



By Mahtab Asari

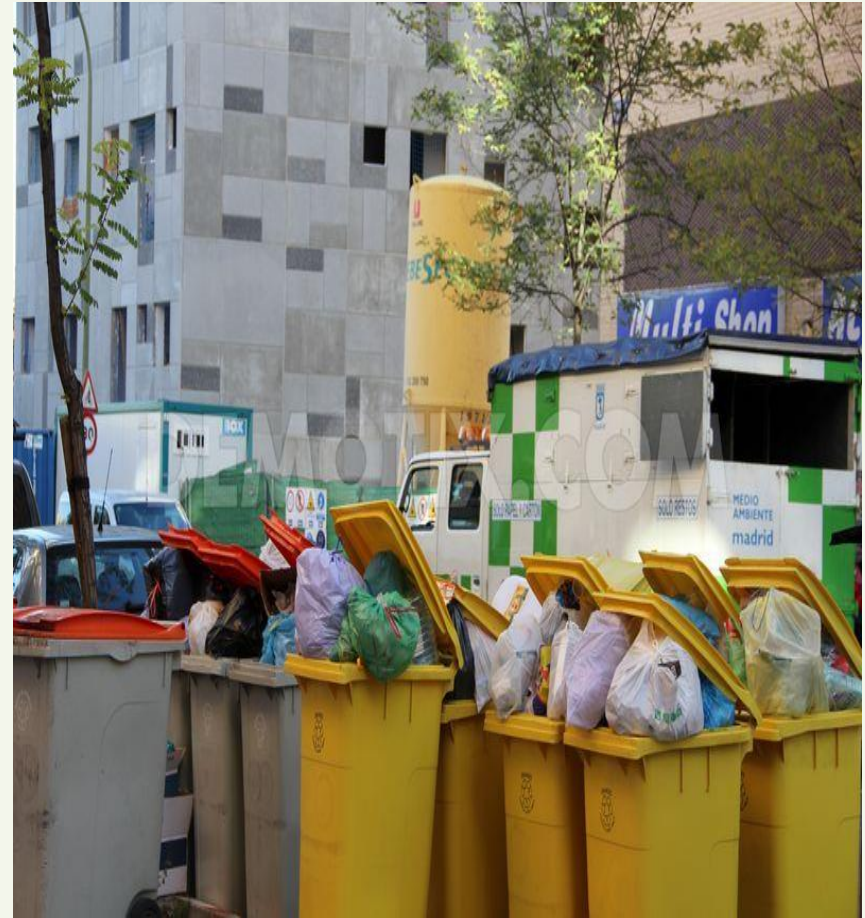
Main Objectives of This Session

This session provided some information about the:

- Process of storage, collection, and transport of waste;
- An approach to sound waste management.

Storage, Collection, Transport

- Collection and transport is normally the most expensive part of a waste management system.
- It typically represents two _third of total cost in most countries.



Condition of Storage Container

The type of storage container used depends on:

- I. The rate of waste generation;
- II. Frequency and system of collection;
- III. The type of waste to be collected;
- IV. Ability to pay for that container.



Waste Segregation

❑ It is the process by which waste is separated into different elements.

❑ Hand sorting was the first method used in the history of waste sorting.



Collection and Transport

- This process includes all steps from storage to final treatment and disposal.
- It is the most expensive part of waste management system and involve: labor and vehicle.



In collection and Transport process the following factors must be taken into consideration:

- I. Type of waste (categories, characteristics (high/low density), and generation rate),
- II. Climate,
- III. Population density,
- IV. Road and traffic (condition/ accessibility),
- V. Type of storage containers used,
- VI. Vehicles(availability, separate parts, maintenance costs, fuel cost, consumption, load capacity, etc),
- VII. Final treatment(type and distances from collection area),
- VIII.Labor cost

Waste collection can be carried out in different ways, such as:

