SOLID WASTE MANAGEMENT

ZERO WASTE

PLAN OF PRESENTATION

- Introduction to waste and types
- Solid waste
- Types of solid waste
- Effects of solid waste
- Waste management concept
- Concept of 3R
- solid waste management
  - storage
  - collection
  - waste handling and transport
  - method of disposal
- Technology
- Zero waste system
- Recommendation

WASTE

- It is defined as

  Waste (also known as rubbish, trash, refuse, garbage, junk) is any unwanted or useless materials.

  OR

  Any materials unused and rejected as worthless or unwanted and “A useless or profile less activity using or expanding or consuming thoughtlessly or carefully.”

TYPES OF WASTE

- Solid waste
- Liquid waste
- Gaseous waste
- Animal by product(ABPs)
- Biodegradable waste
- Chemical waste
- Commercial waste/ Business waste
- Biomedical waste
- Bulky waste

SOLID WASTE

- It is defined as

  " non liquid, non-soluble materials ranging from municipal garbage to industrial wastes that contain complex & sometimes hazardous substances"

- Solid waste also include
  - Garbage
  - Rubbish
  - Demolition products
  - Sewage treatment residue
  - Dead animals
  - Manure and other discarded material.

    -- Per capita solid waste out put 0.25-2.5 Kg/day

SOURCE

- Agriculture
- Fisheries
- Household
- Commerce and industry

TYPES

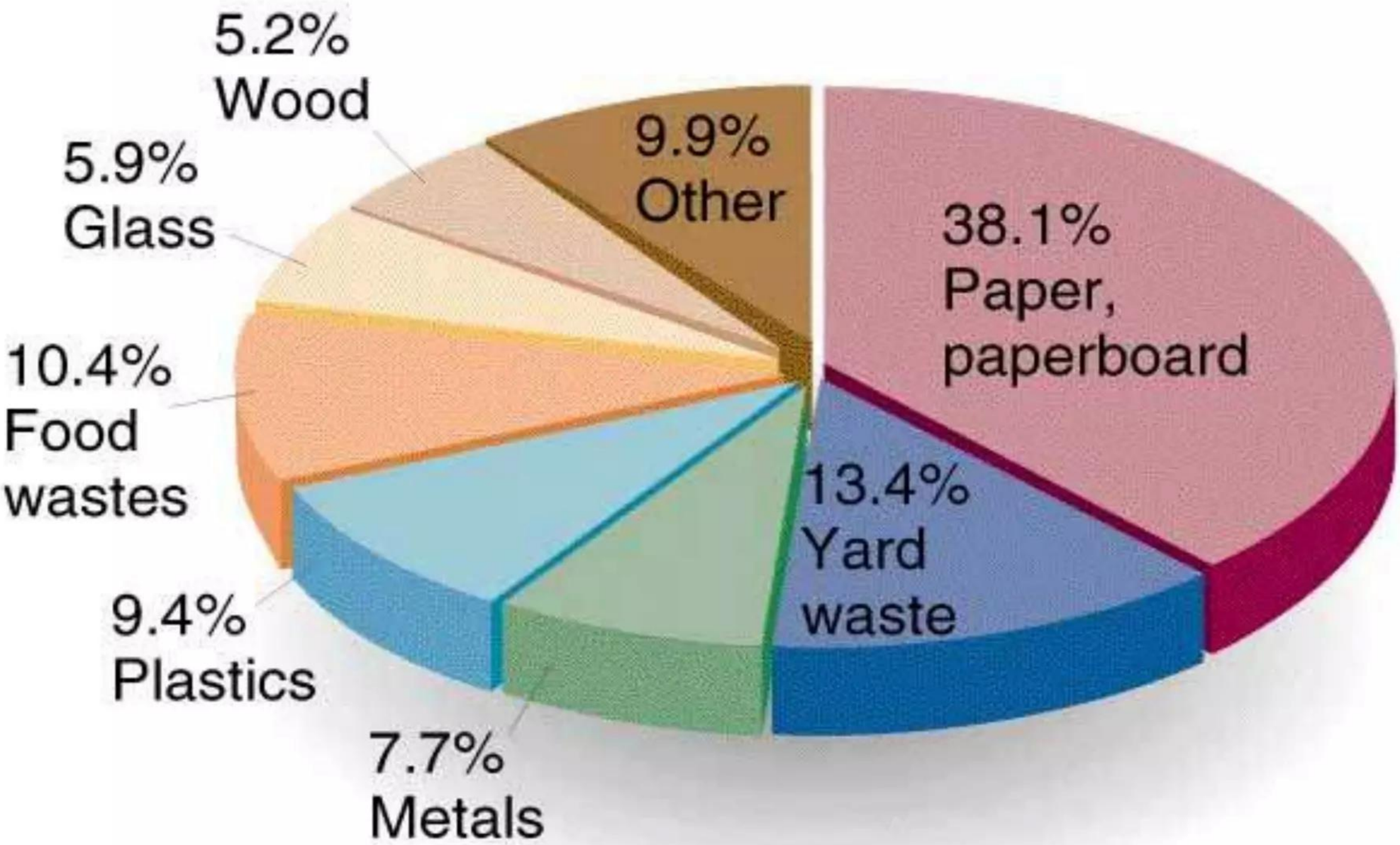
Broadly there are 3 types of waste which as follows

1. Household waste as municipal waste
2. Industrial waste as hazardous waste
3. Biomedical waste or hospital waste as infectious waste

1. MUNICIPAL SOLID WASTE

- Municipal solid waste consist of---
  - household waste
  - construction and demolition debris
  - sanitation residue
  - waste from streets
- With rising urbanization and change in life style and food habits ,the amount of municipal solid waste has been increasing rapidly and its composition changing.

CHARECTERIZATION OF MUNCIPAL SOLID WASTE



HAZARDOUS WASTE

- Industrial and hospital waste is considered hazardous as they may contain toxic substances
- Hazardous waste could be highly toxic to humans, animals and plants. They are

  - corrosive

  - highly inflammable or explosive
- In the industrial sector the major generators of hazardous waste are the metal' chemical' paper, pesticide, dye and rubber goods industries.
- Direct exposure to chemicals in hazardous waste such as mercury and cyanide can be fatal

HOSPITAL WASTE OR BIOMEDICAL WASTE

- Bio-medical waste means "Any waste which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biological"

  -Bio-medical waste rules ,1998
- It may includes wastes like sharp waste, pathological waste, pharmaceutical waste, genotoxic waste, chemical waste, and radioactive waste etc.

EFFECTS OF SOLID WASTE

A:Health hazard

- If solid waste are not collected and allowed to accumulate , they may create unsanitary conditions.

- This may lead to epidemic outbreaks .

- Many diseases like cholera. Diarrhea, dysentery, plague, jaundice, or gastro-intestinal diseases may spread and cause loss of human lives.

