

Chapter :- Our Environment

Environment :- Everything which surrounds us. It may include living (biotic) and non-living (abiotic) components.

Biotic :- Plants and animals.

Abiotic :- Air, water etc.

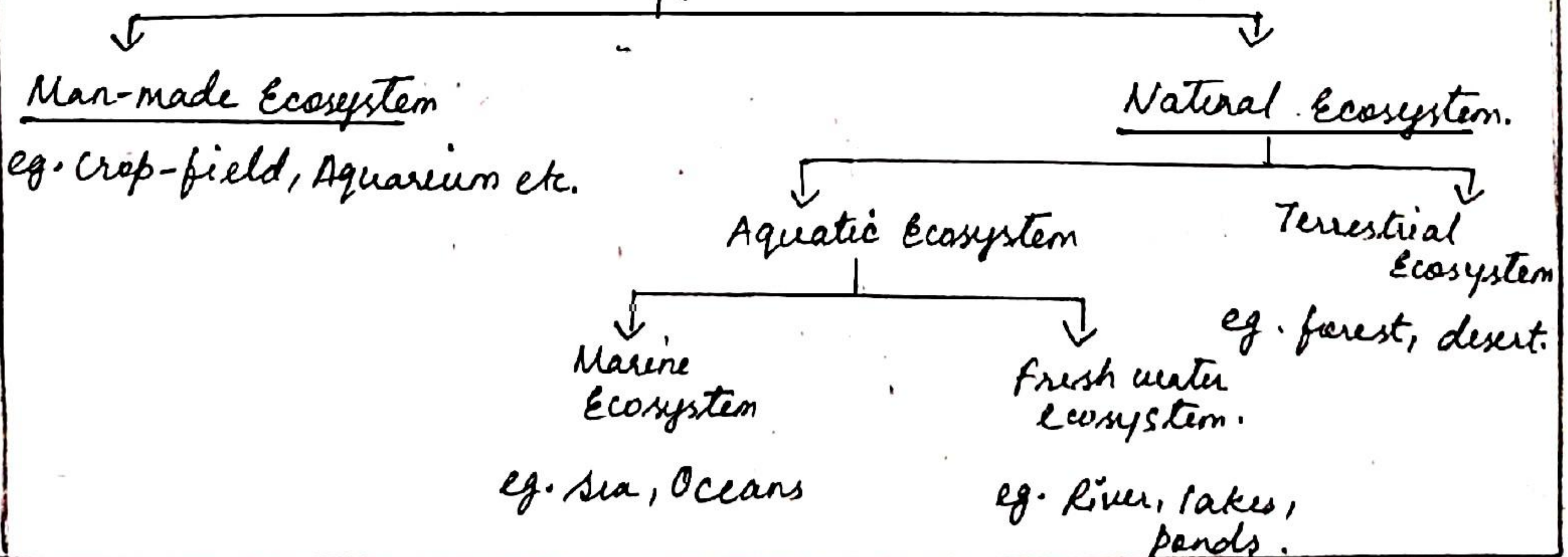
Bio-Degradable :- Substance that can be decomposed by the action of micro-organism like bacteria are called bio-degradable. Eg. Organic wastes.

Non-Biodegradable :- Substances which cannot be decomposed by the action of microorganisms are called non-biodegradable. ex:- polythene bags, metals, radioactive wastes etc.

Eco System and its Components.

- All the interacting living organisms in an area together with non-living components form an ecosystem. So an ecosystem consists of both biotic and non-living (abiotic) components like temperature, rainfall, wind, soil etc.

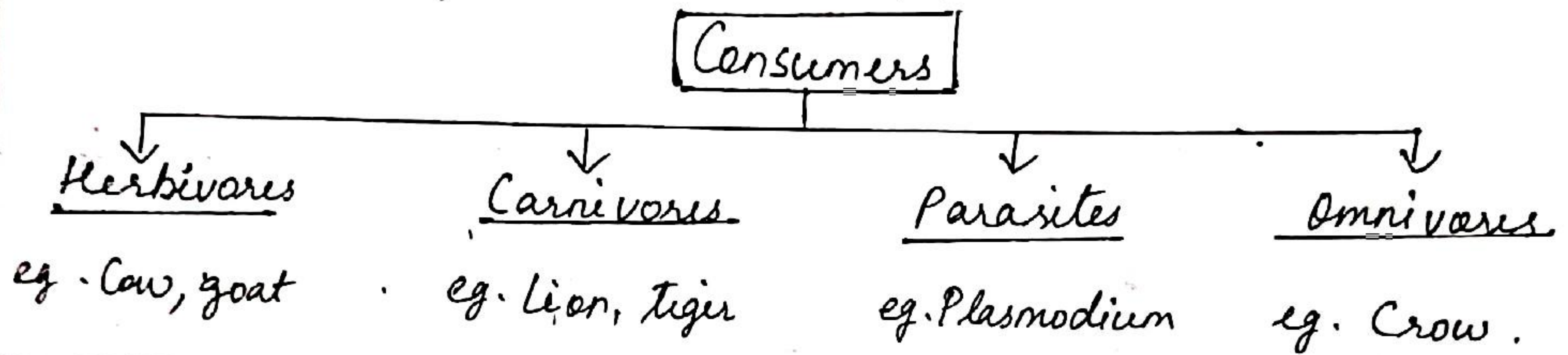
Ecosystem



All organisms are classified on the basis of nutrition.