I. Communal Collection

II. Block Collection

III. Door to Door Collection

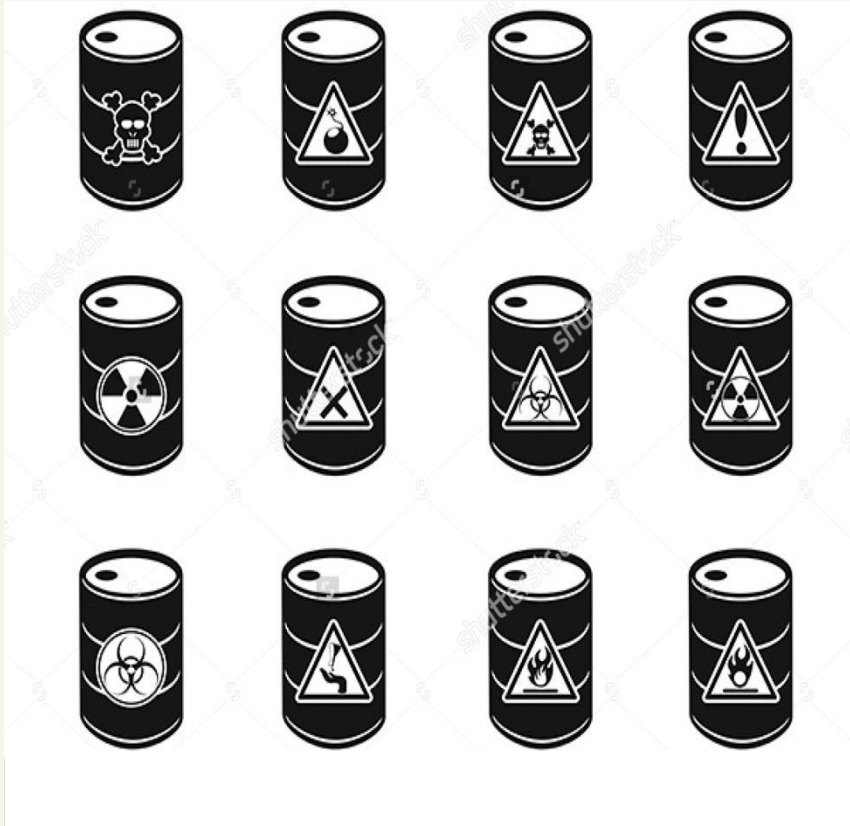


Special precaution for hazardous waste

An increasing trend is that specific systems are implemented for specific type of waste:

- Large generator such as chemical industry transport their waste directly to the destruction plant;
- Electric/ Electronic devices with hazardous component can be returned to the producer or to the shop that once sold them.





At the collection point, it is absolutely necessary to determine the type of waste, its hazardous properties, separate and label them to avoid any damage to personnel and equipment.

