




Division of Technology, Industry and Economics

UNEP

Integrated Solid Waste Management

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OSAKA - JAPAN









UNEP/DTIE/IETC

UNEP

UNITED NATIONS ENVIRONMENTAL PROGRAMME

provides leadership and encourages partnership in caring for the environment.

DTIE

DIVISION OF TECHNOLOGY, INDUSTRY AND ECONOMICS

encourages decision makers to develop and implement policies, strategies and practices that are cleaner, safer and efficient.

IETC

INTERNATIONAL ENVIRONMENTAL TECHNOLOGY CENTER

promotes and implements Environmentally Sound Technologies (ESTs)

- Disaster Prevention
- Waste Management
- Water and Sanitation

IETC Activities on Waste

- UNEP GC decision 26/L2 on Chemicals and Waste Management
- UNEP GC decision 25/8 on Waste
- UNEP Programme of Work
- Basel 9th COP on Waste Management: Bali Strategic Plan for Technology Support and Capacity-building
- Millennium Development Goals
- CSD 18 and 19 on Waste
- Support to MEAs

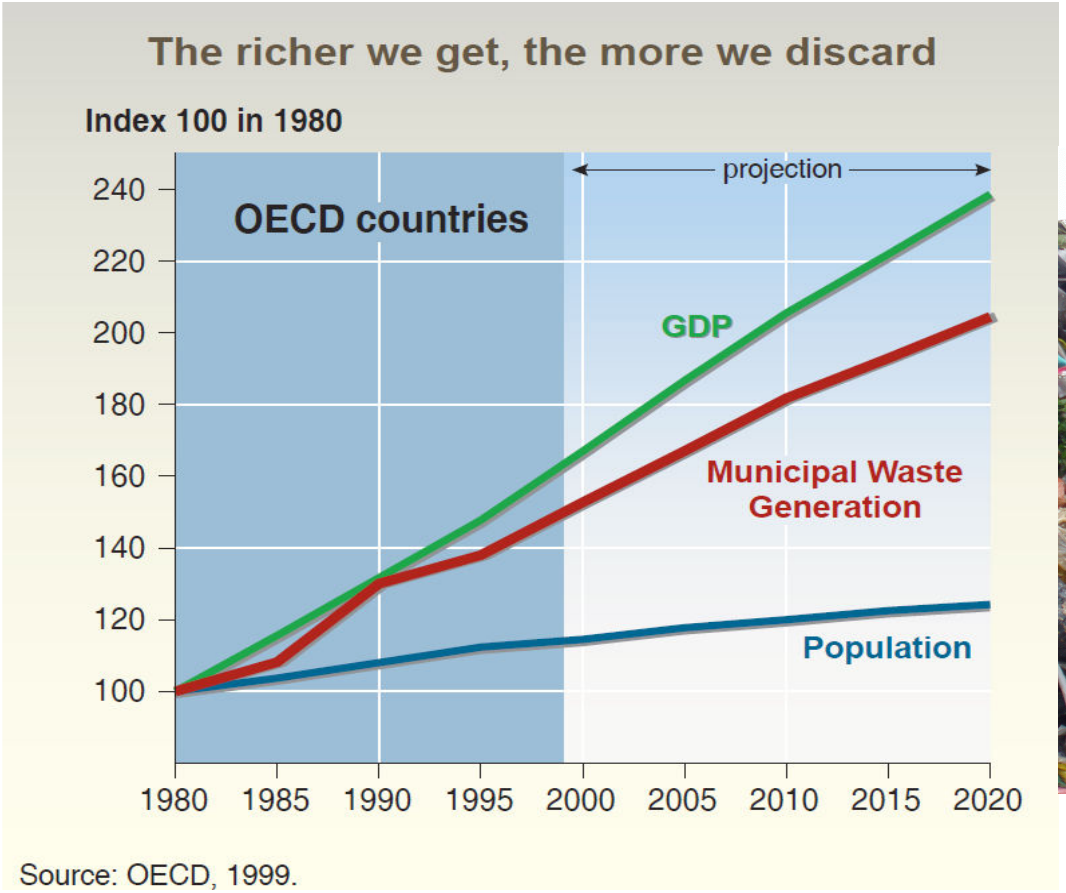
Field Projects:
- Integrated Solid Waste Management
- E-waste
- Waste Plastics
- Waste Agricultural Biomass

