

# Education and Training on waste management

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**THEME: “EFFECTIVE WASTE MANAGEMENT IN AFRICA”**

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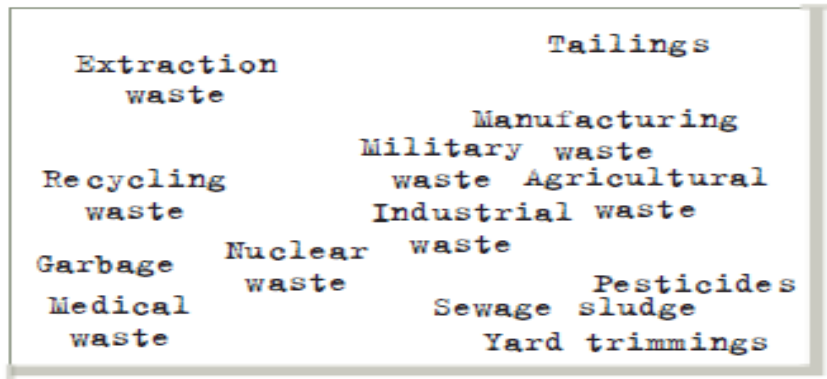
# Order of Presentation

- **Introduction**
- **Life Cycle Assessment of a product**
- **Waste and public health**
- **Waste management pyramid**
- **Education and Training**

# Introduction

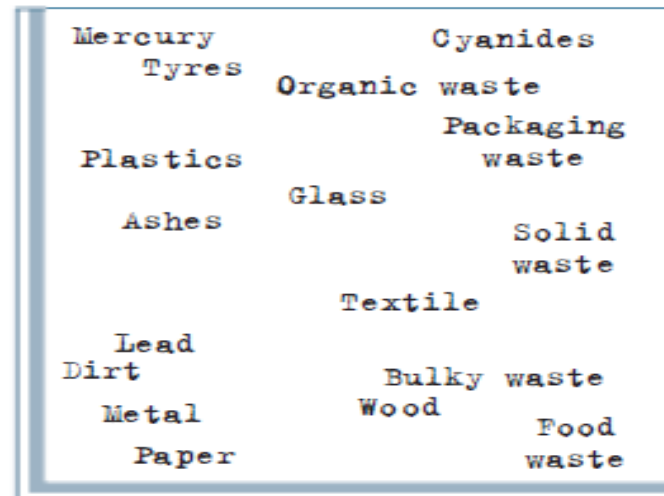
## Origin

what human activities generate waste?

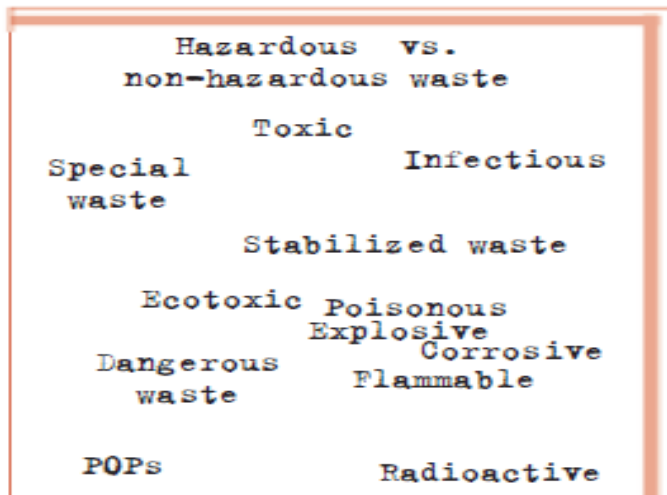


## Composition

what is waste made of?

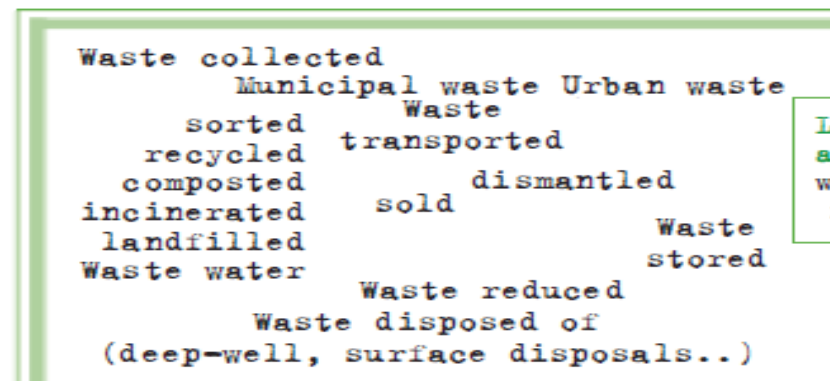


## TOTAL WASTE



## Toxicity

how dangerous is it for human health and the biosphere?

