

**Faculty of medical laboratory science
public health MLS-PUBH-322
sem.6**

Waste Management

What are Wastes?

Definition of Wastes

“**Substances or objects** which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of the law”

Disposal means:

“any **operation** which may lead to resource recovery, recycling, reclamation, direct re-use or alternative uses (Annex IVB of the Basel convention)”

Kinds of Wastes

Solid wastes: domestic, commercial and industrial wastes
especially common as co-disposal of wastes

Examples: *plastics ,bottles, papers, scrap iron*

Liquid Wastes: wastes in liquid form

Examples: *domestic washings, chemicals, oils, waste water from ponds, manufacturing industries and other sources*

Classification of Wastes according to their Properties

Bio-degradable

can be degraded (paper, wood, fruits and others)

Non-biodegradable

cannot be degraded (plastics, bottles, old machines, cans, containers and others)

Classification of Wastes according to their Effects on Human Health and the Environment

Hazardous wastes

Substances unsafe to use commercially, industrially, agriculturally, or economically that are shipped, transported to or brought from the country of origin for dumping or disposal in, or in transit through, any part of the territory of the Philippines

Non-hazardous

Substances safe to use commercially, industrially, agriculturally, or economically that are shipped, transported to or brought from the country of origin for dumping or disposal in, or in transit through, any part of the territory of the Philippines

Sources of Wastes



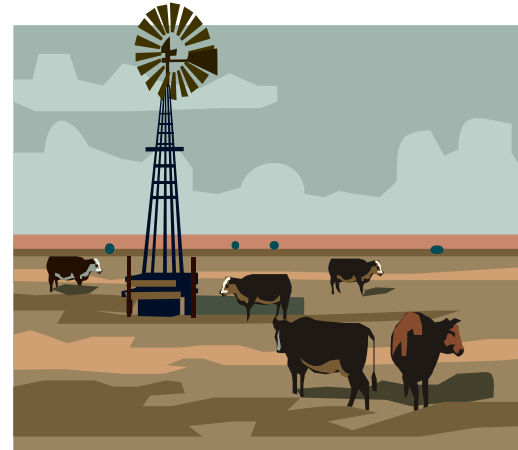
Households



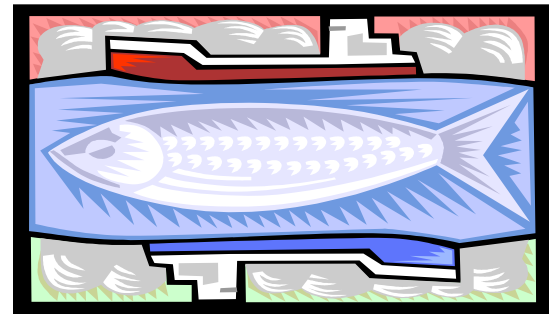
Commerce and Industry

Sources of Wastes

Agriculture



Fisheries



Waste Generation by Country

(Global Waste Survey Final Report Published by IMO 1995)*

Countries	Amount /year
Japan	395 M tonnes/year
Germany	104 M tonnes/year
Netherlands	6.1 M tonnes/year
Hungary	102 M tonnes/year
Poland	130 M tonnes/year
Romania	607 M tonnes/year
Bahrain	92,000 tonnes/year
China	6 B tonnes/year
Philippines	1.3 M tonnes/year

**from primary and secondary industry sectors*

EFFECTS OF WASTE IF NOT MANAGED WISELY

- **Affects our health**
- **Affects our socio-economic conditions**
- **Affects our coastal and marine environment**
- **Affects our climate**

WHAT SHOULD BE DONE

- **Reduce Waste**

- Reduce office paper waste by implementing a formal policy to duplex all draft reports and by making training manuals and personnel information available electronically.
- Improve product design to use less materials.
- Redesign packaging to eliminate excess material while maintaining strength.
- Work with customers to design and implement a packaging return program.
- Switch to reusable transport containers.
- Purchase products in bulk.

WHAT SHOULD BE DONE

Reuse

- Reuse corrugated moving boxes internally.
- Reuse office furniture and supplies, such as interoffice envelopes, file folders, and paper.
- Use durable towels, tablecloths, napkins, dishes, cups, and glasses.
- Use incoming packaging materials for outgoing shipments.
- Encourage employees to reuse office materials rather than purchase new ones.

WHAT SHOULD BE DONE

Donate/Exchange

- old books
- old clothes
- old computers
- excess building materials
- old equipment to local organizations

WHAT SHOULD BE DONE

Employee Education

- **Develop an “office recycling procedures” packet.**
- **Send out recycling reminders to all employees including environmental articles.**
- **Train employees on recycling practices prior to implementing recycling programs.**
- **Conduct an ongoing training process as new technologies are introduced and new employees join the institution.**

WHAT SHOULD BE DONE

Employee Education

- **education campaign on waste management that includes an extensive internal web site, quarterly newsletters, daily bulletins, promotional signs and helpful reference labels within the campus of an institution.**

WHAT SHOULD BE DONE

Preventing Waste

- packaging waste reductions and changes in the manufacturing process
- use biodegradable materials

WHAT SHOULD BE DONE

Conduct outreach program adopting an ecologically sound waste management system which includes:

- waste reduction
- segregation at source
- composting
- recycling and re-use
- more efficient collection
- more environmentally sound disposal

ENVIRONMENTAL MANAGEMENT SYSTEMS: EMS

What is an EMS?

An EMS is a formal set of policies and procedures that define how an organization will evaluate, manage, and track its environmental impact. It follows the basic model:

Plan > Do > Check > Act

This facilitates cost-effective environmental performance by defining and continuously improving the process and actions that an organization undertakes to meet its environmental goals.

EMS Development

- **A Policy Statement that communicates an organization's environmental priorities to employees.**
- **Managerial endorsement of the policy statement demonstrates the organization's commitment to the effort and willingness to allocate resources for implementation.**
- **Once a policy statement is in place, the organization implements it following the model.**

Stages in the Implementation of EMS

1. Plan

Identify all environmental aspects: any environmental or health and safety impacts resulting from activities and services. The organization then evaluates each aspect according to a variety of criteria:

- **understanding of eco-ethics**
- **environmental and health effects**
- **economic impacts**
- **liabilities**

After establishing a complete list of significant aspects, the organization sets environmental goals and develops a plan to achieve those goals.

2. Do

The 'do-phase' of the model involves implementation of the environmental plan through employee training and establishment of operation controls.

3. Check

Evaluates progress toward meeting program goals through ongoing monitoring and measuring and periodic EMS audits.

4. Act

Involves taking corrective action to update and improve the environmental plan. For example, if an organization makes significant progress on one environmental aspect, another environmental aspect will replace it on the priority list.

Why Should an Organization Adopt an EMS?

1. Improve environmental performance

It helps monitor energy and water conservation, resource efficiencies, and pollution prevention.

2. Better regulatory compliance

Increase regulatory compliance which is especially important for organizations that spend time and resources with regulatory violations.

3. Certification and recognition

EMS implementation can enhance an organization's image and improve public community relations.

ISO 14000 and ISO 14001



That ends my presentation.

I hope this lecture will make you aware of
what is happening to our **environment**.

Now I urge you to join
Eco-Ethics International Union
to help build a better house for humanity!

Thank you for listening!