Normative function:
- Guidelines and training
- Waste and climate change
- Compendium of technologies

Global Partnership on Waste Management

Information Platform on Waste Management

GDP & Waste Generation



Source: OECD, 1999.

Waste Generation

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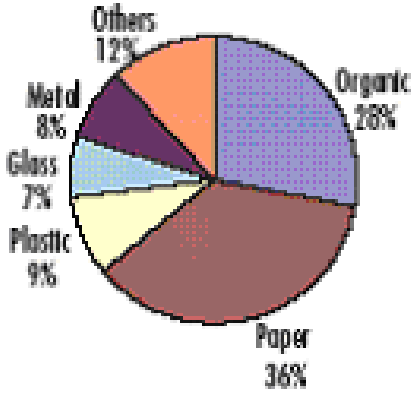
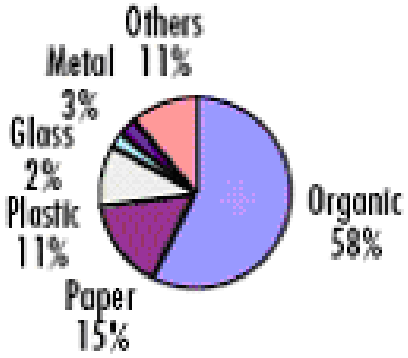
Current Waste Quantities and Composition