CONTD…

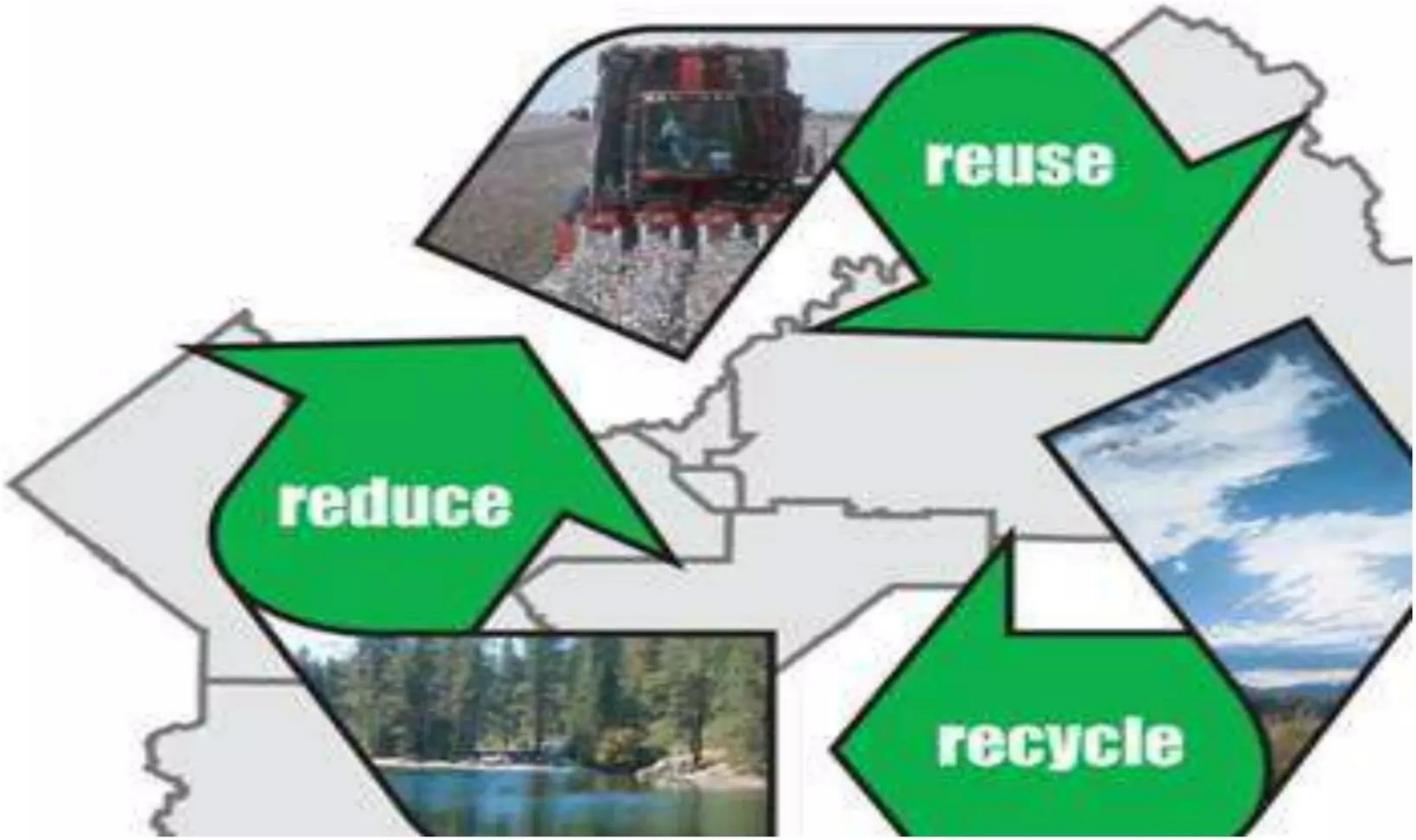
- In addition improper handling of the solid wastes ,a health hazard for the workers who come in direct contact with the waste.

B: Environmental impact

- If the solid wastes are not treated properly decomposition and putrefaction(decay) may take place .
- The organic solid waste during decomposition may generate obnozious (intolerable odour)

WASTE MANAGEMENT CONCEPT

- The 3Rs (Reduce, Reuse, Recycle) to be followed for waste management.



REDUCE

- Disposable goods: paper plate, paper bowl, Styrofoam cup, plastic spoon, roll of paper towels, paper napkin; Durable goods: ceramic/plastic plate, metal spoon, glass/plastic drinking cup, dish towel, cloth napkin)
- Recovery of one tonne paper can save 17 trees.

REUSE

- Instead of buying new containers from the market, use the ones that are in the house.
- Don’t through away the soft drink can or bottle cover them with home made paper or paint on them and use them as pencil stands or small vases.

RECYCLE

- Use shopping bags made of cloth or jute which can be used over and over

WASTE WISE TRUST
What goes around... Comes around...

YOU SEGREGATE WE MANAGE

What We Cannot RECYCLE

Biscuit and chips packets

Wrappers of bread, noodles and wheat flour (ATTA) bags

Thermocole and aluminium lined dishware

Packaging of diapers and sanitary napkins

Cigarette, pan, 'gutkha' packets, small shampoo sachets

Laminated gift wrapping paper

Takeaway Food Parcels

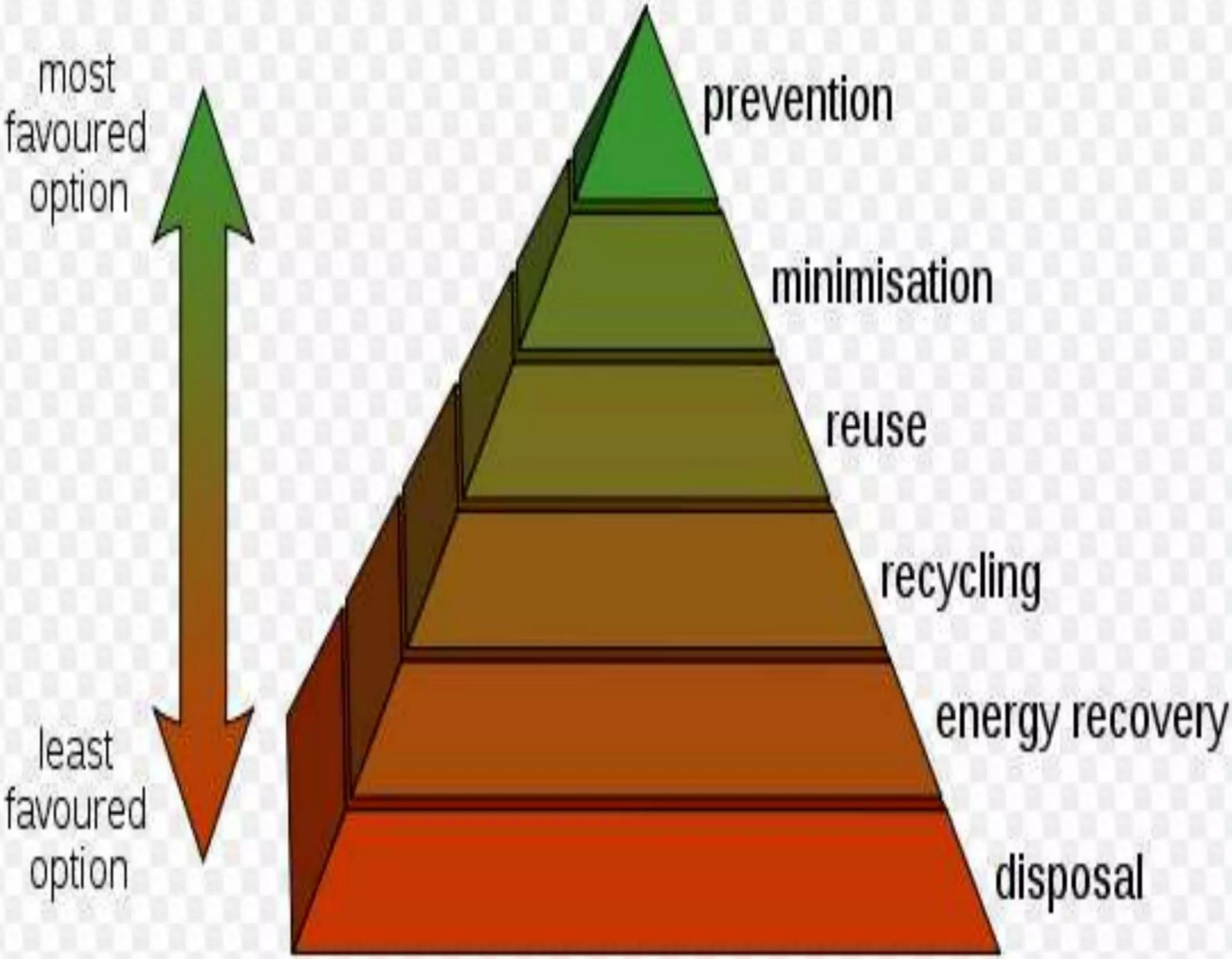
Note: The items listed here have multi layer packaging that makes segregating and recovering plastic or aluminium layers difficult. These items are unlikely to get recycled and end up being a cost to the environment. As far as possible avoid or minimize their use. Look out for or ask for packaging that can be recycled.