Producers:- All green plants, blue green algae can produce their food (Sugar and starch) from inorganic substance using light energy (photosynthesis).

Consumers:- Include Organisms which depend on the producer directly or indirectly for their substance.

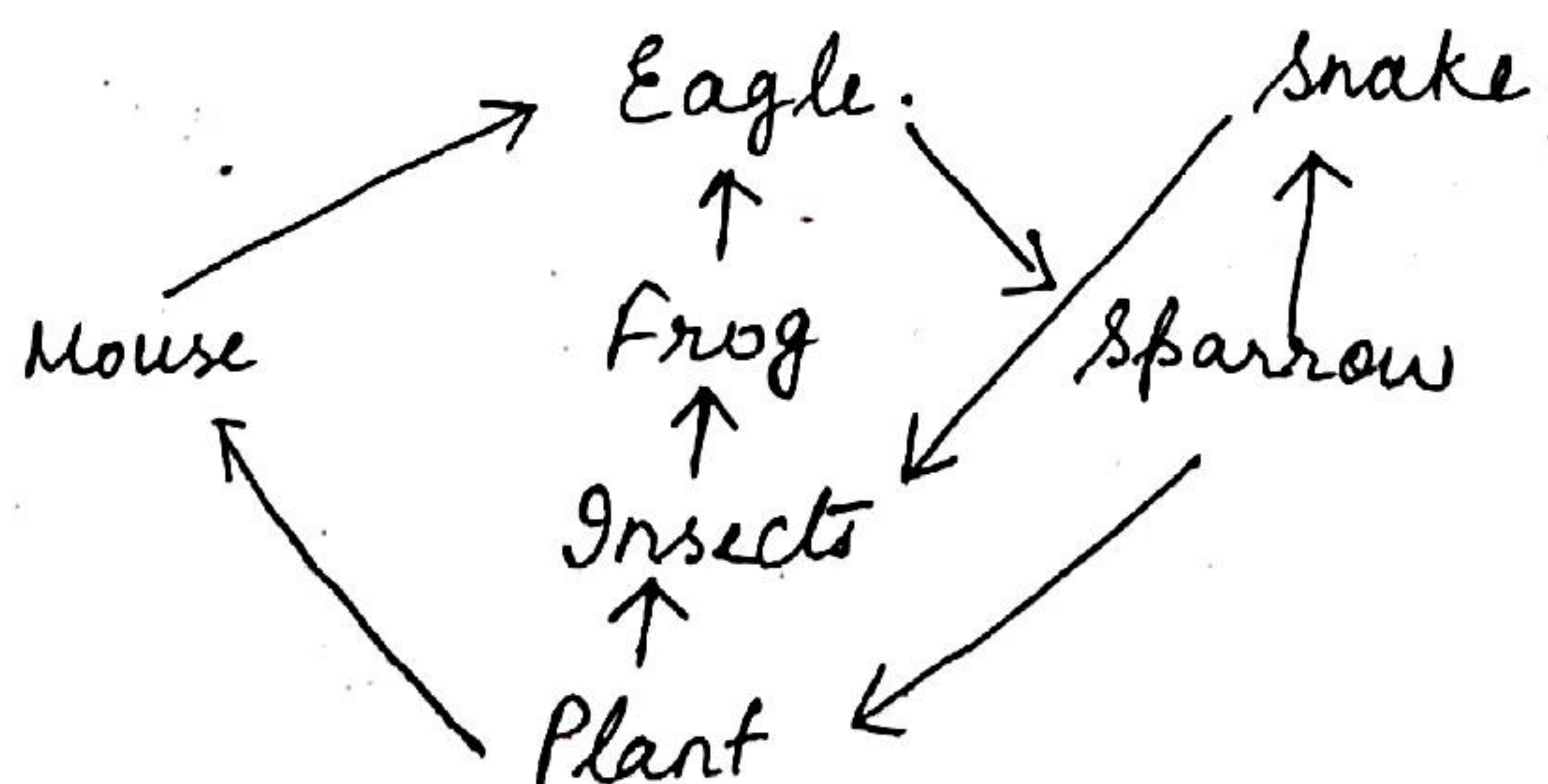


Decomposers:- Fungi & Bacteria which break down the dead plant, animals complex compounds into simpler substances. Thus decomposers help in the replenishment.