High Income Countries: Current
Total waste = 85,000,000 tonnes per year

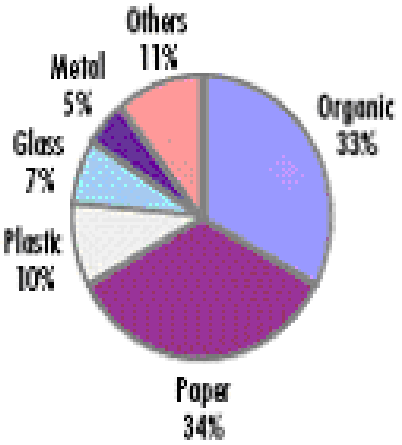


Middle Income Countries: Current
Total waste=34,000,000 tonnes per year

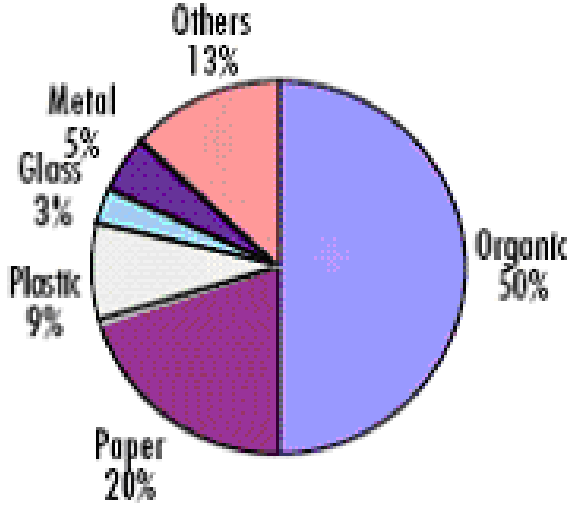


2025 Waste Quantities and Composition

High Income Countries: Year 2025
Total waste=86,000,000 tonnes per year



Middle Income Countries: Year 2025
Total waste=111,000,000 tonnes per year



Challenges and Opportunities

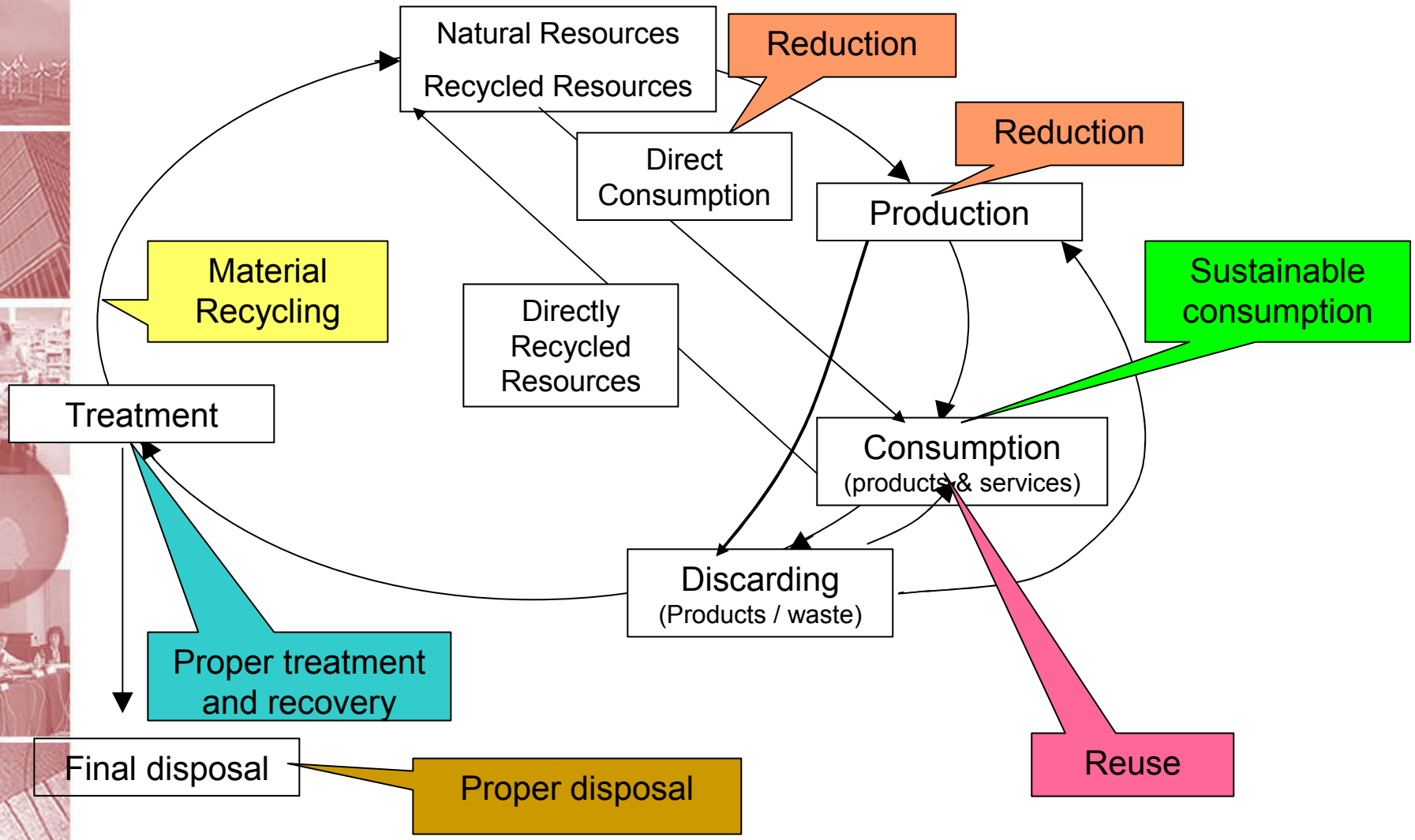
- Cities with increase in economic activities - enormous levels of waste including hazardous and toxic wastes
- Changing lifestyles - composition of waste is also changing
- A growing realization of the negative impacts that wastes on environment, land, human health, climate and so on
- Complexity, costs and coordination of waste management has necessitated multi-stakeholder involvement in every stage of the waste stream. This calls for an integrated approach to waste management.
- Local Governments are now looking at waste as a *business opportunity*, (a) to extract valuable resources contained within it that can still be used and (b) to safely process and dispose wastes with a minimum impact on the environment

