<th>Measure</th>
<th>Situation 2017</th>
<th>2018 PP 1st batch</th>
<th>2019 PP 2nd batch</th>
<th>2020</th>
<th>2021</th>
<th>Target in 2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of HH doing home compost (%) (2014)</td>
<td>6 %</td>
<td>6.89</td>
<td>8</td>
<td>9</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Receiving amount of biodegradable waste at Kanadola (ton/day)</td>
<td>2.1</td>
<td>5.33</td>
<td>8.55</td>
<td>11.78</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Compost production at Kanadola (ton/month)</td>
<td>2.3</td>
<td>5.33</td>
<td>8.55</td>
<td>11.78</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Receiving amount of recyclable items (ton/day)</td>
<td>5</td>
<td>2.92</td>
<td>11.67</td>
<td>11.67</td>
<td>11.67</td>
<td>11.67</td>
</tr>
<tr>
<td>Sales amount of recyclable wastes at Kanadola (ton/day)</td>
<td>0.14</td>
<td>1.46</td>
<td>7.00</td>
<td>8.17</td>
<td>8.17</td>
<td>9.34</td>
</tr>
<tr>
<td>Sales amount/ Receiving amount (%)</td>
<td>0</td>
<td>50</td>
<td>50</td>
<td>60</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>Final disposal amount (ton/day)</td>
<td>47.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27.2</td>
</tr>
</tbody>
</table>
Acknowledgment

• ESCAP
• Sewanatha
Thank you for your attention

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