

#### Division of Technology, Industry and Economics



## Training Manuals on Integrated Solid Waste Management

#### **Mushtaq Ahemd MEMON**

International Environmental Technology Centre (IETC)
OSAKA - JAPAN















## **Training Manuals**



- 1. Waste Data (characterization, quantification and projections)
- Assessment of Waste Management System (Policy, Institutions, Financing, Technology and Stakeholders)
- 3. Targets and Stakeholders' Concerns (environmental, financial, technology and cultural)
- 4. ISWM Plan (policy, technical and voluntary interventions)









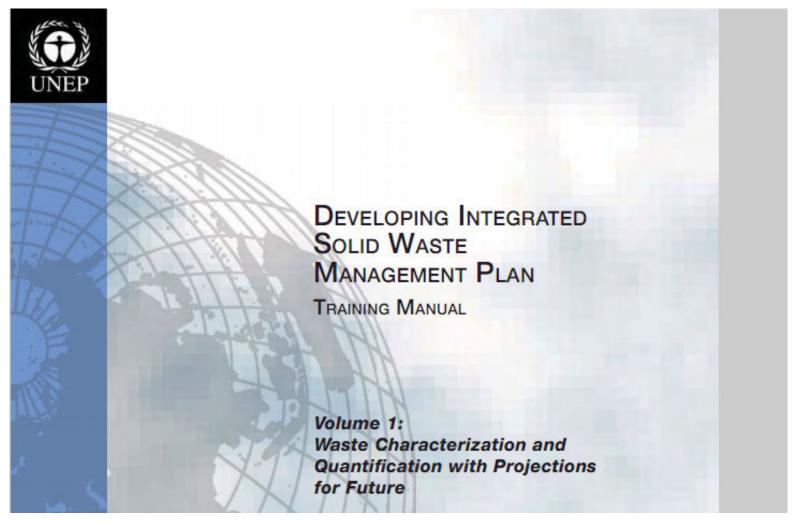






# Training Manual 1 Collection of Waste Data





http://www.unep.or.jp/ietc/Publications/spc/ISWMPlan Vol1.pdf

## **Utility of Waste Data**



- Developing an integrated solid waste management plan;
- Generating comprehensive information on the quantity and type of recyclable and recoverable materials/energy to prioritize the recovery opportunities;
- Developing baseline for continued long-term measurement of system performance;
- Generating information on the different sub-streams of waste to design, implement and monitor an effective and efficient system for collection, transportation, recycling, treatment, recovery, and disposal of various streams of solid waste; and
- Providing comparison of waste composition and waste diversion accomplishments for continuing improvements in integrated solid waste management















### **Important Factors**



#### Resources

- Cost of sample collection & analysis
- Technical expertise
- Laboratory facilities
- Sample collection & sorting equipment

#### Considerations

- Health and environmental risks
- Seasonal variations
- Number & timings of sample collection

















## Roadmap 1



#### **Define Geo-Administrative Boundaries**

#### **Define the Waste Generation Sectors**

Residential, Commercial, Healthcare, Laboratories, Industrial and Construction and Demolition

## Define Municipal and non-municipal Waste Hazardous and non-hazardous waste

#### **Collect Information / Maps**

Zoning (residential, commercial, industrial)

Demographic (current & future)