Defining ISWM

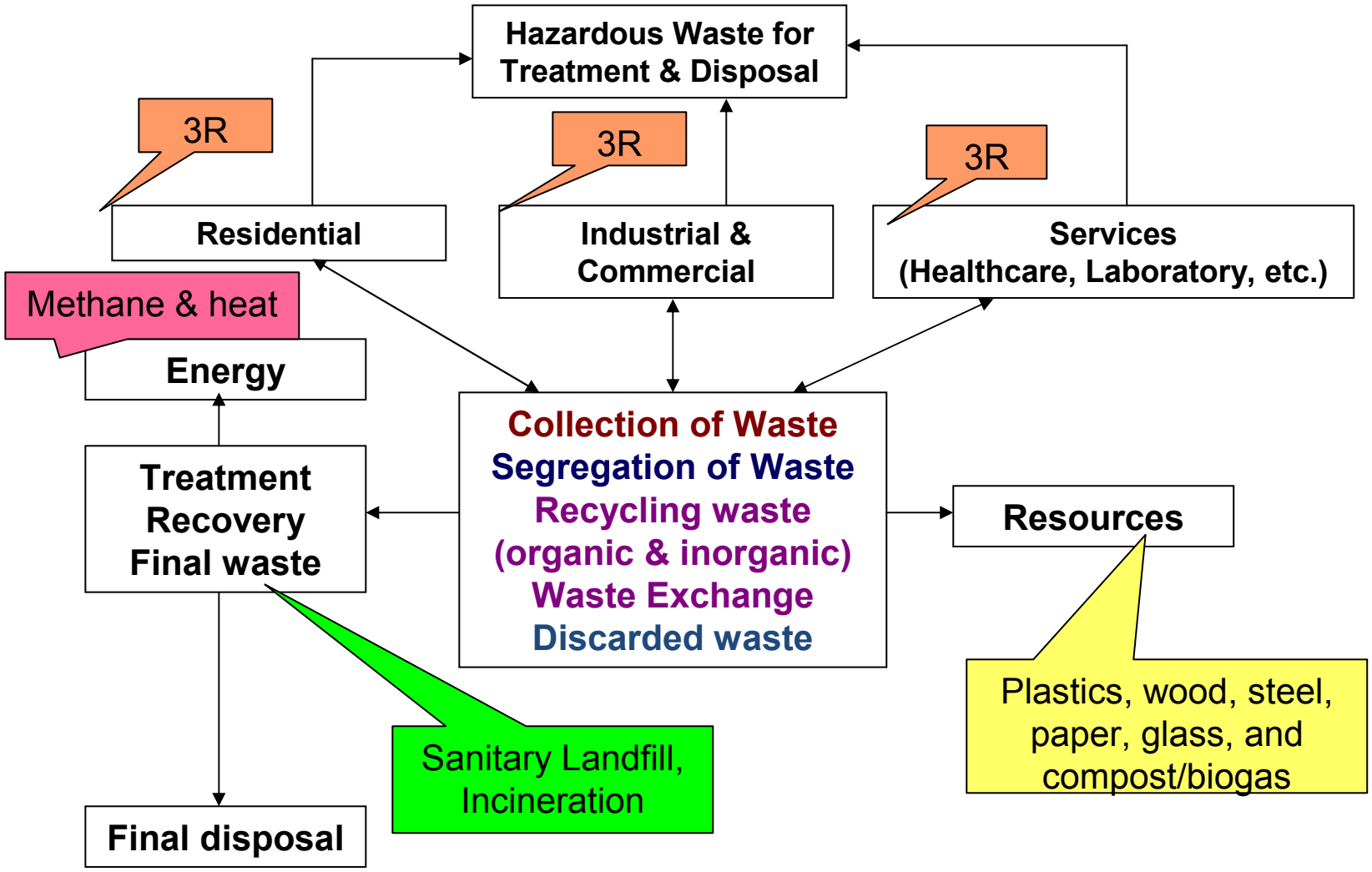
Integrated solid waste management refers to the strategic approach to sustainable management of solid wastes covering all sources and all aspects, covering generation, segregation, transfer, sorting, treatment, recovery and disposal in an integrated manner, with an emphasis on maximizing resource use efficiency.

