Proportion of MSW managed in controlled facilities

Total MSW managed in controlled facilities

- MSW managed in «controlled» recovery facilities
  (Step 5)
- MSW managed in «controlled» disposal facilities
  (Step 6)

Proportion of MSW managed in controlled facilities

- Total Population
  (Step 1)
- PCGR of HH waste
  (Step 2)
- Commercial & Institutional waste
  (Step 4)

Total MSW Generated

1000
Step 1: Total population

+ Transit population

Determining total population

Found census data

Outdated census
- Try to updated with population growth rate

Updated and valid census!
- Use it but be aware it might result in an underestimate

Congrats!
Step 2 & 3: Household waste generation and characterization
Step 2 & 3 Household waste generation and characterization

Planning a WACS:
1. Sub-divide city
2. Calculate sample size
3. Conduct random selection
4. Select waste fractions
5. Interview households
6. Account for daily and seasonal variations
7. Prepare site for the audit
8. Hire and train staff
9. Acquire necessary equipment
### Step 4: Commercial & Institutional waste

<table>
<thead>
<tr>
<th>Generator</th>
<th>Unit</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel</td>
<td># of beds,</td>
<td>If there is a shopping centre or restaurant, assess separately</td>
</tr>
<tr>
<td>Restaurant</td>
<td># of tables/chairs; open for breakfast, lunch or dinner</td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td># of pupils</td>
<td>If there is a canteen, assess separately</td>
</tr>
<tr>
<td>Offices</td>
<td># of employees; Square meters</td>
<td>If there is a canteen, assess separately</td>
</tr>
<tr>
<td>Markets</td>
<td># of stalls; type of goods (vegetable market vs electronics market)</td>
<td></td>
</tr>
<tr>
<td>Hospitals</td>
<td># of beds</td>
<td></td>
</tr>
</tbody>
</table>
### Step 4: Commercial & Institutional waste

<table>
<thead>
<tr>
<th>Generation source</th>
<th># of surveyed districts</th>
<th># of premises visited per district</th>
<th>Total # of premises visited</th>
<th>Total # of sqm, beds, pupils, tables, etc.</th>
<th>Average MSW generation per day</th>
<th>Total MSW generated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hotel</td>
<td>5 or 3</td>
<td>2</td>
<td>10 or 6</td>
<td>unit</td>
<td>g/ unit/day</td>
<td>t/day</td>
</tr>
<tr>
<td>Restaurants</td>
<td>5 or 3</td>
<td>3</td>
<td>15 or 9</td>
<td>unit</td>
<td>g/ unit/day</td>
<td>t/day</td>
</tr>
<tr>
<td>Shopping malls</td>
<td>5 or 3</td>
<td>1</td>
<td>5 or 3</td>
<td>unit</td>
<td>g/ unit/day</td>
<td>t/day</td>
</tr>
<tr>
<td>Hospitals</td>
<td>5 or 3</td>
<td>1</td>
<td>5 or 3</td>
<td>unit</td>
<td>g/ m²/day</td>
<td>t/day</td>
</tr>
<tr>
<td>Institutions</td>
<td>5 or 3</td>
<td>1</td>
<td>5 or 3</td>
<td>unit</td>
<td>g/ m²/day</td>
<td>t/day</td>
</tr>
<tr>
<td>Markets</td>
<td>5 or 3</td>
<td>1</td>
<td>5 or 3</td>
<td>unit</td>
<td>g/ m²/day</td>
<td>t/day</td>
</tr>
<tr>
<td>....</td>
<td>5 or 3</td>
<td>...</td>
<td>...</td>
<td>unit</td>
<td>g/m/day</td>
<td>t/day</td>
</tr>
</tbody>
</table>
Classification of waste management facilities

MSW final destinations

Preparation for recovery facilities

Recycling facilities

Bio. & Mech. recycling facilities

Biological recycling
- Composting (not land cover)
- Vermicomposting
- Anaerobic digestion (digestate used)
- Black Soldier Fly
- Animal feeding

Mechanical recycling
- Plastic R.
- Metal R.
- Glass R.

Energy recovery
- Incineration (meeting standards)
- Advanced thermal treatment (Gasification, pyrolysis, Plasmapyrolysis)

Bio. & Mech. recovery
- Composting (land cover)
- Anaerobic digestion (no digestate reuse)
- Preparation for RDF

Disposal facilities

Land disposal

Incineration (not meeting standards)
Step 5: Quantities managed in recovery facilities
Step 5: Quantities managed in recovery facilities

Familiarizing with MSW recovery system

Q1: Is there any official source separated collection for any recyclable material?
   - Yes: Identify and interview collection companies
   - No: Go to Question 2

Q2: Is there an informal sector collecting recyclables?
   - Yes: Are they present at the DDS?
     - Yes: Identify and contact a representative member
     - No: Identify and interview the junkshops
   - No: No recovery of materials

Is the number of informal collectors/junkshops too big to identify them all?
   - Yes: Identify and interview registered middlemen who buy informally collected materials
   - No: Disregard landfill
Step 5: Quantities managed in recovery facilities

Interviewing Recovery facilities:

1. Amounts collected/processed
2. Total share in local / national market
3. MSW vs Industrial
4. Origin (same city, disposal sites, informal sector, etc.)
5. Destination
6. Other companies
7. Rejects
Step 6: Quantities managed in disposal facilities

Is the amount disposed at the DDS monitored on a daily basis?

- Yes
  - Congrats! You’ve got your data

- No
  - Can a monitoring system be put in place for the assessment?*
    - Yes
      - Measure (weight bridge) or estimate (truck counting) how much waste is disposed on a daily basis
    - No
      - Interview the formal collecting company and obtain data on number of trips and load of trucks
Step 7: Characterization of disposed waste
Step 8: Recyclables extracted from disposal facilities
Coming soon...  

- Potential plastic Emissions (PPE)
  - Methodology currently being elaborated
Linkages to other SDG

- SDG 1.4.1 on access to basic services
- SDG 12.3.1 on food waste
- SDG 12.4.2 on hazardous waste
- SDG 12.5.1 on recycling
- SDG 14.1.1 on marine litter
Thank you for your attention
Groups 1 – 30 minutes

- Go through the 8-Step methodology
  Revoyez la méthodologie à 8 étapes

- What are your requirements and challenges?
  Quels seront vos besoins et défis principaux?

- Do you find it practical and realistic?
  Est-elle pratique et réalisable?

- How about forming Regional hubs?
  Que pensez-vous de l’idée d’une collaboration régionale?
Groups

- Do you find SDG 11.6.1 useful?
- Are you ready to get started?
- What do you need from us...