WASTE MANAGEMENT HIERARCHY

- There are a number of concepts about waste management which vary in their usage between countries or regions. Some of the most general, widely used concepts include:

1. Waste hierarchy - The waste hierarchy refers to the "3 Rs" reduce, reuse and recycle, which classify waste management strategies according to their desirability in terms of waste minimization. The waste hierarchy remains the cornerstone of most waste minimization strategies.

- The aim of the waste hierarchy is to extract the maximum practical benefits from products and to generate the minimum amount of waste .


most favoured option
least favoured option
prevention
minimisation
reuse
recycling
energy recovery
disposal

CONTD…

- Polluter pays principle - the Polluter Pays Principle is a principle where the polluting party pays for the impact caused to the environment. With respect to waste management, this generally refers to the requirement for a waste generator to pay for appropriate disposal of the unrecoverable material.

SOLID WASTE MANAGEMENT

Waste management is the

- storage
- collection
- transport and handling
- recycling
- disposal and monitoring of waste materials.

STORAGE

- Storage:
  - Galvanized steel dust bin
  - Paper sack
  - Public bins

COLLECTION

- Collection
  - House-to-house collection
  - Collection from the public bins

WASTE HANDLING AND TRANSPORT

- Waste handling and separation involves activities associated with waste management until the waste is placed in storage containers for collection. Handling also encompasses the movement of loaded containers to the point of collection.
- waste is transferred from a smaller collection vehicle to larger transport equipment

RECYCLING

- Recycling refers to the collection and refuse of waste materials such as empty beverage container.
- The materials from which the items are made can be processed into new products.
- Materials for recycling may be collected separately from general waste using dedicated bins.

METHOD OF DISPOSAL

1. Dumping
2. Controlled Tipping or Sanitary Landfill
3. Incineration
4. Composting
5. Manure pits
6. Burial

OBJECTIVES

- Public hygiene and health.
- Reuse, recovery and recycle
- Energy generation
- Sustainable development
- Aesthetics

1. DUMPING

- Low lying areas.
- Mainly for dry refuses
- Kolkata disposes by this
- method and reclaimed land given for cultivation.
- Unsanitary method
  - Exposed to flies and rodents
  - Nuisance
  - Dispersed by wind
  - pollution of surface water

2. CONTROLLED TIPPING/ SANITARY LANDFILL

- Satisfactory method

  - Material placed in a trench

  - compacted with earth at the end of the working day.

- Modified sanitary land fill-where compaction and covering are accomplished once or twice a week.

- 3 Methods
    1. Trench method
    2. Ramp method
    3. Area method

Refuse is compacted on its exposed surface with excavated earth (30 cm).

TRENCH METHOD

- Long trench of 6-10 feet deep and12-36 feet wide.
- Refuse is compacted and covered with excavated earth.
- Refuse is filled up to 6 feet.
- It is estimated one acre of land per year for 10,000 population.
- ***RAMP METHOD:*** suited where the terrain is moderately slopping.