Integrated Solid Waste Management

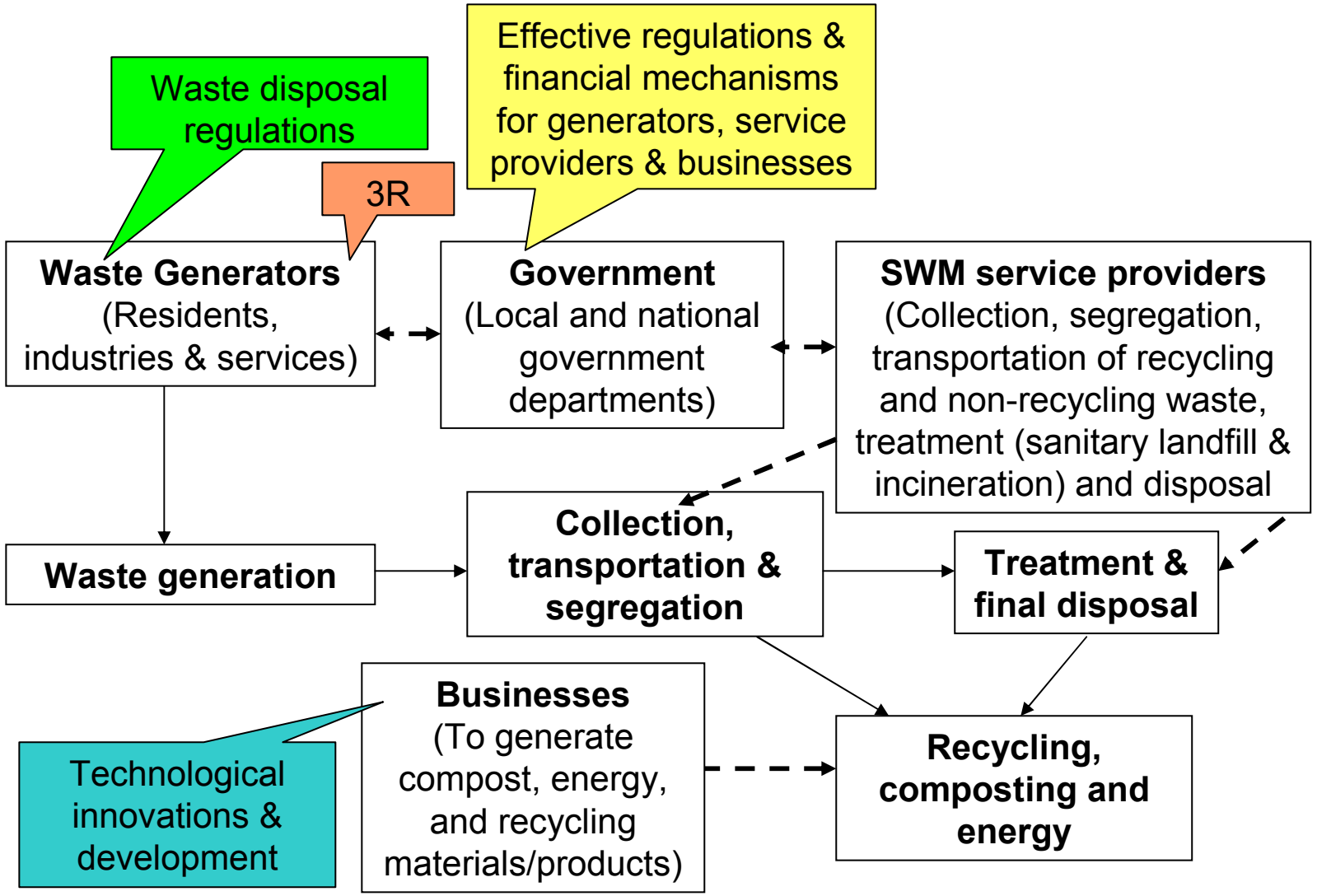
Life-cycle Perspective



Integrated Solid Waste Management
Generation-Source Perspective



Integrated Solid Waste Management
Stakeholders/Management Perspective



Benefits of ISWM

Cleaner and safe neighborhoods

Higher resource use efficiency

Resource augmentation

Savings in waste management costs due to reduced levels of final waste for disposal

Better business opportunities and economic growth

Local ownership & responsibilities / participation

Turning vicious circle into virtuous circle

ISWM Coverage

Geographical and administrative boundaries