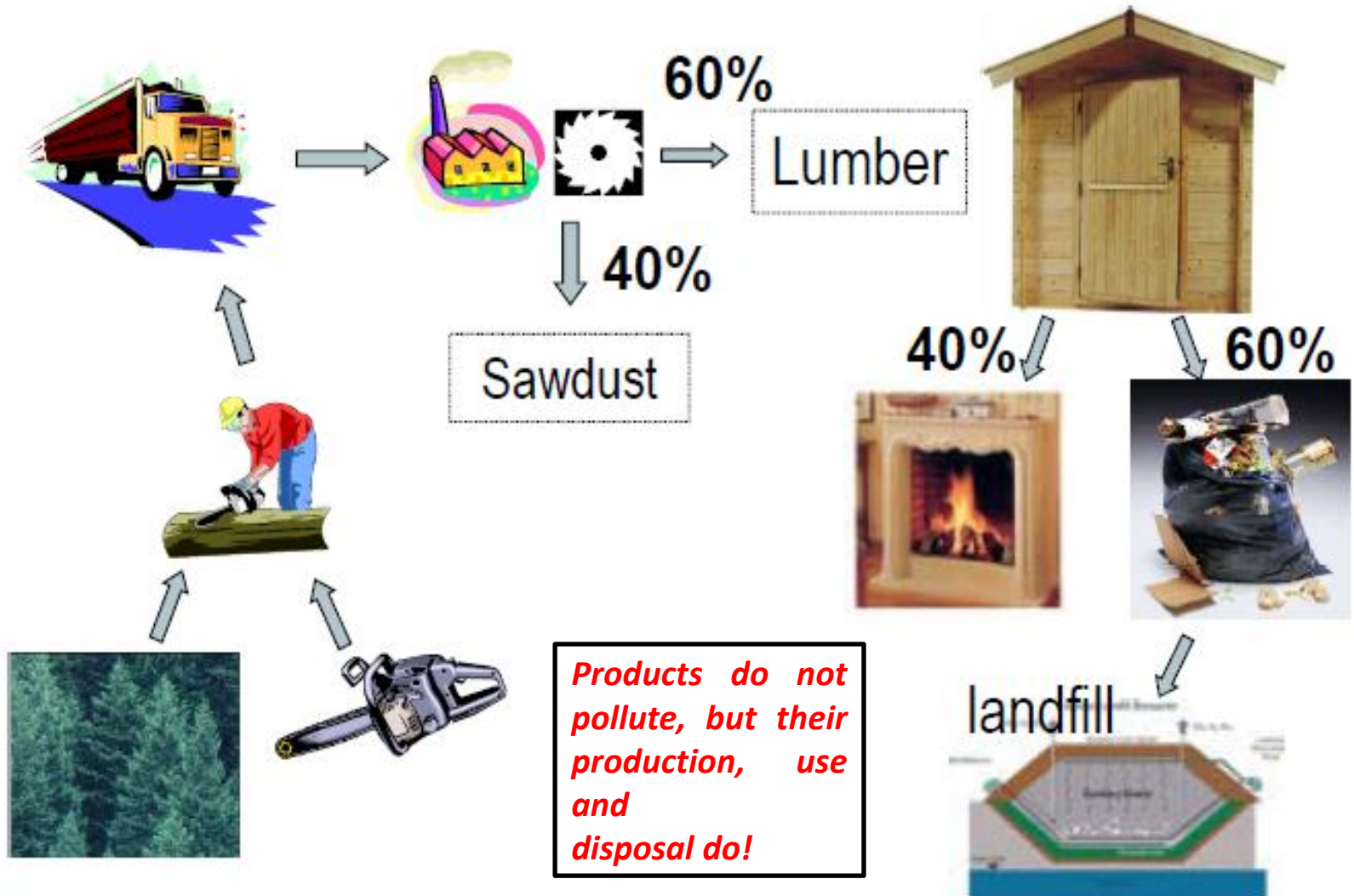


Life cycle approach : waste as a resource

## Management

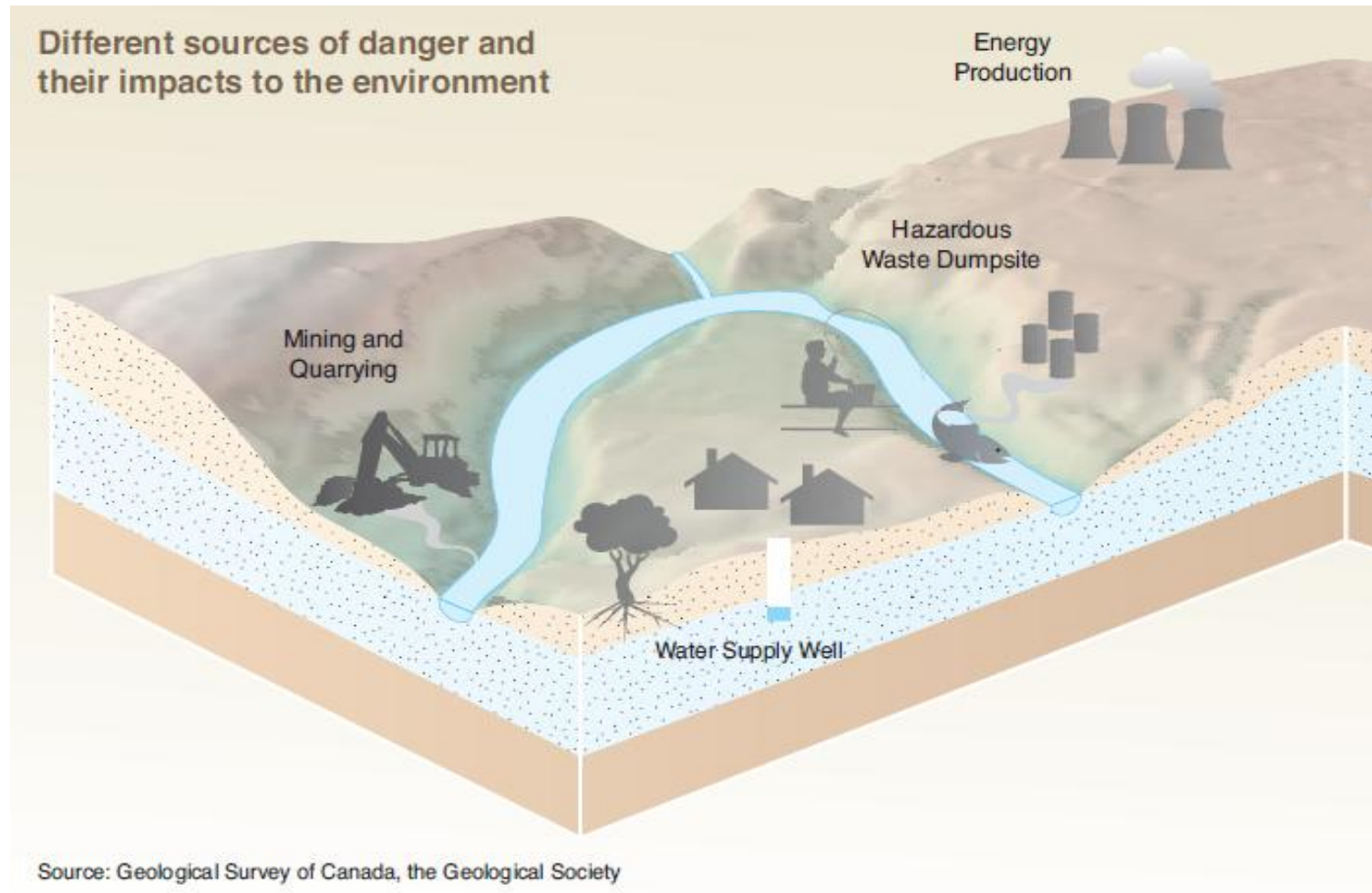
how is waste handled? who is in charge?

# Life Cycle Assessment of a product



# Waste and public health: what are the dangers?

- ❖ **Surface Water & Groundwater Contamination:** can affect all levels of an ecosystem



# Waste and public health: what are the dangers?

## ❖ Groundwater Contamination

Contaminated groundwater can adversely affect animals, plants and humans if it is removed from the ground by manmade or natural processes