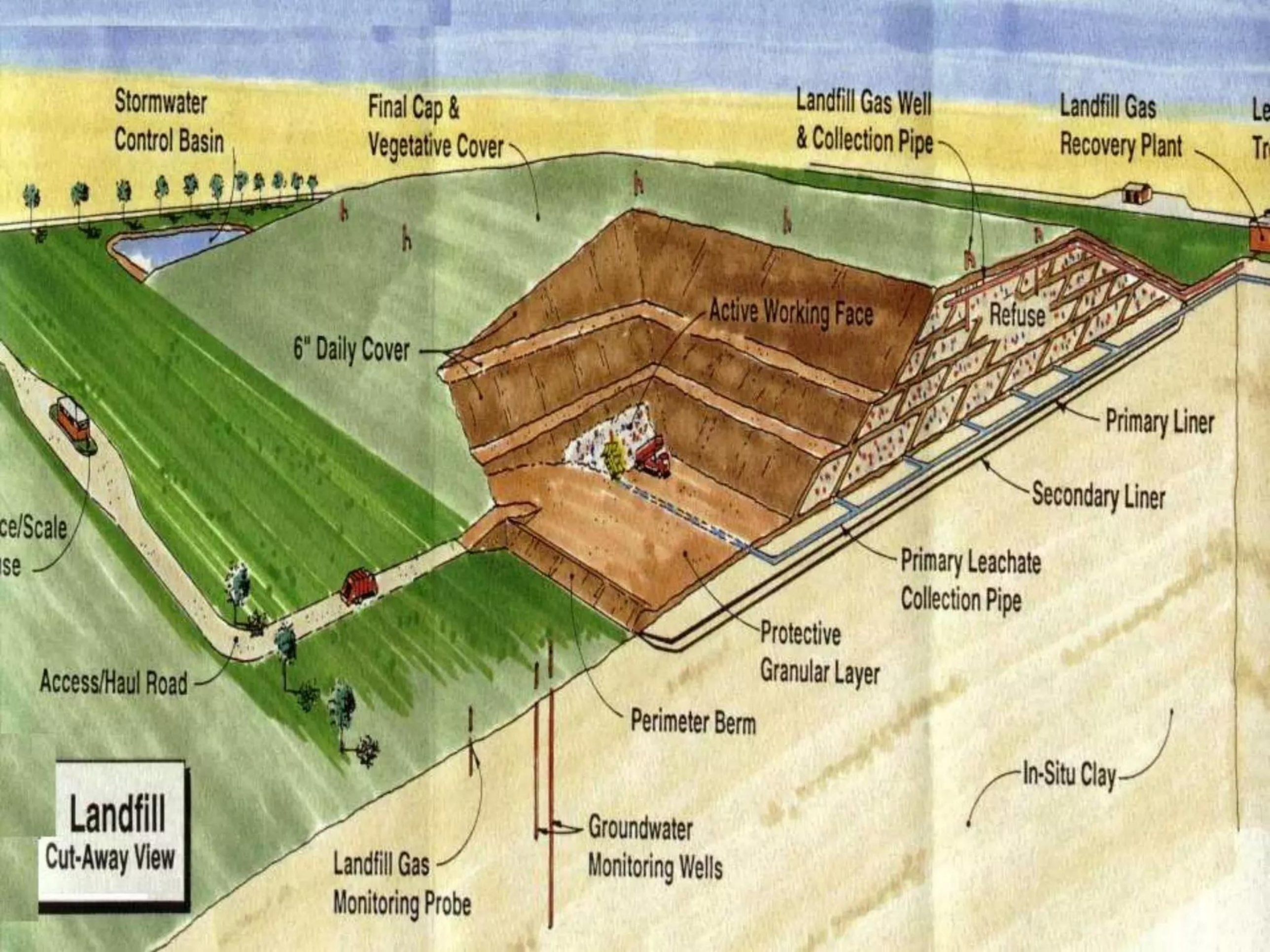
AREA METHOD

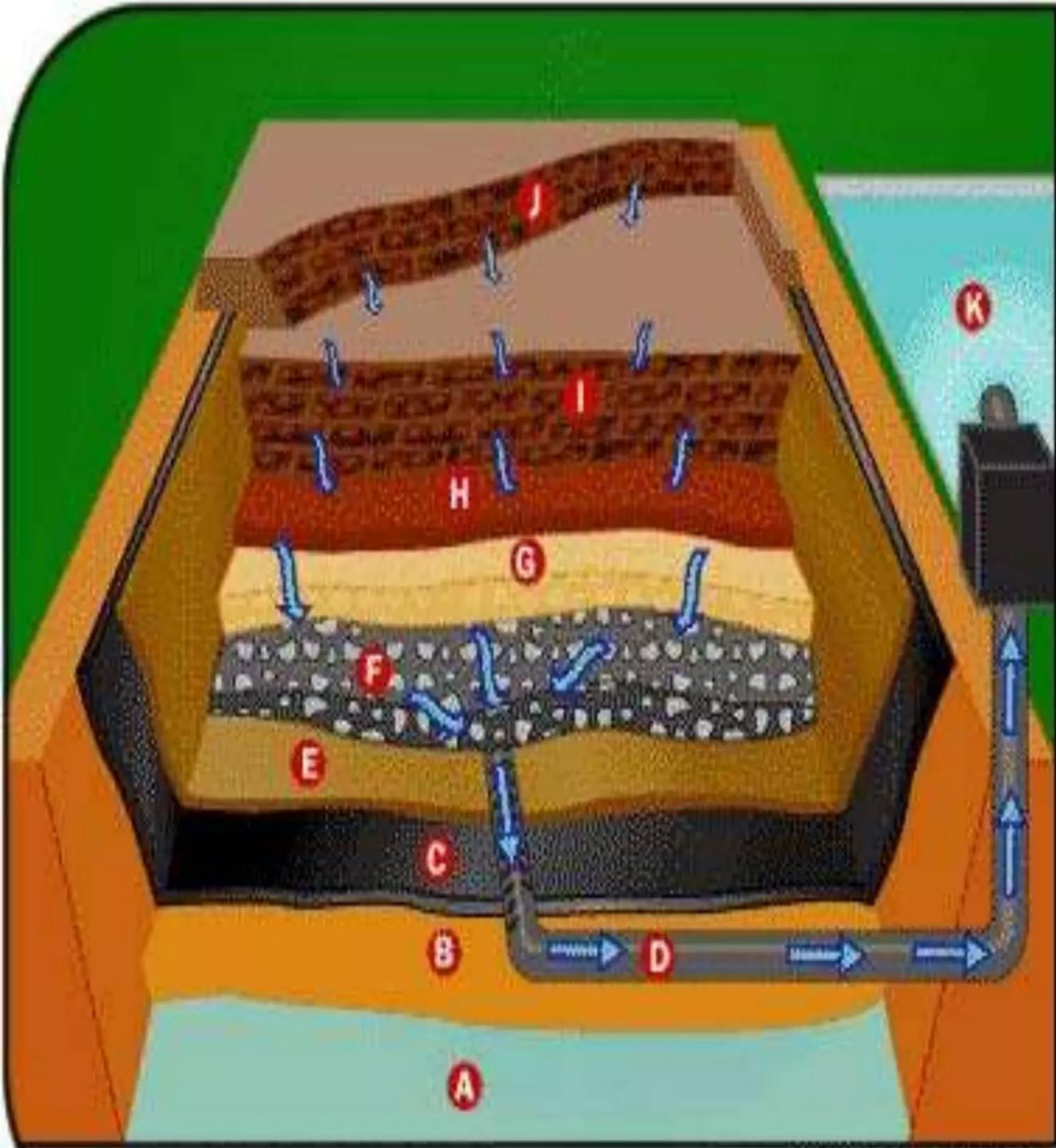
- Used for filling land depressions, disused quarries and clay pits.
- Refuse is deposited, packed and consolidated in uniform layers for 6-8 feet.
- Each layer is sealed with a mud cover at least 12 inches.
- Sealing prevents infestation by flies and rodents.
- Prevents nuisance of smell and dust.

- Changes
  - Chemical
  - Bacteriological
  - Physical

- The temperature rises to over 60 deg. C within 7 days and kills all pathogens and hastens the decomposition process.

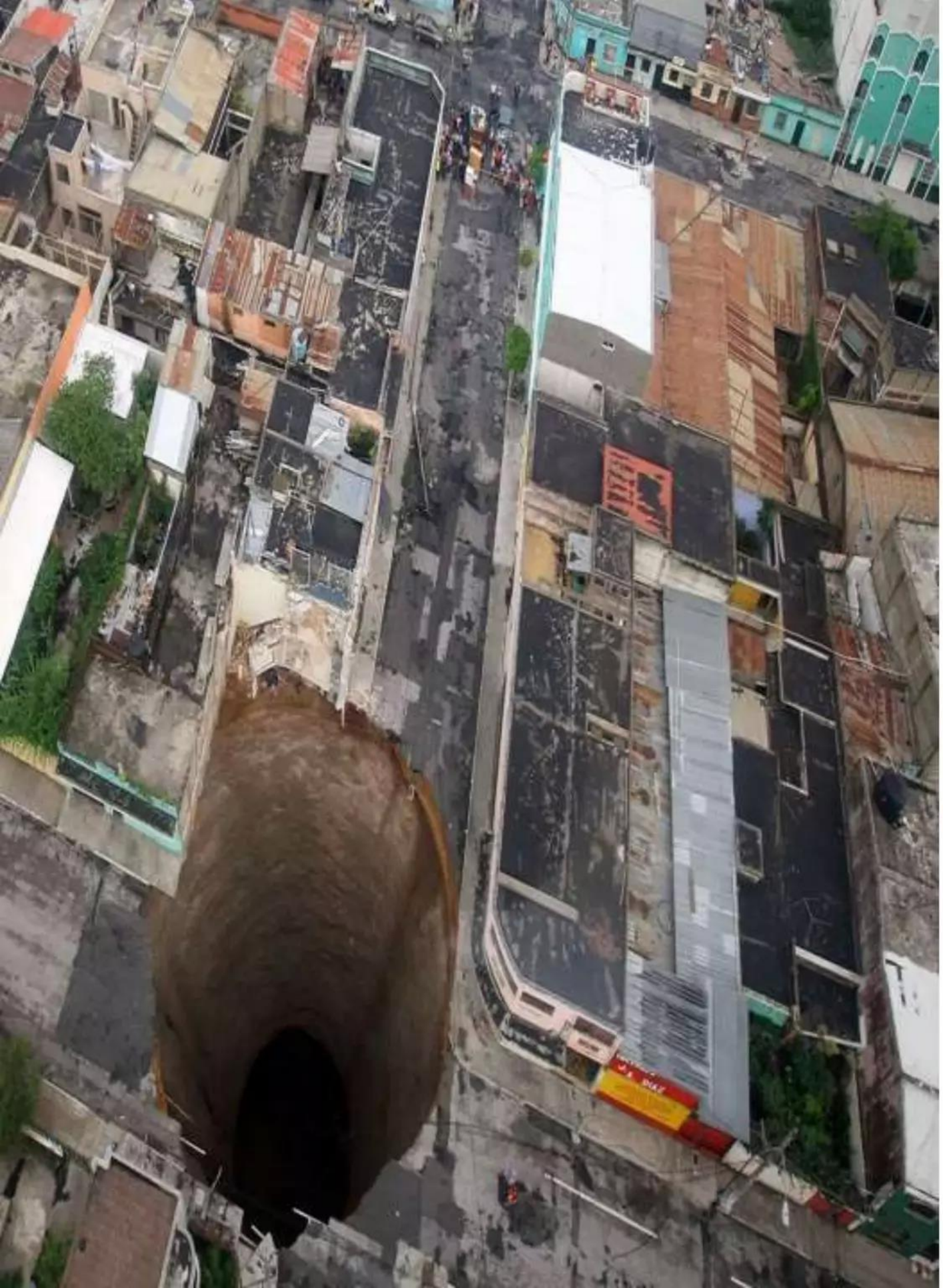
- It takes 4 to 6 months for complete decomposition.