Jurisdiction (municipal, industrial) limits

Institutions involved and administrative mandate

Sectors and sub-sectors: (residential , commercial, industrial, urban agriculture, healthcare, construction debris, and sludge)

Waste streams (hazardous and non-hazardous)

Recyclable and non-recyclable waste

Benefits of ISWM

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ISWM Plan

- **An ISWM Plan per se is a package consisting of a Management System including:**

  Policies (regulatory, fiscal, etc.),

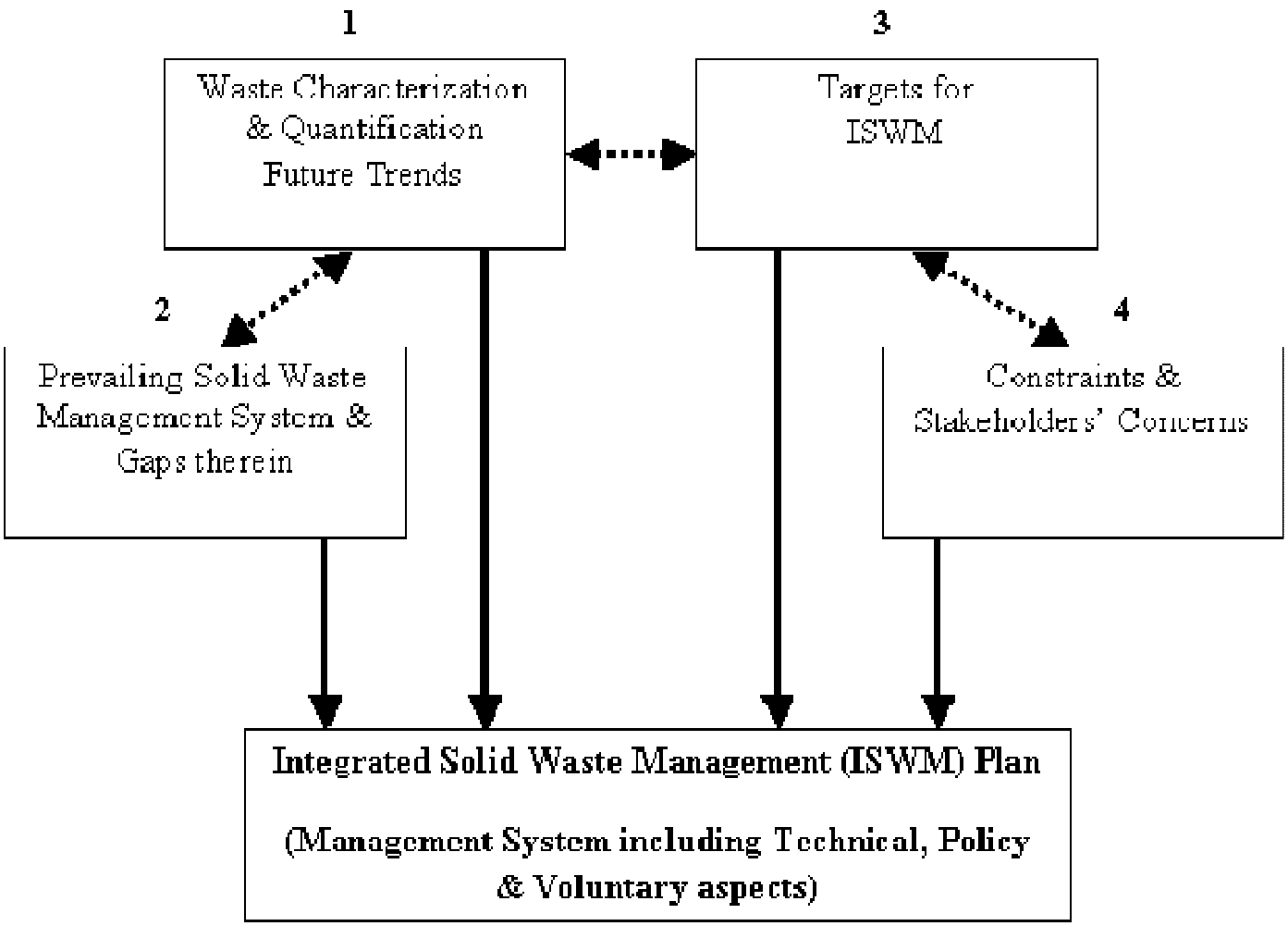
  Technologies (basic equipment and operational aspects)

