BOX 2.1 MATERIAL FLOW INDICATORS IN JAPAN

Japan’s 2003 strategic plan for establishing a Sound Material-Cycle Society introduced material flow indicators as a tool for monitoring Japan’s material flows on a regular basis. The material flows monitored refer to:

- **Inputs** – domestic and imported natural resources such as non-metallic mineral resources (e.g. rock, earth and sand), fossil resources, metallic resources (e.g. molybdenum, zinc, copper, rhodium, platinum, nickel, palladium, iron, aluminium, gold and other metals) and biomass resources, plus imported products;
- **Input of water** – included in waste and the like (sludge, animal manure, human waste, waste acid, waste alkali) and sediment and the like associated with economic activities (sludge from mining, building and water works and tailing from mining);
- **Circulative resources** – paper, scrap iron and steel, slag, non-ferrous scrap metal, scrap plastic, vegetable oil cake and grain residues; and
- **Outputs** – MSW and industrial waste for final disposal, and sediments.

Targets were set for 2010 (short-term), 2015 (medium-term) and 2020 (long-term), using a 2000 baseline.

### MATERIAL FLOW INDICATORS AND TARGETS USED IN THE FUNDAMENTAL PLAN FOR ESTABLISHING A SOUND MATERIAL-CYCLE SOCIETY IN JAPAN

<table>
<thead>
<tr>
<th>Measuring</th>
<th>Indicator</th>
<th>Calculated as</th>
<th>Baseline value in 2000</th>
<th>Target 2010</th>
<th>Target 2015</th>
<th>Target 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>Resource productivity (10,000 yen/ton)</td>
<td>GDP / Natural resources input</td>
<td>25</td>
<td>374 (originally 39) (50% improvement from 2000)</td>
<td>42 (+70 improvement from 2000)</td>
<td>46 (Approximately 80% improvement from 2000)</td>
</tr>
<tr>
<td>Circulation</td>
<td>Cyclical use rate (%)</td>
<td>Amount of cyclical use (i.e. reuse and recycling)/ (Amount of cyclical use + natural resources input)</td>
<td>10</td>
<td>14 (40% improvement from 2000)</td>
<td>14-15 (40%-50% improvement from 2000)</td>
<td>17 (70% improvement from 2000)</td>
</tr>
<tr>
<td>Outputs</td>
<td>Final disposal amount (million tons)</td>
<td>Amount of waste disposed</td>
<td>56</td>
<td>28 (50% reduction from 2000)</td>
<td>23 (60% reduction from 2000)</td>
<td>17 (70% reduction from 2000)</td>
</tr>
</tbody>
</table>

Figure 2.5  Material flow indicators in Japan

In 2010, the resource productivity amounted to 374,000 yen/tonne, the cyclical use rate improved to 15.3%, and the final disposal amount declined to 19 million tons. If compared with the target set for that year it can be observed that the cyclical use rate and final disposal amount have not only achieved those targets but also surpassed the targets set for 2015.

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52 In Japan, the government’s fiscal year runs from 1 April to 31 March.