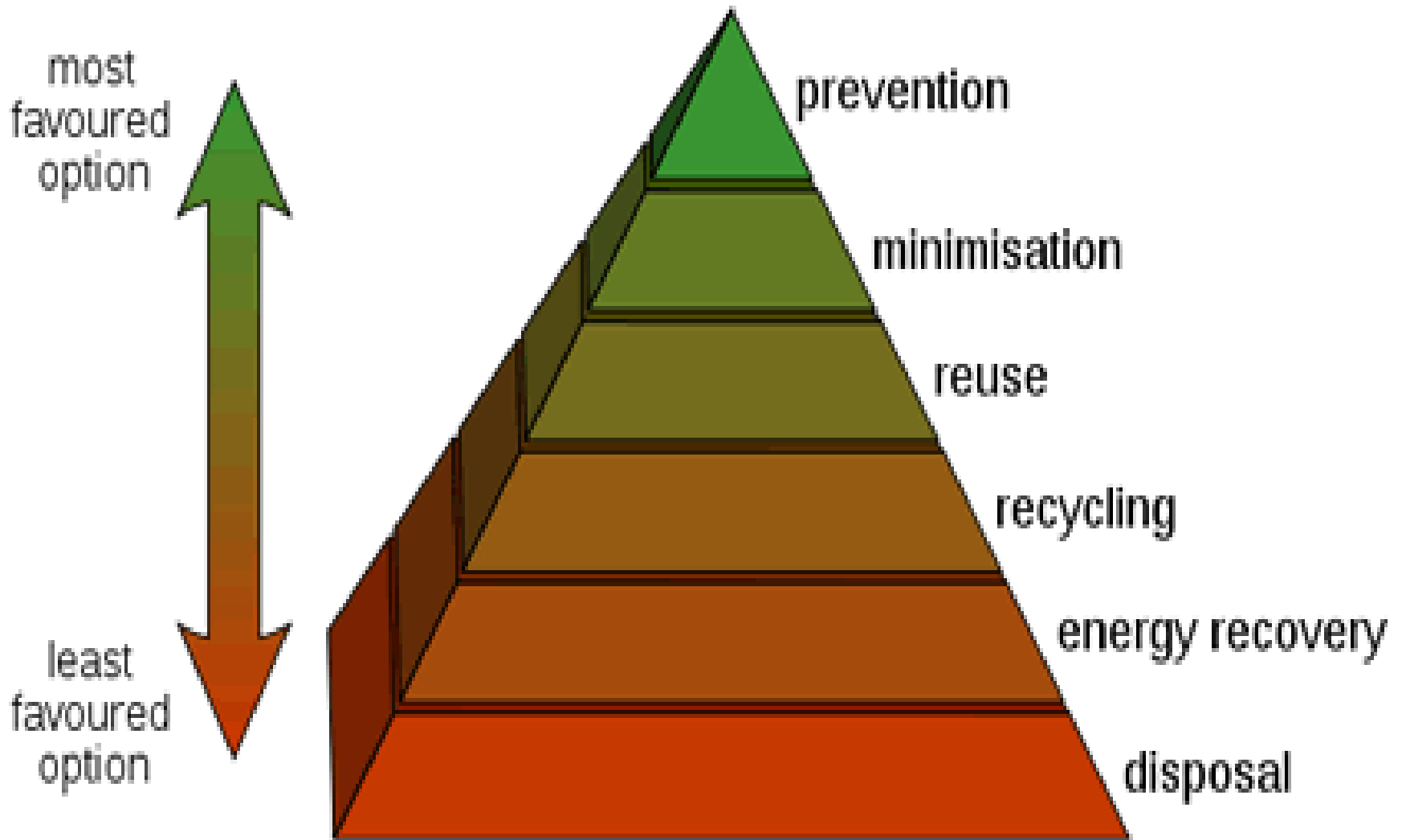
## ❖ Air Contamination

Air contaminants can:  
cause respiratory problems,  
harm animals and humans when they contact the skin  
Plants can also be affected by exposure to contaminants

## ❖ Soil contamination

Contaminants in the soil can harm plants when they take up the contamination through their roots

# Waste management pyramid



# Education and Training

- 1) Provide theoretical and concepts
  - *Capacity building (Human or Technical)*
  - A strong involvement of Universities and Research Institutions is needed here.
  
- 2) From concept to applications
  - *Development of treatment technologies*
  - Partnership and collaboration between Universities & Research Institutions with private companies is very important for the materialization of concepts.



# Solid waste management treatment options

- **Biological reprocessing**
- **Incineration**
- **Landfilling**
- **Ocean dumping**
- **Plasma gasification**
- **Recycling**



# Liquid waste management treatment options

- Aerated lagoon
- Activated sludge
- Anaerobic reactor
- Constructed wetland
- Oxidation ditch
- Stabilization ponds



# THANK YOU