Stormwater
Control Basin
Final Cap &
Vegetative Cover
Landfill Gas Well
& Collection Pipe
Landfill Gas
Recovery Plant
Le
Tr
Active Working Face
Refuse
6" Daily Cover
Primary Liner
Secondary Liner
ce/Scale
se
Primary Leachate
Collection Pipe
Protective
Granular Layer
Access/Haul Road
Perimeter Berm
In-Situ Clay
Landfill
Cut-Away View
Groundwater
Monitoring Wells
Landfill Gas
Monitoring Probe



©2000 How Stuff Works

- **A** Ground Water
- **B** Compacted Clay
- **C** Plastic Liner
- **D** Leachate Collection Pipe
- **E** Geotextile Mat
- **F** Gravel
- **G** Drainage Layer
- **H** Soil Layer
- **I** Old Cells
- **J** New Cells
- **K** Leachate Pond

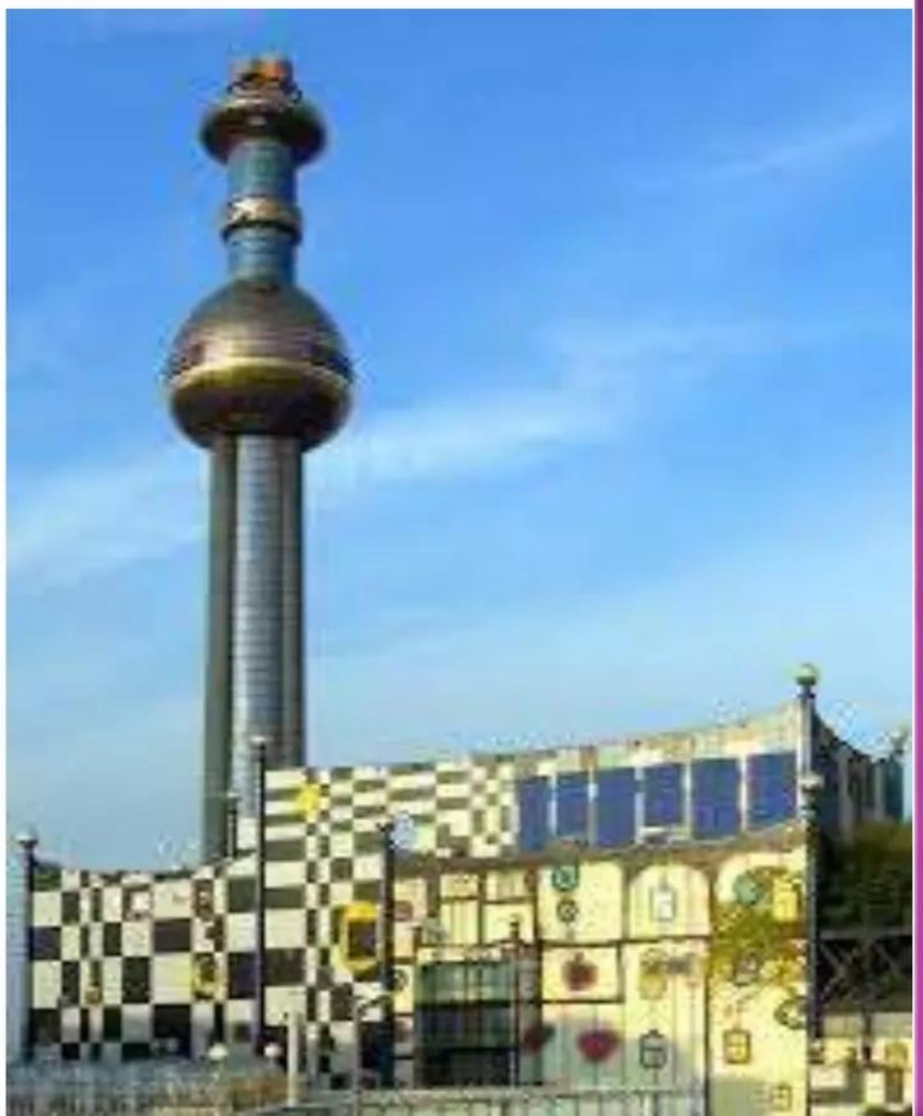


SINK HOLE

3. INCINERATION

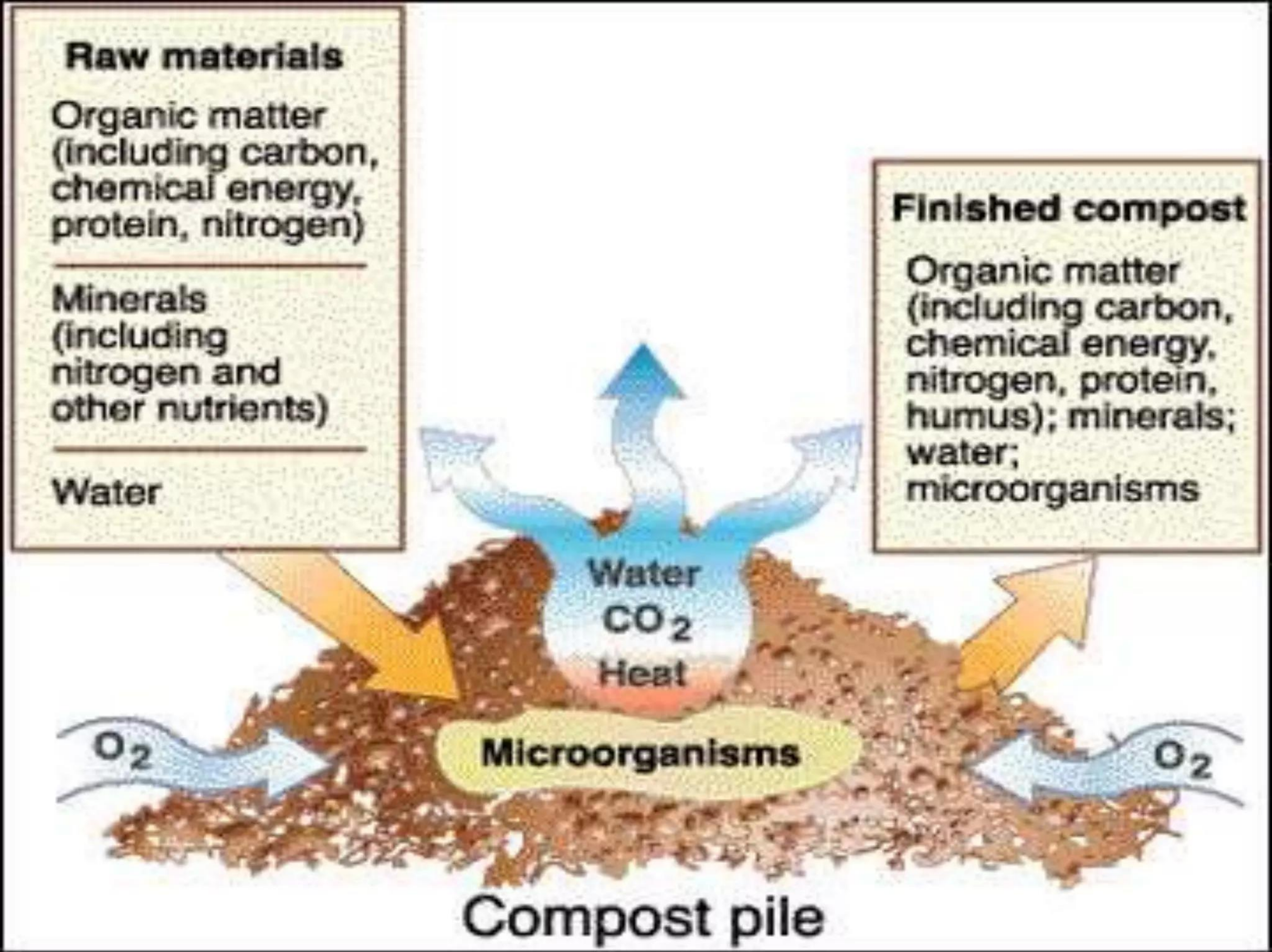
- it is a disposal method in which solid organic wastes are subjected to combustion so as to convert them into residue and gaseous products.
- This process reduces the volumes of solid waste to 20-30% of the original volume.
- Also described as thermal treatment

