

The topic for today's session is ' India a mega- diversity nation, which is a part of the unit biodiversity and its conservation.

The learning outcome will be the student will be able to understand why India is a major diversity nation.

The concept of mega diversity nation was put forward in 1988. One of the main criteria for a nation to be qualified as a mega diversity country is that this nation must possess at least about 5000 endemic species. The mega diversity concept is based on four principles stated as follows.

1. Every nation CIRM biodiversity is significantly important to that nation. Survival and must be a central component of a national and regional development policy.
2. Biodiversity is unevenly distributed, greater variation lies in the tropical region than in other regions
3. Many of the wealthiest or most diversified countries are under severe threat due to biodiversity loss.
4. To succeed maximum effect with limited resources, concentration should be on those countries, which are rich in biodiversity and contain mostly endemic, severely threatened species.

There are 17 megadiverse nations.

- North America - United states of America and Mexico
- South America - Colombia, Ecuador, Peru, Venezuela and Brazil
- Africa - Democratic Republic of Congo, South Africa and Madagascar
- Asia - India, China, Malaysia, Indonesia and Philippines
- Oceania – Papua New Guinea and Australia

So let us see how India is a mega diversity nation.

As early as 70 million years back, the Pangaea split into two components. That is the northern continent and the southern continent. India is a fragment of Gondwana along with Africa, Australia and Antarctica. Tectonic movement pushed India further northward across the Equator to unite with the Eurasian continent. With the closing of the Tethys sea, the flora and fauna have originated and evolved in Europe and Far East, migrated and entered India before the Himalayas formed.

So the location of India is at the intersection of three realms. That is Afro trap-tropical, Indo Malayan and Paleo arctic. India is located between 6 degrees and 38 degrees North latitude and 69 degrees and 97 degrees East longitude in South Asia. Now the landmass has about 3029 million hectares of total area. India has remarkable species diversity and occupies about 2.4% of Earth's land area.

Flora

Plant species – 46,000, representing about 11.8 % of the world's flora.

130 species of ancient plants.

1232 species of pteridophytes.

15,000 species of angiosperms/flowering plants, 65 species of gymnosperms, 40 species of insectivorous plants.

70 types of saprophytes, 14,500 types of fungi, 2,850 species of mosses, 990 types of algae, 2075 species of lichen, 1082 species of orchids and over 850 species of bacteria and virus as reported by botanical survey of India.

167 - plant species of cereals, millets, vegetables, pulses, fibre crops and oilseeds.

Fauna

Over 81,000 species of animal, 350 diverse mammal species, 1200 avian species, 453 reptilian species and 50,000 recognized species of insects, together with 13, 000 butterflies and moths as per zoological survey of India. Only 55 bird species and 44 mammal species exhibit endemism in India.

Endemism is maximum among the reptiles and the amphibians in the western ghats.

In comparison with the number of species in the world, we see that India has a large number of species available. So which are mostly endemic to the different hot spots in the country.

There is a need to protect the biodiversity of India which could be a possible threat.

1. large scale development projects.
2. mining activities or building up of dams for hydroelectricity
3. projects for irrigation purposes. conversion of biodiversity rich
4. Poaching of wildlife/overexploitation of forest resources.

Strategies which we can undertake to conserve and use these resources at a sustainable rate

Special status and protection should be given to biodiversity rich areas.

These areas should be converted to national parks, wildlife, sanctuaries and biosphere reserves, some of the ecologically fragile and sensitive areas can be protected.