(1) Introduction to Environment

- The word enviornment comes from French word 'environ' means sourround.
- "It is defined as the conditions of air, water, land and other things sourrounding of us".
- Environment has two parts.

(1) Biotic Part: It is made with all living organisms like -
- Plants - animals - birds - micro-organism.

(2) Abiotic Part: It includes non-living components of environments
- light, air, water - temperature, humidity.

→ Biotic & Abiotic components of an environment are together known as "Biome environment"

-▷ Environment has basic two categories.

① Natural environment

→ Gifted by God and operated by God.

→▷ It has 4 components.

A. Biosphere : Space occupied by life.

B. Atmosphere : Space occupied by air.

C. Lithosphere : Space occupied by soil.

D. Hydrosphere : Space occupied by water.

② Man-made environment

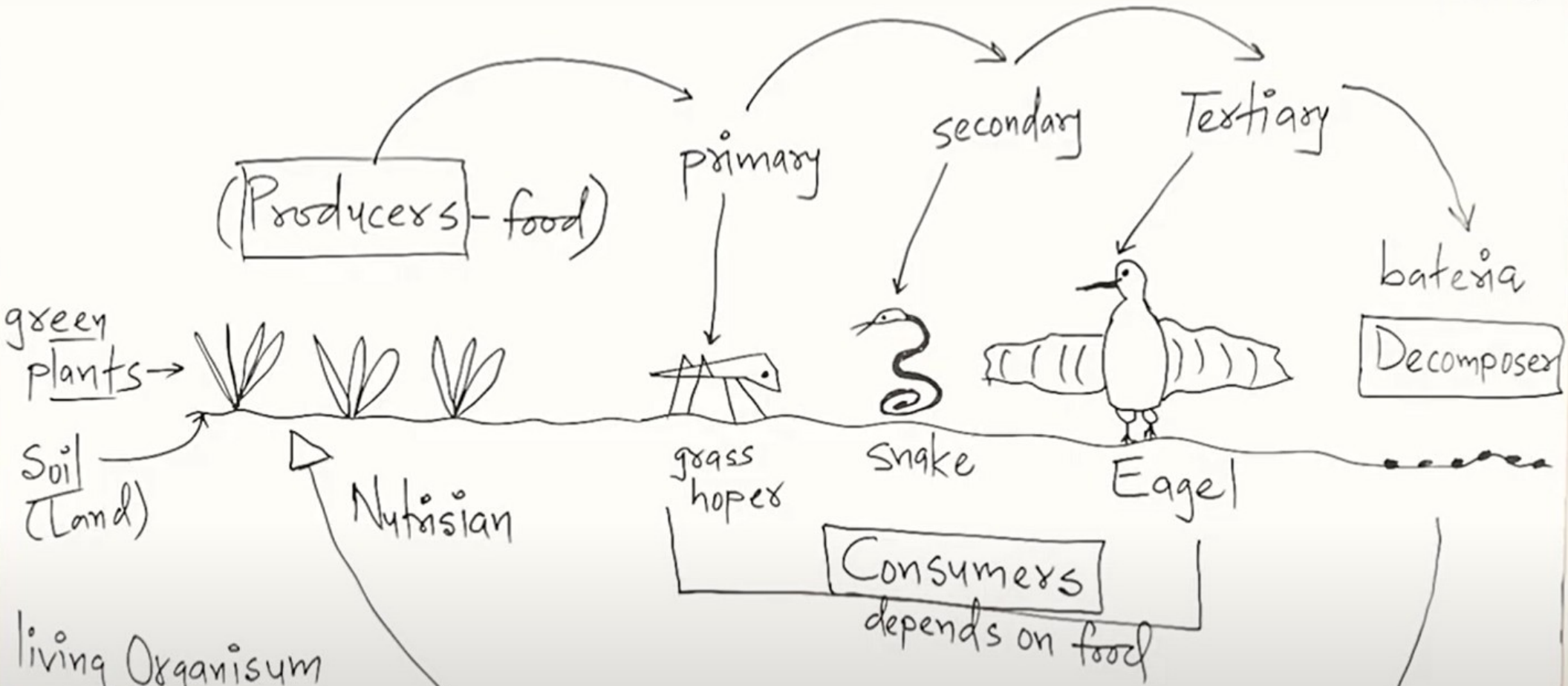
→ Created by man by modifing natural environment as per need.

e.g:- Dam - road - industries

- Canals - Power plant - buil

Ecology (Science)

Eco-System (Geographical Area)



living Organisum

animals, birds, plants.

Non-living enviroment

Light air water

Ecology:

→ "It is a science which deals with the study of relationship of living organism with each other & their with non living environment".

Ecosystem:

→ It is a geograpical area, where living organism interact with each other and with non-living environment

e.g Plant (living) ↔ human (living) → to get oxygen.

Soil (non-living) ↔ plant (living) → plant depends on soil

Types of Eco-system

① Natural Ecosystem
- Forest ecosystem
- Pond ecosystem
- Desert ecosystem

② Artifical Ecosystem
- Aquarium Ecosystem
- Agricultre field
- Food ecosystem.

Scroll for details

Ecosystem has 3 types of organisms.

Producers:

- The organisms which creates food. - Green plants, some bateria.

Consumers:

- The organisms which depends on food on others (Producer).

A. Primary Consumers → Grass hopper eats grass.

B. Secondary consumers → Snake eats Grass hoper.

C. Tertiary Consumers → Egal eats Snake.

Decomposers:

- When consumers died then bacteria will decompose it in soil.
- Again Green plants will depend on soil to create food called producers.
- Which is used by consumers and when they die, decomposers will decompose them & cycle will be repeated called ecosystem.

(#) Environmental Science:

"It is a scientific study of earth, air, water, and living organisums with their impact on enviornment."

(#) Environmental Engineering:

"By appling engineering concepts, how to protect and enhance the quality of enviornment for public heath and public welfare".

e.g:

1. Air pollution controll equipments, → To protect environment.
2. Water treatment plants. → For public health & welfare.

(#) Environmental studies:

→ The main points of environmental studies are:

(1) To create awareness among people about the natural resources and their uses.

(2) To study environment pollutions & their control.

(3) To study human pollution on environment.

(4) To study causes of flood, earth quake, landslide, cyclones, etc.

(5) To make appropriate judgments and decisions for the protection and improvement of earth.

Importance of Environmental Science for different engineering disciplines.

① Civil Engineering

- water resource, water treatment.
- Waste water treatment plants.
- Water pollution and control.
- Air pollution and control.
- Land and noise pollution control.
- Recycle and Reuse.
- Environmental impact assesment.

② Chemical Engineering

- Focous on environmental chemistry.
- Air & water treatment and it's separation process.

③ Mechanical Engineering:

- Designing of machines for water treatment plants like pumping stations and filters.
- Designing of vehicles which emits less carbon.

④ Electronics & Electrical Engineering:

- To develop devices which monitor, measure and control the environmental impact.
- Monitoring & managing energy generation and it's usage.

⑤ Agriculture Engineering:

- Water quality protection.
- Air pollution prevention.
- Soil protection.
- Waste management.