- Where land is not available
- Hospital waste



4.COMPOSTING

- Method of combined disposal of refuse and night soil/ sludge
- Principal by products are: CO_2 , Water and heat
- End product- compost
- Methods
    - a. Bangalore method
    - b. Mechanical composting
    - c. Vermicomposting


Raw materials
Organic matter (including carbon, chemical energy, protein, nitrogen)
Minerals (including nitrogen and other nutrients)
Water
Finished compost
Organic matter (including carbon, chemical energy, nitrogen, protein, humus); minerals; water; microorganisms
Water
CO_2
Heat
Microorganisms
O_2
O_2
Compost pile

A. BANGALORE METHOD (HOT FERMENTATION PROCESS/ ANAEROBIC METHOD)

- IISc- Indian Council of Agricultural Research.
- Trenches are dug 3ft deep, 5-8ft broad, 15-30ft long.
- Composting procedure
  - 1. Layer of Refuse- 15 cm
  - 2. Layer of Night soil – 5 cm

Physical, chemical and biological changes takes place

B. MECHANICAL COMPOSTING (AEROBIC METHOD)

- Compost manufactured by processing raw materials.
- 1. Screening
- 2. Pulverization (<2inches)
- 3. Mixing
- 4. Incubation

Process completed in 4-6 week

C: vermicomposting :It is a method of disposal of kitch*en and* plate wastes, which serves the dual purpose of disposing off the garbage as well as proving eco-friendly.

5.MANURE PITS

- Mostly used in rural areas
- Digging “manure pits” is to prevent the refuses thrown around the houses.
- The garbage, cattle dung, straw, and leaves should be dumped into the mannure pits and covered with earth.
- Two pits will be needed
- In 5-6 month’s time the refuse is converted into manure which can be returned to the field.

6.BURIAL

- Suitable for small camp
- A trench 1.5m wide &2 m deep is excavated
- The refuse is covered with 20 -30cm of earth
- When the level in the trench is 40cm from ground level, the trench is filled with earth & compacted
- 4-6 months

TECHNOLOGY

- Technologies like

  RFID(Radio frequency identification) tags are now being used to collect data on presentation rates for curb-side pick-ups.

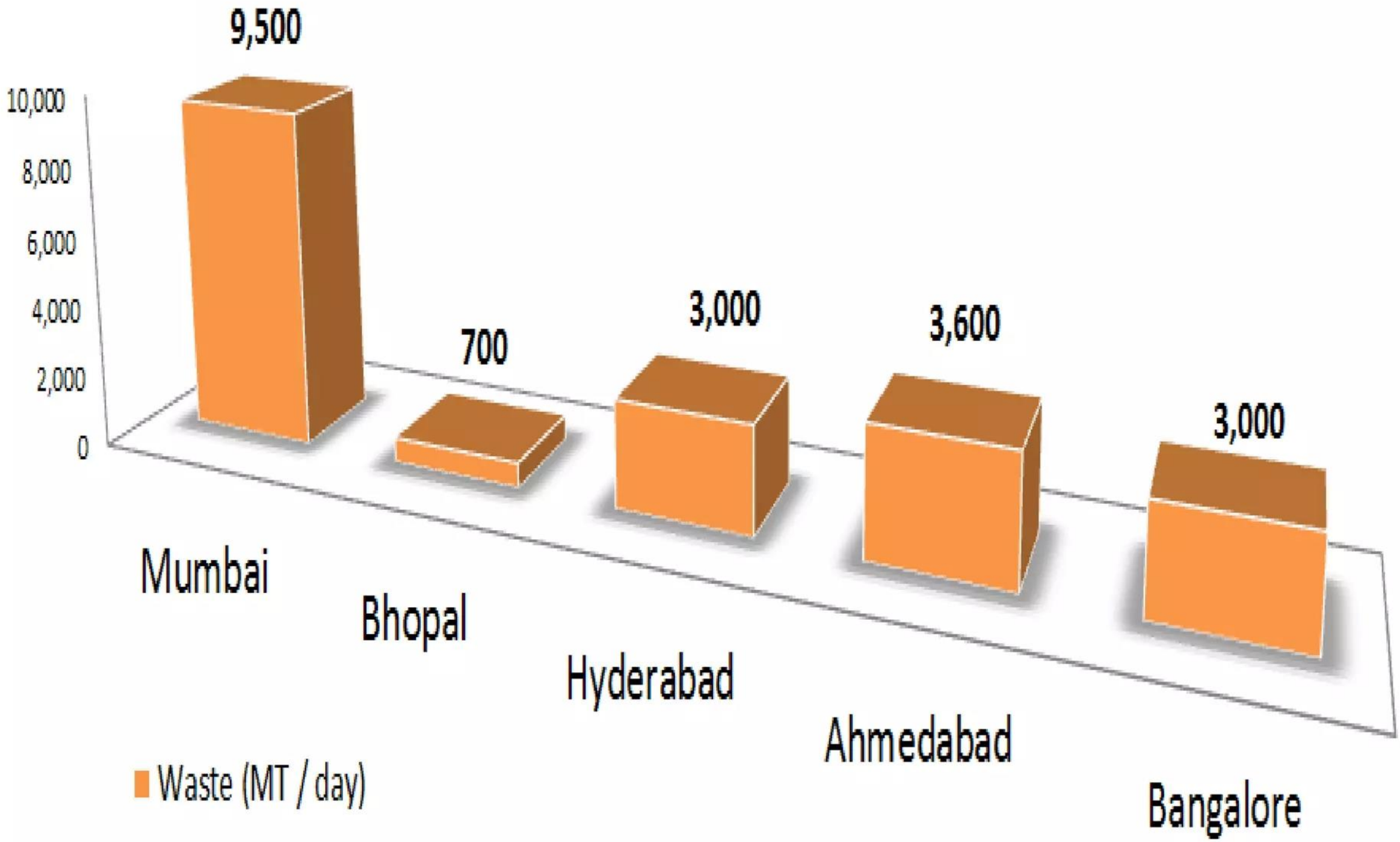
  GPS tracking is particularly evident when considering the efficiency of ad hoc pick-ups (like skip bins or dumpsters) where the collection is done on a consumer request basis.