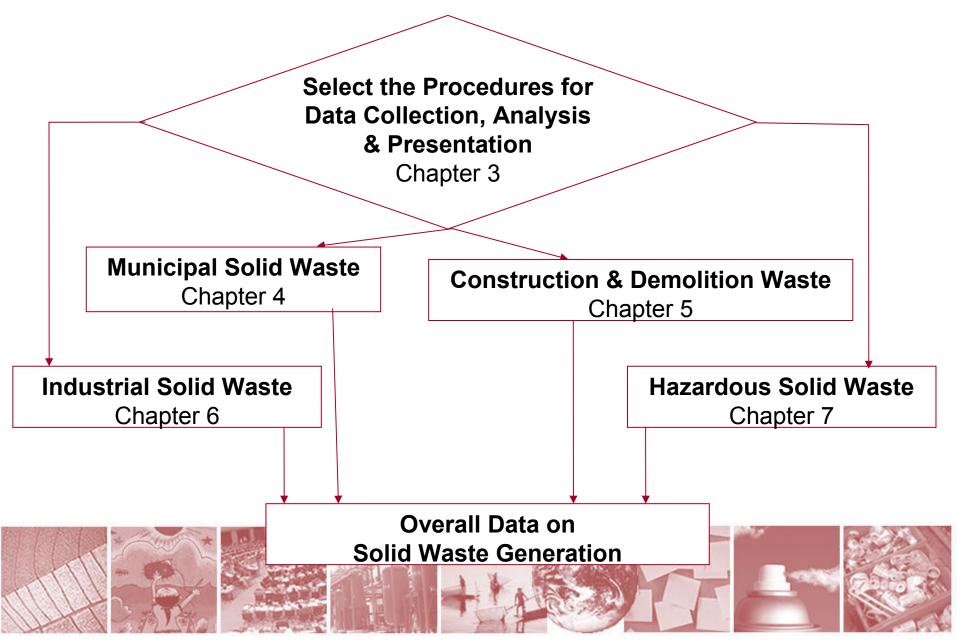
Socioeconomic characteristics

Waste generation rates

Primary data on solid waste

## Roadmap 2







# Training Manual 2 Assessment of the System





http://www.unep.or.jp/ietc/Publications/spc/ISWMPlan\_Vol2.pdf



# Assessment of Waste Management System

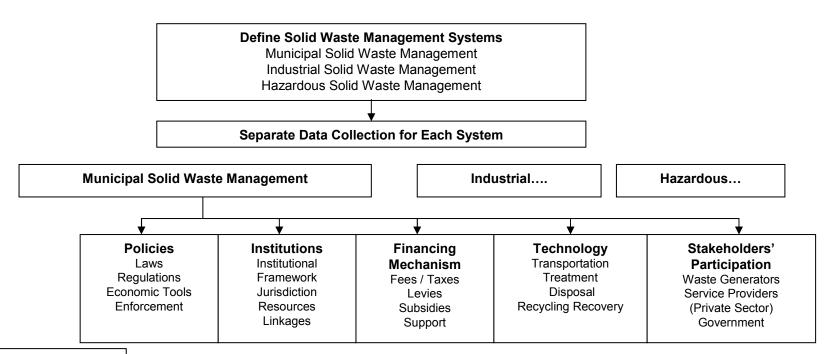


Regulations	Institutions	Financial Mechanisms	Technology & Infrastructure	Stakeholder participation
Regulatory and economic policies for various waste streams / sources	Institutional framework, resources and jurisdiction to manage various waste streams / sources	Financing provisions including subsidies, levies, charges and private sector participation	Collection and transportation  Treatment and disposal  Recycling and recovery	Role of Waste generators  Role of private sector for waste management services and for recycling and recovery

Challenges and Opportunities

### **Roadmap for Assessment**





Source Reductions / "Upstream"

Primary Disposal by Waste Generators

**Collection and Transportation** 

**Treatment and Disposal** 

Reuse, Recycling and Recovery







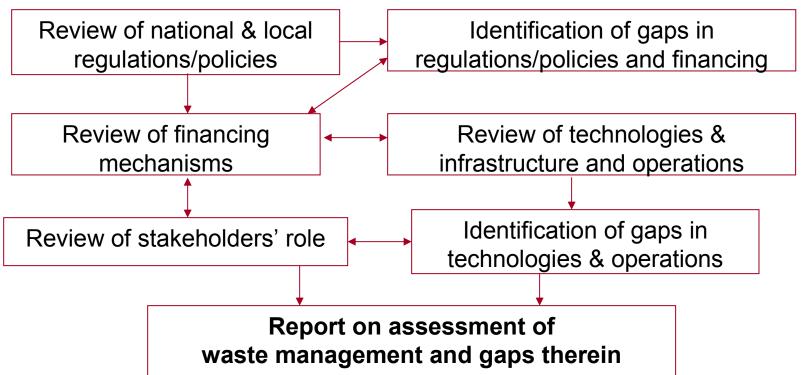




## **Assessment Report**

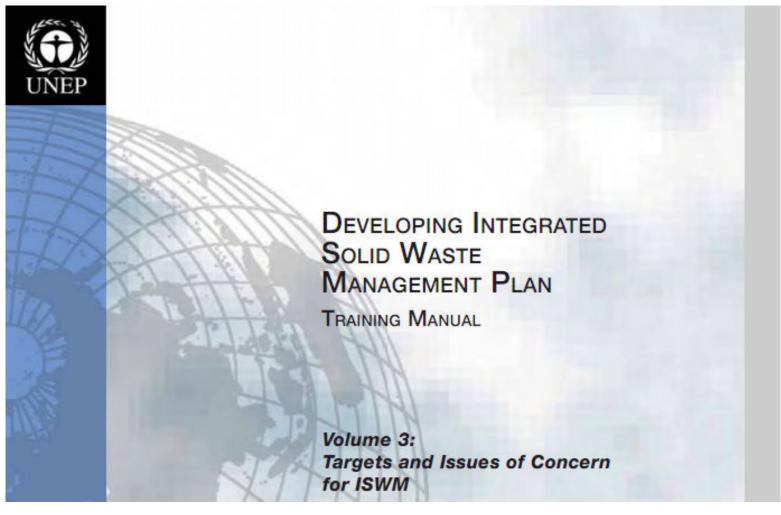


Review of prevailing waste management system & practices



# Training Manual 3 Targets & Stakeholders' Issues





http://www.unep.or.jp/ietc/Publications/spc/ISWMPlan Vol3.pdf

## **Target Setting**



## Mission/Vision Statements

### Social/Political Agenda

Statements related with Waste Management, Public Health, Environment, etc.

Draft of Quantitative & Measurable Targets for Short-term & Long-term

## Stakeholders' Consultations

### **Targets**