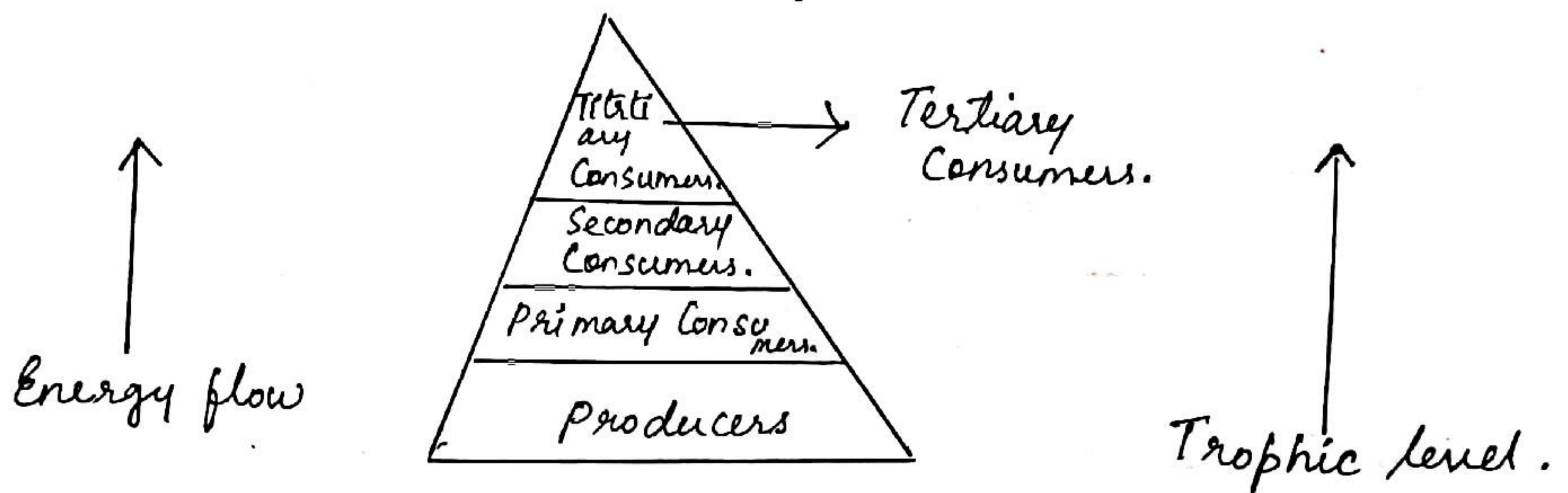
Eg:-

T_1 T_2 T_3
Grass $\longrightarrow$ Deer $\longrightarrow$ Lion.

Food Chain:- It is the sequence of living organism in which one organism consumes other organism for energy. It is unidirectional.



- In a food chain, various steps while transfer of energy takes place called a trophic level.
- The green plants capture 1% of sun's energy.
- The flow of energy is unidirectional in a food chain.
- There is gradual decrease in the amount of energy from one trophic level to next trophic level in a food chain.



10 percent law:- The energy is transferred to next level while 90% energy is used by present trophic level in its life processes.

- The concentration of harmful chemicals increases with every next trophic level in a food chain. It is called Biomagnification.
- Maximum concentration of such chemicals get accumulated in human bodies. Since, humans occupy the top of level in any food chain.

Environmental Problems:-

Changes in environment affect us and our activities change the environment around us. Environmental problems caused by humans are:-

- (a) depletion of Ozone layer and waste disposal.
- (b) Pollution due to mismanagement of waste disposal.

1. Depletion of Ozone Layer:-

- (O_3) layer is largely found in the stratosphere which is a part of our atmosphere from 12 km - 50 km above sea level.
- Ozone is a deadly poison at the ground level.
- Ozone is formed as a result of photochemical reaction:-
$$O_2 \xrightarrow{UV} O + O \text{ (splitting of molecular oxygen).}$$
$$O_2 + O \longrightarrow O_3$$
- Ozone layer is a protective blanket around earth which absorbs most of the harmful UV (ultraviolet) radiation of the sun.
- Ozone layer emits harmful ozone gases which causes skin cancer, cataract in eyes, weaken immune system etc.
- The decline of Ozone layer thickness in Antarctica was first observed in 1985 and was termed as "Ozone Hole"

Garbage Disposal:- Industrialization and rise in demand of consumer goods have created a major problem in the form of wastes and its disposal. The different ways of solid waste disposal commonly around us are:-

Methods for Garbage Disposal :-

1. Open Dumping :- It is a conventional method in which solid wastes dumped in selected area of a town.
2. Land fillings :- Wastes are dumped in low lying areas and are compacted by rolling with bulldozers.
3. Composting :- Organic wastes are filled into a compost pit ($2m \times 1m \times 1m$). It is then covered with a thin layer of soil. After about three months the same garbage filled inside the pit changes into organic manure.
4. Recycling :- The solid waste is broken down into its constituent simpler materials. These materials are then used to make new items.
5. Reuse :- A very simple conventional technique of using an item again and again.
For eg. paper can be reused for making envelopes etc.