

MODULE - III: ECOSYSTEM

ECOSYSTEM [A.G. TANSLEY , 1935]

⇒ The Basic Functional and Ecological unit in which Living organisms Interact

Among
Themselves

With Surrounding
Environment

The components are linked together through

BIOTIC

ABiotic

Nutrient
cycles

Energy
Flows

The ENERGY that flows through ecosystems are primarily OBTAINED FROM SUN.

Ecosystems are DYNAMIC ENTITIES.

Ecosystems are controlled by both factors :

EXTERNAL

SOIL

CLIMATE

TOPOGRAPHY

INTERNAL

DISTURBANCE

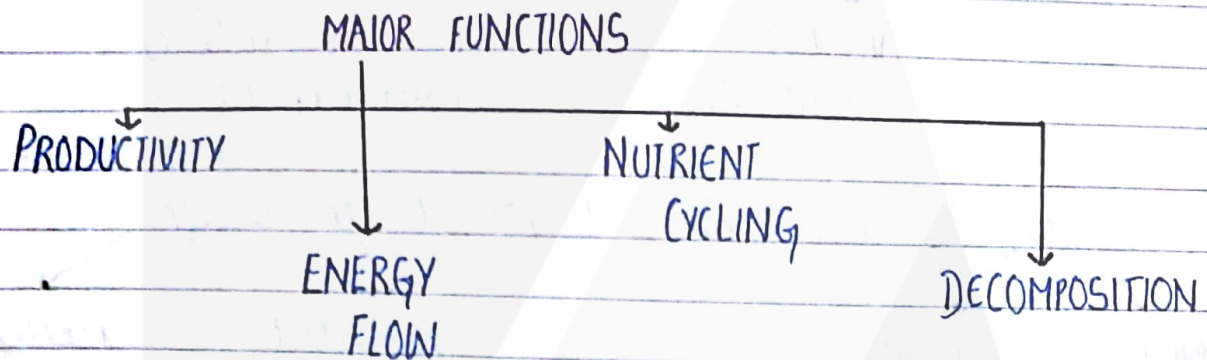
SUCCESSION

TYPES OF
SPECIES

GLOBAL ECOSYSTEM : The Entire Biosphere consisting of several local ecosystems.

ECOSYSTEM STRUCTURE AND FUNCTION

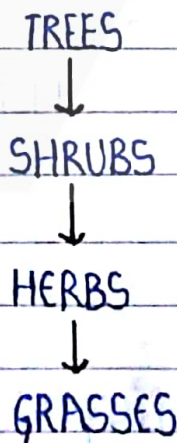
SPECIES COMPOSITION : The Identification and Enumeration of plant and animal species in an ecosystem.



The function of ecosystem is AFFECTED BY BIODIVERSITY.

Ecosystem also PROVIDES a wide variety of GOODS and SERVICES upon which people depend.

STRATIFICATION : Vertical Distribution of Different species occupying different strata.



ENERGY FLOW IN AN ECOSYSTEM

PAR : Photosynthetically Active Radiation \Rightarrow 50% out of the total incident solar radiation.

Plants capture only 2-10% of the PAR. This small amount ENERGY sustains the entire living world.

There is UNIDIRECTIONAL FLOW OF ENERGY :



The energy in an ecosystem is TRANSFERRED in the FORM of FOOD.

Major part of food energy is lost as heat during metabolic activities.

Only a very small fraction becomes stored as BIOMASS.

1) PRODUCERS

⇒ The GREEN PLANTS in the ecosystem which can

TRAP SOLAR
ENERGY

↓
CONVERT ENERGY INTO
CHEMICAL ENERGY

2) CONSUMERS

⇒ The animals that depend on plants for food.

3) DECOMPOSERS

⇒ The biotic components which decompose dead organic matter FOR REUSE by autotrophs.