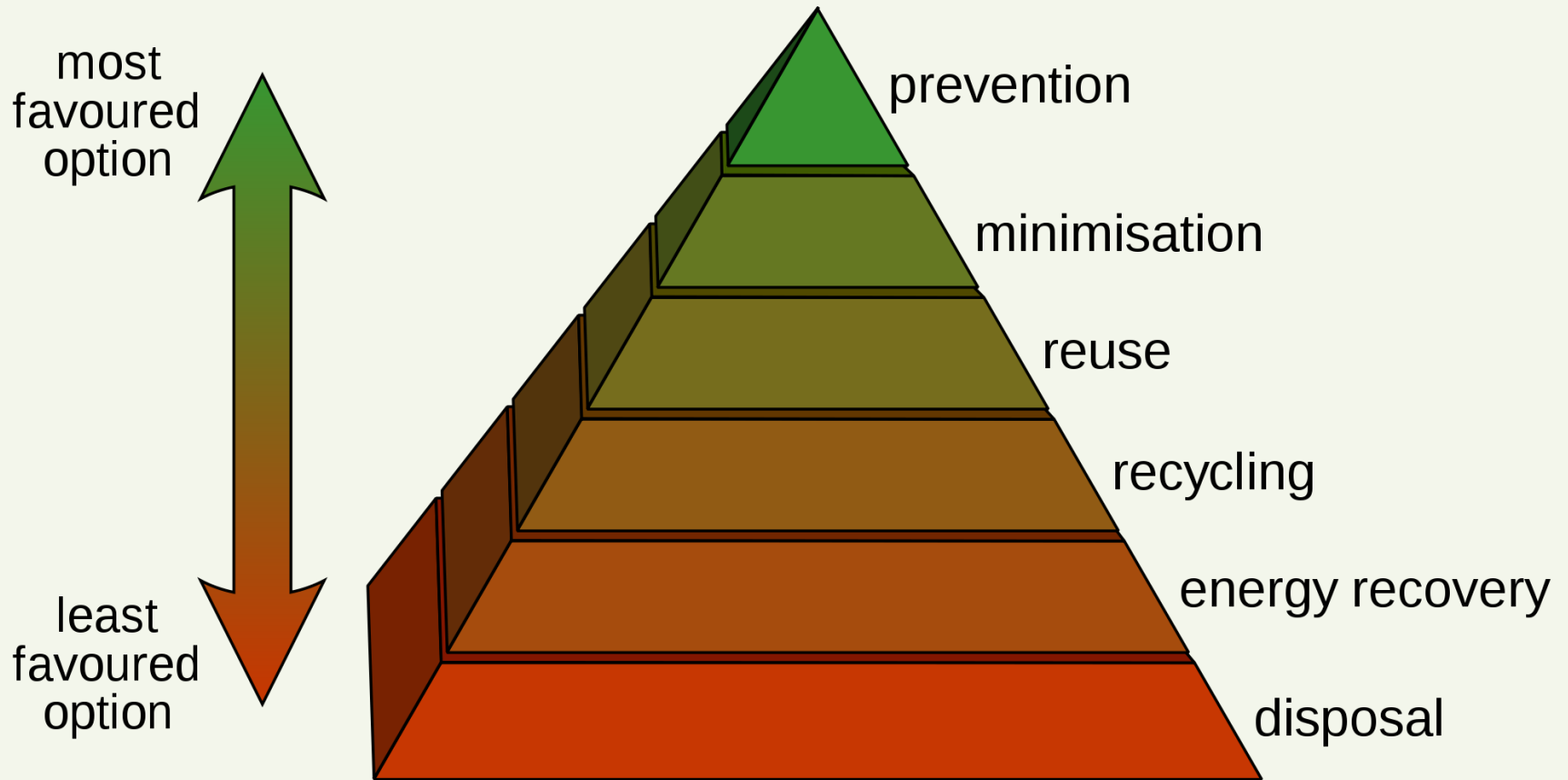
Transportation

Most type of hazardous waste are also dangerous goods and should be transported in accordance with local laws, regulates among others:

- I. Training of driver and co driver;
- II. Type of packaging to be used;
- III. Labeling and marking of packing and vehicle
- IV. Equipment on vehicle(absorbent, stop blocks, fire extinguisher, flashlight, etc.)

Waste Management Strategy refer to the discipline associated with the control of generation, storage, collection, transfer and transport, processing, and disposal of solid wastes in a manner that is in accord with the best principles of public health, economics, engineering, aesthetics, and other environmental considerations.

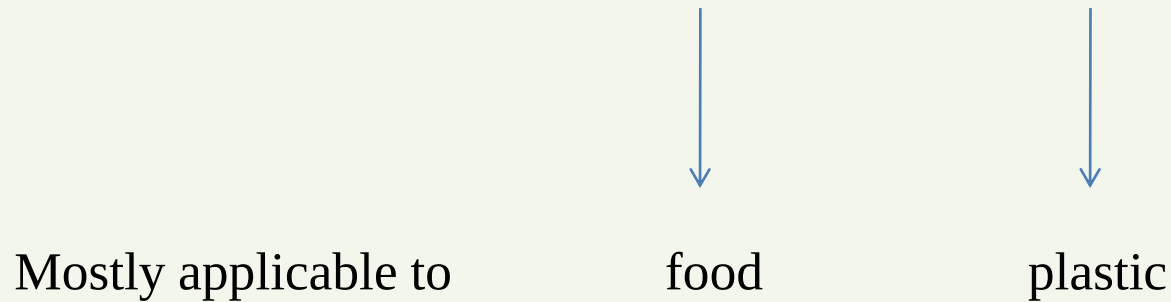
Waste Management Strategy



Waste Reduction

Source Reduction involves reduction or elimination in quantity or toxicity of materials during the manufacturing process.

Waste reduction: waste prevention+ waste Minimization



II. Waste Recovery(Reuse+ Recycling)

Material Recovery

❑ Reuse refers to materials that can be used again in their original form.

❑ Recycling is the process of collecting and processing materials that would otherwise be disposed of as waste and turning them into new products.(bottles are melted down, even compost is produced)



II. Waste Recovery(Reuse+ Recycling)

Energy Recovery:

- Incineration(production of water, steam or electricity)
- Use directly as a fuel



Incineration(all type of waste)

The advantages of controlled incineration are:

- It is an efficient way to reduce waste volume and thereby the need for landfill space;
- It can replace the use of fossil fuel such as oil or coal
- The climate emissions from alternative treatment method such as land filling will be reduced.



Incineration(all type of waste)

The disadvantages of controlled incineration are:

- It is a technically complicated process that requires skilled person
- It is best suited for waste high in energy and low in moisture and it must be supplemented with other methods since it can treat only a portion of waste
- If not done properly, incineration can be major source of pollution.



Treatment of Hazardous Waste

- Thermal destruction
- Neutralization
- Physical stabilization
- Miscellaneous



Land filing

- Sanitary landfills;
- Controlled dump;
- Open uncontrolled dump



1. Could you describe the process of waste management in your hometown?
2. DO your people attend to waste segregation?



Thanks for your *Attention*