



BIOTIC AND ABIOTIC COMPONENTS OF THE ENVIRONMENT

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INTRODUCTION NATURE HAS TWO IMPORTANT PARTS THAT WORK TOGETHER: LIVING AND NON-LIVING. WE CALL THEM BIOTIC COMPONENTS AND ABIOTIC COMPONENTS. BIOTIC COMPONENTS. ARE LIVING BEINGS, LIKE PLANTS AND ANIMALS, WHILE ABIOTIC COMPONENTS ARE NON-LIVING, SUCH AS LIGHT, AIR AND WATER

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The biotic and abiotic components of the environment are mentioned as follows:

(I) Biotic Components: These include plants, animals and organisms. Based on their functions. Biotic components can be divided to two main categories:

1. Autotrophic Components or Producers: It describes the biological world. Under this, organisms make their own food from inorganic substances their nutrition. It includes all types of vegetation, trees, grasses, shrubs, plankton and bacteria.

2. Heterotrophic Components: These are those which by consuming food establish a chain of reaction. They are completely dependent on autotrophic primary production patches for their survival. Hence these organisms are called Consumers and Decomposers. Consumers or heterotrophs are divided into three parts:

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(I) Consumers of the First Order: Consumers of this category get their food directly from the producers, such as insects, rais, rabbits, deer, goats etc. They are called herbivores.

(II) Consumers of the Second Order: Consumers of this category obtain their food by hunting. They are carnivorous; for example, birds, crocodiles, sloths and cats etc.

(III) Consumers of the Third Order: The consumers of this category are themselves carnivorous and depend on the second order consumers but do not consume them as food goes salty, like lions, vulture, dragons and snakes etc.

Table : Relationship between first, second and third (highest) consumer

Produces	First Class Consumer	Second Class Consumer	Highest Class Consumer
grass →	goats →	wolf →	lion
grass →	insects →	birds →	vulture
seed and fruit →	rats →	cats →	dragons, lion
plants	humans →	→	lion

- ▶ **Decomposers:** Usually these are saprophytes which are bacteria, fungi and micro-organisms etc. They decompose dead organisms, plants, animals and other organic substances by rotting them.



(II) Abiotic Components: The nature of biotic components is as complex as the biological world. It mainly includes all the elements of the natural environment that directly or indirectly affect living beings. Hence, these elements are also important parts of the ecosystem. They can be divided as follows:

1. Climatic: These may be classified into the following types:

(i) **Temperature:** It affects the metabolic processes of organisms.

(ii) **Water (Rain):** Availability of water is very important for survival.

(iii) **Light (Energy):** It is required for photosynthesis in autotrophic organisms.

(iv) **Soil:** Structure affects plant growth and availability of nutrients.

(v) **Atmospheric Pressure:** Affects the respiratory and physiological processes in living organisms

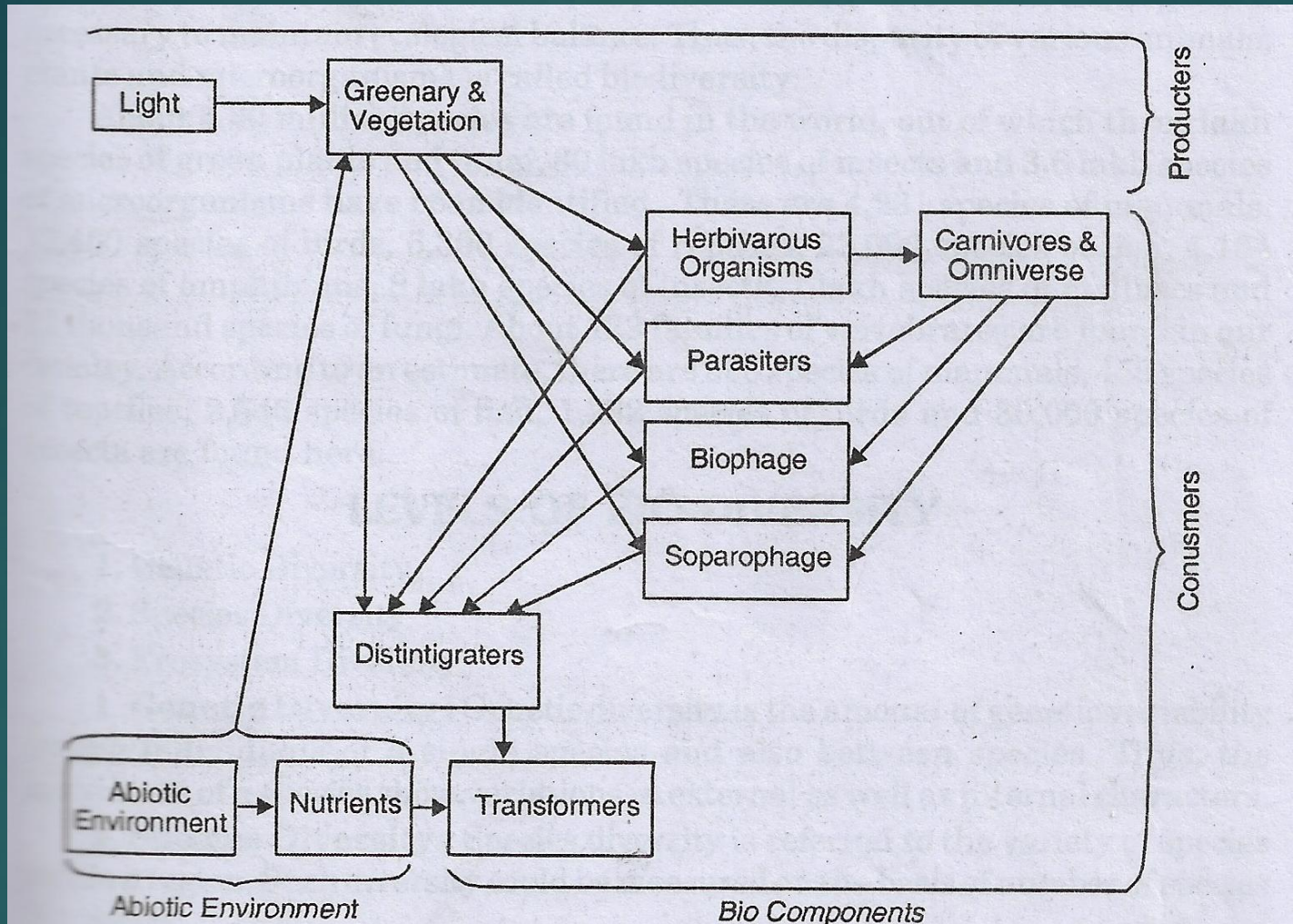


2. Organic and Inorganic Substances: They are of the following types:

(i) **Macro-nutrients:** Carbon, Hydrogen, Oxygen, Nitrogen, Asphorus, Potassium, magnesium, calcium, iron etc.

(ii) **Micro-nutrients:** Zinc, manganese, copper, boron and aluminium.

(iii) **Gases:** Hydrogen, Oxygen, Carbon dioxide, Ammonia, N, etc. Apart from this, the movements of the earth, gravitational force, nature of athosphere etc. affect the biological world indirectly.



Biotic & Abiotic Component

THANK YOU