  Rear vision cameras are commonly used for OH&S (Occupational Health & Safety) reasons and video recording devices are becoming more widely used, particularly concerning residential services.

ZERO WASTE SYSTEM

- Zero waste system which was founded by PhD chemist .Paul parmer in Okland.
- It is a philosophy that encourages the redesign of resource life cycle so that all products are reused.

WASTES PER INDIAN CITIES



WASTE MANAGEMENT PLANT IN MYSORE

- There are two solid waste management plant in Mysore.

  J.P Nagar

  vidyaranyapuram

Mysore gets two more waste treatment plants

H M Aravind | TNN

Mysore: The city will get two more solid waste management plants for better disposal of the garbage generated daily at the tourist hub. Plans to shift the existing plant to the outskirts have been dropped.

As of now, of the 402 tonnes of garbage generated daily, 200 tonnes is processed every day and the rest is dumped at sewage-treatment plant in Vidyaranyapuram, leading to pollution and complaints from the residents in the area.

The two additional plants will be built at Kesare and Rayanakere towards the western and eastern sides of the city. Each of these plants will have a capacity to process 200 tonnes per day. The Mysore City Corporation budgeted Rs 5 crore for the project.

Though the local body had announced to shift the centralized solid waste management plant at Vidyaranyapuram to Rayanakere, it has been shelved. The city's oldest plant will continue to operate but the dependence on it will be reduced gradually.

Announcing the plan, taxation and finance standing committee chairman B L Bhyrappa on Tuesday said: "There is a need to build additional plants to cut down pressure on the existing plant and handle additional generation of garbage in future.

Mysore scored over Indian cities bagging the second cleanest city award after Chandigarh by the Union urban development ministry recently. Bhyrappa told TOI the plan is to divide the city's 65 wards into three parts and process the garbage at the plant near them.

The MCC, which is setting up four additional zero solid waste management plants, set aside Rs 50 lakh and Rs 1 crore to upgrade the five plants. With the MCC claiming to have achieved 60% segregation of waste at the source, it is focusing on achieving 100% segregation to better-manage the garbage. It will take up education programmes with a budgetary allocation of Rs 60 lakh.

BBMP(BRUHAT BANGALORE MAHANAGAR PALIKE)

- BBMP represents the third level of government & forth largest municipal corporation in India .
- It is responsible for the development of the city , health hygiene, licensing trade & education.

From October 1st onwards, BBMP will collect only WET and SANITARY waste DAILY

DRY waste will be collected WEEKLY

OUR WASTE
OUR RESPONSIBILITY

Wet Waste

- cooked food (veg / non-veg)
- uncooked food (veg / non-veg)
- fruit and flower waste
- fallen leaves and similar compostable materials

Dry Waste

- paper / plastic / wood
- metals / fabrics / cloth rags
- glass / wire / leather
- rexin / rubber
- thermocol etc...

Sanitary Waste
wrap in newspaper
marked with a red cross

Contact BBMP control room no : 080-2266 0000
e-mail : swm.bbmp@gmail.com website : www.bbmp.gov.in
f : facebook/bbmp-speak-on-solid-waste-management

Bruhat Bangalore Mahanagara Palike

Join hands to create a garbage-free Bangalore

WASTE MANAGEMENT POLICIES

- Environment protection act, 1986
- Hazardous waste rule 1989
- Bio-medical waste rule 1998
- Municipal solid waste rule 2000
- Waste management act 1996
- Solid waste policy in India 2006

RECOMENDATION

- The improvement of people and private sector through NGOs could improve the efficiency of solid waste management.
- Public awareness should be created especially at primary level.
- Littering of solid waste should prohibited in cities towns and urban areas.
- More over house to house collecting solid waste should be .

CONTD…

- The collection bins must be have a large enough capacity to accommodate 20% more than the expected waste generation in the area.
- Municipal authorities should maintain the storage facilities to avoid unhygienic & unsanitary condition.
- It is advisable to move from open dumping to sanitary land filling in a phased manner.

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HAZARDOUS WASTE MANAGEMENT

Topics

1. Definition of Hazardous Waste
2. Source of Hazardous Wastes
3. Characteristics of Hazardous Waste
4. List of Hazardous Waste
5. Hazardous Chemicals
6. Waste Control Measures
7. Waste Treatment Methods
8. Waste Disposal Methods

Hazardous Waste

A Hazardous Waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment.

Examples include drain cleaners, oil paint, motor oil, antifreeze, fuel, poisons, pesticides, herbicides and rodenticides, fluorescent lamps, lamp ballasts, smoke detectors, medical waste, some types of cleaning chemicals, and consumer electronics (such as televisions, computers, and cell phones).

Source of Hazardous Waste

Hazardous waste is generated from many sources, ranging from industrial manufacturing process wastes to batteries and may come in many forms, including liquids, solids gases, and sludges. It includes

- Clinical wastes;
- Waste oils/water, hydrocarbons/water mixtures, emulsions;
- Wastes from the production, formulation and use of resins, latex, plasticizers, glues/adhesives;
- Wastes resulting from surface treatment of metals and plastics;
- Residues arising from industrial waste disposal operations;
- Wastes which contain certain compounds such as: copper, zinc, cadmium, mercury, lead and asbestos.
- Household waste; or Residues arising from the incineration of household waste.

Concern about Hazardous Waste

- Cause of mass life and material damage and loss (disability, death, fire, explosion)
- Cause of environmental damages: water, solid and air pollution (under ground and surface drinking water)
- Cause of potential increased chemical bioaccumulation that is hard for biodegradability (chlorine containing chemicals)
- Cause of long term irreversible health risks
- High concern of trans-boundary movement of toxic waste
- Cause of massive toxic health damages

How to classify whether the waste is Hazardous or not?

- Using defined list of criteria (as specified by US-EPA)
- Identifying components of Waste
- Based on Characteristics of Waste
- Reviewing literature about the inherent characteristics of Waste

Classification of Hazardous Waste

1. **Listed Waste by US Environmental Protection Agency (US-EPA)**
   a) F-List
   b) K-List
   c) P-List and U-List
2. **Characterized Waste**
   a) Ignitability
   b) Corrosivity
   c) Reactivity
   d) Toxicity
3. **Universal Waste**
   a) Batteries
   b) Pesticides
   c) Equipment containing mercury
   d) Lamps containing mercury
4. **Mixed Waste:** Radioactive + Hazardous
5. **E-Waste:** Electrical Waste, Electronic Waste

US-EPA: List of Hazardous Waste

Hazardous Waste categorized by US Environmental Protection Agency (EPA):

F-List:

Wastes on this list are created from common manufacturing and industrial processes. Because these wastes are produced in multiple industries, they are known as "non-specific source waste."

K-List:

Wastes, including sludge or wastewater, from a selection of specific industries, such as petroleum refining or pesticide manufacturing, are included on this list. Since we know the industry they are produced in, they are called "source-specific wastes."

P-list and U-list:

Wastes on this lists are commercial chemical products being discarded in their unused form. They become hazardous when discarded.

