Thailand’s Waste Minimization

Pollution Control Department, Ministry of Natural Resources and Environment, Thailand
Waste Recovery

- **Waste composition**

  - **Plastic 17% (2.5 mt)**
    Plastic bag, foam and other packaging
  
  - **Paper 8% (1.1 mt)**
    News paper, magazine, Paper packaging
  
  - **Glass 3% (0.4 mt)**
    Glass container and packaging, one-way products
  
  - **Metal and aluminum 2% (0.3 mt)**
    Packaging and container

![Diagram showing waste composition](image)
Waste Recovery

- **Municipality** 5,352 t/ d
  - Junk shop 4,793 t/ d
  - Composting 548 t/ d

- **Industry** 3,387 t/ d
  (Deposit-refund systems, take back programs)

**Total** 8,739 t/ d (3.19 Mt/ year)
Approximately 21.6 % of total generation
# Waste Recovery

## Waste Recovery Ratio

<table>
<thead>
<tr>
<th>Type</th>
<th>Amount (Ton)</th>
<th>Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recyclables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paper</td>
<td>926,900</td>
<td>29.06</td>
</tr>
<tr>
<td>Metal</td>
<td>867,100</td>
<td>27.18</td>
</tr>
<tr>
<td>Glass</td>
<td>747,500</td>
<td>23.43</td>
</tr>
<tr>
<td>Plastic</td>
<td>358,800</td>
<td>11.25</td>
</tr>
<tr>
<td>Aluminum</td>
<td>89,700</td>
<td>2.81</td>
</tr>
<tr>
<td><strong>Organics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,190,000</td>
<td>100</td>
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</tbody>
</table>

- **Recyclables**:
  - Paper: 926,900 Ton, 29.06%
  - Metal: 867,100 Ton, 27.18%
  - Glass: 747,500 Ton, 23.43%
  - Plastic: 358,800 Ton, 11.25%
  - Aluminum: 89,700 Ton, 2.81%

- **Organics**: 200,000 Ton, 6.27%

- **Total**: 3,190,000 Ton, 100%
**Internal Conditions**
- Socio-economic development
- Government policy
- Resource and energy conservation
- Pollution status

**External Conditions**
- International agreements
- Trade and environment
- International standards
- Global environmental problem

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**National Policy on Waste Management**

**3Rs Promotion**
**Integrated Technology**
**Clustering Management**
**Public Private Partnership**
National 3Rs Principle

Recycling-oriented Society

Resources

Wastes

Consumption
National 3Rs strategy

Step 1 Reduce wastes and by-products from manufacture processes

Step 2 Reuse wastes and consumed products

Step 3 Recycle wastes, consumed products and unreusable materials

End products (recyclable material, heat, electricity and biogas)
National 3Rs strategy

Production

- Waste reduction programs (Eco-design/CT/CP/environmental labels)
- Promote reuse and recycling of wastes and recyclable materials
- Promote production of eco-friendly products

Distribution and Consumption

- Promote recycling-oriented society
- Promote use of green products
- Promote separation and take-back programs

Recycling, Treatment and Disposal

- Support community-based recycling activities
- Capacity building on 3Rs and waste management
- Promote privatization
- Promote cooperation among stakeholders
- Standard and guideline for pollution control
3Rs Strategies

- Social – based activity
- R&D on 3Rs
- Capacity building
- International cooperation
- Economic instrument
- Law and regulation
3Rs Implementations

- Economy Instruments
- International Cooperation
- Regulation
- R&D
- Awareness
- Capacity Building

Support Tools:
- Government policy and dialogue
- Environmental fund/financial allocation from central government
- Existing laws and regulations
- National integrated wastes management and 3Rs strategic plan
- International cooperation

3Rs based activities

Government
Civil Society (NGOs / Community)
Private
International Organizations

Partnership

PCD copyright
3Rs good practices

• Integrated Waste Management: 3Rs and WTE

Solid Waste
- Recyclable
- Organic
- Combustible
- Non-combustible/Non-digestible

“3Rs”
- Sold for reuse/recycling

“WTE”
- Residues
- RDF
- Incineration
- Biogas
- Heat/Electricity
- Landfill
- Credit/used/sold

PCD copyright

3Rs good practices

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PCD copyright
Example of 3Rs good practices

• **Capacity Building on 3Rs**
  - Training & Education
  - Guidelines/manuals
  - Waste specific containers
Example of 3Rs good practices

- Initiatives of recycling-oriented society

  - Over 200 communities implement the 3Rs,
  some municipalities reduce waste up to 30-50%
Example of 3Rs good practices

• Promotion of Stakeholder Cooperation
Example of 3Rs good practices

• Take-back Program for End-of-life Products

➢ Packaging and packaging waste

➢ Mobile phone and batteries

➢ Fluorescent lamp

➢ Used lead-acid batteries and dry cell batteries
Example of 3Rs good practices

- Industrial Waste Exchange Program

Ministry of Industry

Thailand Environment Institute

Material Exchange Center

- Waste exchange database
- Promote waste exchange program
- Monitoring

Supplier

Users

Over 450 industries registered as member in 2005
3Rs good practices

Government Green Procurement

- Lists of green products and services (19 products and 4 services)
- Guideline and criteria for green procurement
- Capacity building for stakeholders
- Road map for promotion of green procurement
Example of 3Rs good practices

- Thailand Green Purchasing Network
Central Government

- Clear Statement and communication on 3Rs Policy goal and strategies.

- Awareness rising, Education, participation programs and Capacity building

- Support partnership – based actions on the 3Rs:
  - Finance / Funding 3Rs programs
  - Development of related 3Rs infrastructures or technologies
  - Issues related laws and regulations
Local Government

- Adopt 3Rs Policy goal and strategies
- Issue related ordinances or standards
- Awareness rising and participation programs
- Implement 3Rs programs
- Monitoring and report on 3Rs activities
Key Success Factors

Business Sector
- Develop business plan in accordance with 3Rs Policy
- Conduct R&D on 3Rs technologies
- Cooperation in 3Rs programs
- Monitoring and report on material flows

Civil Society
- Cooperation and participations on 3Rs activities
- Network for monitoring of illegal dumping wastes
- Suggestion and recommendation on waste management programs
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