  Voluntary measures (awareness raising, self regulations)

- **A Management System covers all aspects of waste management; from waste generation through collection, transfer, transportation, sorting, treatment and disposal.**

- **Data and information on waste characterization and quantification (including future trends), and assessment of current solid waste management system for operational stages provide the basis for developing a concrete and locality-specific management system.**

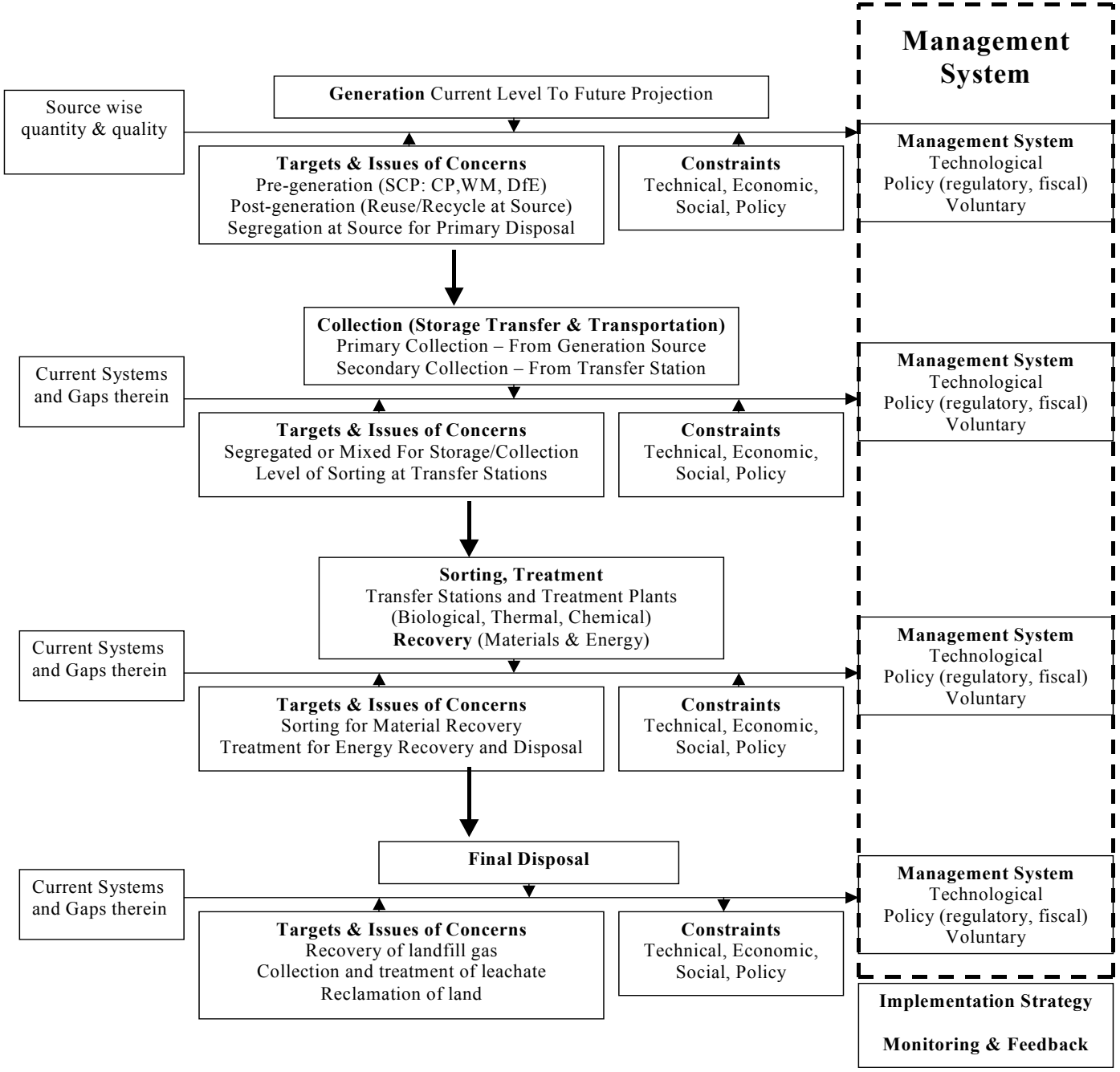
Process to Develop ISWM Plan



Development of Sub-management Systems

1. Generation Level
2. Collection & Transportation
3. Sorting, Treatment and Recovery
4. Final Disposal

Outline of ISWM Plan



Activities on ISWM

1. Role of IETC
   - Implementation of ISWM projects with local partners
   - Local capacity building - training & field activities
   - Normative function – Training, Compendia, Lessons
2. IETC Projects on ISWM
   - ISWM Plan for Wuxi New District, PRC
   - ISWM Plan for Pune City, India
   - ISWM Plan for Maseru City, Lesotho
   - ISWM Plan for Matale, Sri Lanka
   - ISWM Plan for Novo Hamburgo, Brazil
   - ISWM Plan for Nairobi, Kenya
   - ISWM Plan for Bahir Dar, Ethiopia
   - ISWM Plan for Pathum Thani, Thailand (on-going)
   - ISWM Plan in Indonesia (starting soon)
   - ISWM Plan for Addis Ababa (under consideration)

UNEP Strategy for ISWM

1. Within UNEP

   ISWM activities to support Bali Strategic Plan on Capacity Building and Technology Support & to assist in UNEP Waste Strategy & Action Plan

2. Beyond UNEP

   ISWM as one of the sub-focal areas under the Global Partnership on Waste Management Partnership (GPWM) to:

   develop partnerships with multilateral & bilateral donors to support implementation of ISWM Plans

   develop partnerships with other organizations working for Waste Management – complimenting & multiplier effect for wider coverage of International Cooperation

Lessons

- Top level political commitment as well as interest and commitment of local authorities is crucial to the success of project
- Baseline data is usually not available and requires considerable time and resources
- Local project teams are very essential
- It is very difficult to get cost related date in current waste management systems

Lessons … contd.

- Stakeholder consultation provides vital information and greatly improve local ownership
- ISWM approach being new requires continuous capacity building in partner institutions
- Benefits of proper waste management should be looked not just from environmental perspective but economic and social benefits should also be factored in
- Continuous follow-up is required to support implementation

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Thank You...