Characteristics of Hazardous Waste

- Explosive
- Flammable and Ignitable (flash point < 60^0c): Solvent washes, petroleum wastes, waste oil, alcohols, paint wastes, cleaning solvents etc.
- Corrosive: acid sludges, battery acid waste, caustic waste water, alkaline cleaning waste, rust remove waste, etc
- Poisonous
- Toxic
- Ecotoxic
- Infectious Substances: medical waste containing microbial cultures, pathological wastes, contaminated human blood, etc.
- Reactive: Cyanide Plating waste, waste containing strong oxidizers such as chlorine, ozone, peroxides, permanganates, Hcl etc.
- Radioactive: Uranium, molybdenum, cobalt, iodine etc.
- Bioaccumulate: Polychlorinated biphenyl (PCB), dioxin

Hazardous Chemicals

1. **Arsenic:** Arsenic gets released into groundwater through agriculture, wood preservatives, and glass production. It can cause cancer, respiratory, and circulatory problems.

2. **Lead:** Lead is a hazardous chemical that often occurs near mining sites. It can get into the food chain and cause heart disease.

3. **Benzene:** Benzene can be released into the environment because of gasoline vapors and automobile exhaust, and has been linked to leukemia.

4. **Chromium:** Chromium has been used in the natural gas industry to prevent machinery from rusting.

5. **Toluene:** Toluene can enter the environment through its use in solvents and petroleum products. If inhaled at heavy doses, it can damage the central nervous system.

6. **Cadmium:** Highly toxic even in low doses, cadmium is most found in industrialized areas and is released into the environment through fuel combustion, incorrectly handled sewage sludge, and fertilizers.

Hazardous Chemicals

7. Zinc: Zinc can be released into the atmosphere due to galvanized metal surfaces, motor oil spills, and tire dust, and can accumulate through stormwater runoff and harm fish and other aquatic life.

8. Mercury: Mercury gets into the atmosphere through metal processing, coal burning, medical waste, and more. The health problems it engenders are many: brain damage, and kidney and immune system problems can result from overexposure to mercury.

9. Pesticides: Used in industrial-scale agriculture, pesticides accumulate through water runoff and find their way into water supplies. They can cause neurological and reproductive disorders.

10. E-Waste: When electronics are incorrectly disposed of, hazardous substances like lead, mercury, and arsenic can leak out, contaminating their surroundings, such as when they're in a landfill. Over time, these metals and compounds seep into the soil, and through bioaccumulation are passed along the food chain.

Hazardous Waste Control Measures

1. Source Reduction
   a) Technological Efficiency
   b) Material Substitute
   c) Good Management Practice
2. Waste Avoidance
3. Waste Minimization
4. Water Recycling
   a) Direct Reuse
   b) Reclamation
5. Waste Treatment
6. Waste Disposal

Hazardous Waste Treatment Methods

1. Physical Methods:
   a) Drying
   b) Screening
   c) Grinding
   d) Evaporation
   e) Sedimentation
   f) Filtration
   g) Fixation
2. Chemical Methods:
   a) Oxidation
   b) Reduction
   c) Neutralization
   d) Hydrolysis

Hazardous Waste Treatment Methods

3. Biological Methods
   a) Composting
   b) Aerobic and Anaerobic Decomposition
   c) Activated Sludge
   d) Enzyme treatment
4. Thermal Methods
   a) Incineration
   b) Boiling
   c) Autoclaving
   d) UV Treatment
   e) Microwave Use

Hazardous Waste Disposal Methods

1. Land Farming: Treated waste can be used as a fertilizer or soil conditioner
2. Deep well Injection:
3. Surface Impediment: Encapsulation, Fixation, or containment of the waste. This method involves arresting or demobilizing the movement or migration of waste by containing it in a hard core: clay soil, thermo plastic polymers, non-corrosive metallic containers etc.
4. Ocean Dumping:

ELECTRONIC WASTE

AN ENVIRONMENT KILLER…!!

TODAY'S ELECTRONIC

GADGETS,

TOMORROWS ELECTRONIC

WASTE....!!

CONTENTS

- What is E-Waste ?
- Sources of E-Waste.
- Types of E-Wastes.
- Effects of E-Waste on environment.
- Effect of E-Waste on human body.
- How these become E-Waste.
- Methods of disposal of E-Waste.
- Why E-Waste Management?
- Statistic's
- Conclusion
- References.

#1.WHAT IS E-WASTE ?

- Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution.

#2. Sources of E-Waste.

1. Waste generated from the products used for data processing such as computers, computer devices like monitor, speakers, keyboards, printers etc.
2. Electronic devices used for entertainment like TV, DVDs, and CD players.
3. Equipment or devices used for communication like phones, landline phones, fax etc.
4. Household equipment's like vacuum cleaner, microwave ovens, washing machines, air conditioners etc.
5. Audio, visual components such as VCRs, Stereo equipment etc.

#3. TYPES OF E-WASTE

#4. EFFECTS OF E-WASTE ON THE ENVIRONMENT.

- Emissions from E-Waste create environmental damage.
- Toxic chemicals from e-waste enter the "soil-crop-food pathway,"
- These are non-biodegradable and cause soil pollution.
- E-Waste dumping yards and nearby places are polluted and cause health hazards.

#5. EFFECTS OF E-WASTE ON HUMAN BODY

Element	Effect on human body.
Lead	Damage to central and peripheral nervous systems , blood systems and kidney damage. Affects brain development of children.
Chromium	Asthmatic Bronchitis . DNA damage.
Cadmium	Toxic irreversible effects on human health. Accumulates in kidney and liver. Causes neural damage .Teratogenic.
Mercury	Chronic damage to brain and respiratory system.
Plastics including PVC	Burning produces dioxin. It causes reproductive and developmental problems ; Immune system damage ; Interfere with regulatory hormones.

And many more.....

#6. HOW THESE BECOME E-WASTE?

Reasons:

- Advancement in technology.
- Changes in style fashion and status
- Nearing the end of their useful life
- Not taking precautions while handling them.

#7. METHODS OF DISPOSAL OF E-WASTE

WHY WE SHOULD ENSURE SAFE DISPOSAL OF THESE?

1. Land fill disposal allows heavy metals to leach into ground water.
2. Incineration makes hazardous material airborne.
3. Acid baths are dangerous and cause water and soil contamination.
4. To ensure exported materials are handled properly.

Methods

THE MOST IMPORTANT METHOD IS **RECYCLING**

Disassembly/Dismantling : It is the systematic removal of components , parts or a group of parts or a subassembly from a product in E-waste.

Upgrading : It includes comminuting and separation of materials using mechanical/physical or metallurgical processing . Methods to recover materials include incineration and refining.

Materials recovery : The materials are recovered by recycling facilities. The plastic ,glass, metals can be recovered by sorting them before mixing them with other waste.

#8. ADVANTAGES OF RECYCLING E-WASTE.

- ASSET RECOVERY
- REDUCTION OF NEED FOR LANDFILLS
- REDUCTION OF JUNK AND CLUTTERS
- RESALE AND REUSE
- CREATION OF JOBS

#9 WHY E-WASTE MANAGEMENT ?

- Pollution of ground water.
- Acidification of soil.
- Emission of toxic fumes and gases.
- It is the fastest growing portion of municipal waste.
- Releases harmful gases into the air.

#10. STATISTICS

According to statistics we are generating more than 40 million tons of e-waste a year and only 27% of this is recycled.

India is in the 5th position in the generation of e-waste.(Being the largest user of smart phones this ranks may increase in the future.)

#12. CONCLUSION

- E waste has emerged as one of the fastest growing waste streams world wide today.
- Electronic gadgets, without proper disposal can cause environmental harm
- Reuse and Recycle are more beneficial than simple disposal
- Designing of products using environment friendly raw items can make a change.
- Awareness of e-waste should be given
- Government shall take steps to reduce e-waste disposal.

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