Biome: Objectives, Meaning of Biome, Classification of Biome

Energy which reaches from sun is the prime source for various lives on the earth. But its distribution on the surface of the earth varies because of various reasons. Due to this, the biotic life varies tremendously from hot humid to cold dry. Hence, they give rise to assemblage of plants and animal life in various geographical settings.

Objectives

The major objectives of this chapter are:

- To explain the term biome
- To identify different types of biomes
- To describe environmental conditions of these biomes
- To establish the relationships between plant and animal communities
- To analyse the human responses with the biotic lives of these regions

Meaning of Biome

- Biome may be defined as a large natural ecosystem wherein we study the total assemblage of plant and animal communities. Here, all the biota has the minimum common characteristics and all the areas of biomes are characterized by more or less uniform environmental conditions.
- Though, a biome includes both plant and animal communities, but a biome is usually identified and named on the basis of its dominant vegetation, which normally constitutes the bulk of the biomass. These vegetations are most obvious and conspicuous visible component of the landscape. By biomass we mean the total weight of all living organisms, plants and animals, found in the biome.

Factors Affecting Biomes

There are various factors which affects the size, location, and character of a biome. The important factors are as follow:

- Length of daylight and darkness which is mainly responsible for duration of photosynthesis
- Mean temperature as well as diurnal and annual differences in temperature to find out extreme conditions
- Length of the growing season
- Precipitation which includes total amount, variations over time, and intensity
- Wind flow that include speed, direction, duration, and frequency

- Soil types
- Slope
- Drainage
- Other plant and animal species

Classification of Biome

There are two major bases of classifying biome.

On the Basis of Climate with Special Emphasis on Availability of Moisture

According to this basis, biomes are determined by the degree to which moisture is available to plants in a scale hanging from abundant (forest biome) to almost scarce (desert biome) . Within each biome, conditions of temperature are vastly different from low to high altitudes and low to high latitudes. According to this classification, there are four major types of biomes:

- Forest biome
- Savanna biome
- Grassland biome
- Desert biome

On the Basis of Climate and Vegetation

There is a close relationship between the world distributional patterns of plants and animal species and the climatic types of the world. Based on this relationship the world has been divided into different biome types. The vegetation is the most dominant component of the biomes. As the vegetation and climate have intimate relationship the world is divided into various types on the basis of climates. Further, these climate-based biomes are divided into various sub-types on the basis of vegetation.

Classification of Biomes on The Basis of Climate and Vegetation

Biomes of the first order (Based on climatic zones)	**Biomes of the Second order (Based on Vegetation)**	**Biomes of the Third order (Combination of climate and vegetation)**
1. Tropical Biome	(i) Tropical Forest Biome	(a) Evergreen Rain-Forest Biome (b) Semi-evergreen Forest Biome (c) Deciduous Forest Biome (d) Semi-deciduous Forest Biome (e) Montane Forest Biome (f) Swamp Forest Biome
	(ii) Savanna Biome	(a) Savanna Forest Biome

		(b) Savanna Grassland Biome
	(iii) Desert Biome	(a) Dry and arid desert Biome (b) Semi-arid Biome
2. Temperate Biome	(i) Boreal Forest Biome (Taiga Forest Biome)	(a) North American Biome (b) Asiatic Biome (c) Mountain Forest Biome
	(ii) Temperate Deciduous Forest Biome	(a) North American Biome (b) European Biome
	(iii) Temperate Grassland Biome	(a) Soviet Steppe Biome (b) North-American Prairies Biome (c) Pampa Biome (d) Australian Grassland Biome (e) Southern Hemisphere Biome
	(iv) The Mediterranean Biome	
	(v) Warm Temperate Biome	
3. Tundra Biome	(i) Arctic Tundra Biome	
	(ii) Alpine Tundra Biome	

Classification of Biomes on the Basis of Climate and Vegetation

A number of biomes are found in different parts of the world. For detailed study, three biomes one from each climatic zone have been selected. Those three biomes are:

- The Evergreen Rainforest Biome
- The Temperate Grassland Biome
- The Arctic Tundra Biomes