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FACULTY OF ENGINEERING AND  
TECHNOLOGY

# Lecture- 19

## Biodiversity-Part 3



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# Biodiversity at global, national and local level

Presently 1.8 million species are known and documented by scientists in the world.

Scientists have estimated that the number of species of plants and animals on earth could vary from 1.5 to 20 billion. Thus the majority of species are yet to be discovered.

Most of the world's bio-rich nations are in the South, which are the developing nations.

Countries with diversities higher than India are located in South America such as Brazil, and South East Asian countries such as Malaysia and Indonesia.

The species found in these countries, are different from species found in India. This makes important for us to preserve our own biodiversity as a major economic resource.

While few of the other 'megadiversity nations' have developed the technology to exploit their species for biotechnology and genetic engineering, India is capable of doing so.

International agreements such as **Convention in the Trade of Endangered Species (CITES)** which is intended to reduce the utilization of endangered plants and animals by controlling trade in their products and in the pet trade. India has signed this agreement.

# India as a mega-diversity nation

- Among 17 biologically rich or mega-diversity nations, India stands at 10<sup>th</sup> place for its great variety of plants and animals, many of which are endemic to the country.

## MEGADIVERSE COUNTRIES

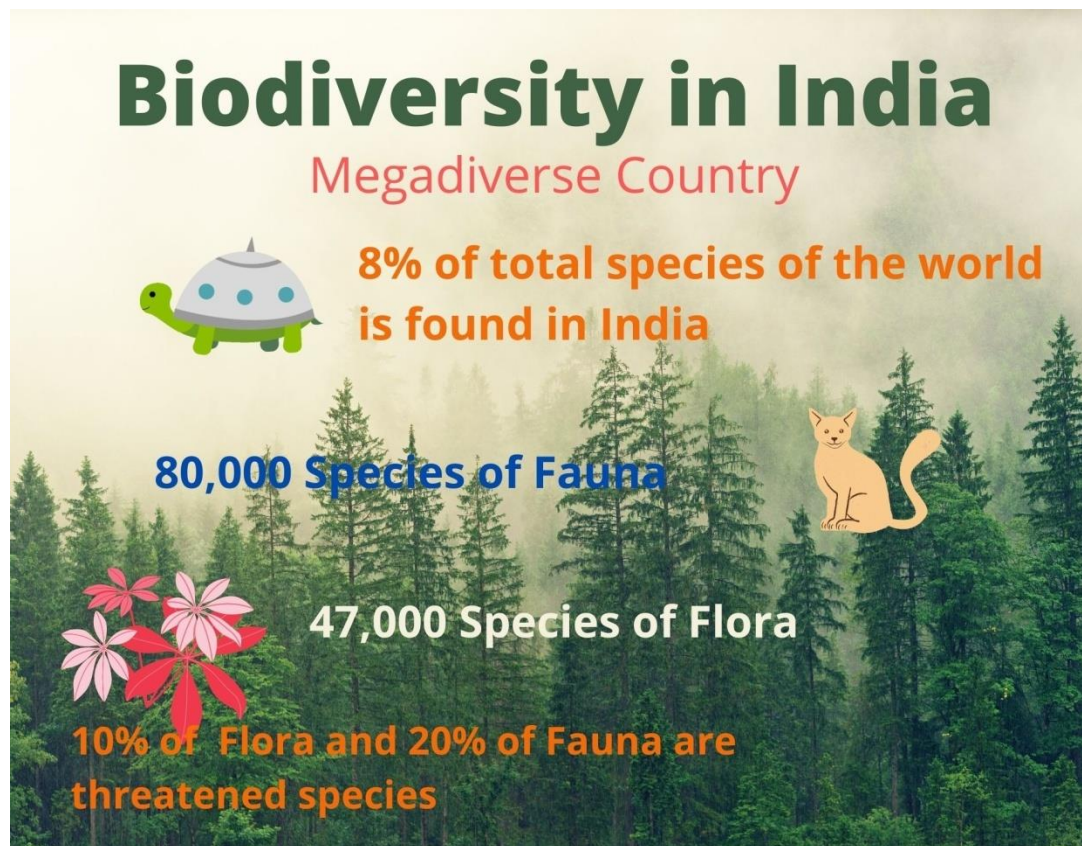
The term megadiverse country refers to any one of a group of nations that harbor the majority of Earth's species and high numbers of endemic species. Conservation International identified 17 megadiverse countries in 1998.



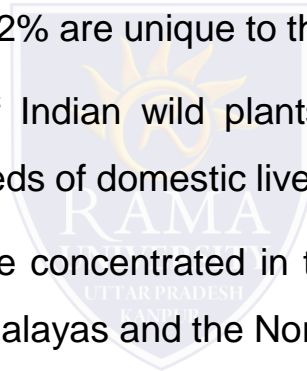
Sources: <https://images.app.goo.gl/WysiTt88nHw1nqHv7>

# India as a mega-diversity nation

- India has 350 different mammals (rated eight highest in the world), 1,200 species of birds (eighth in the world), 453 species of reptiles (fifth in the world) and 45,000 plant species, of which most are angiosperms, (fifteenth in the world).



- India has 50,000 known species of insects, including 13,000 butterflies and moths.
- It is estimated that 18% of Indian plants are endemic which include one-third of the flowering plants.
- Among amphibians found in India, 62% are unique to this country.
- Apart from the high biodiversity of Indian wild plants and animals there is also a great diversity of cultivated crops and breeds of domestic livestock.
- The highest diversity of cultivars are concentrated in the high rainfall areas of the Western Ghats, Eastern Ghats, Northern Himalayas and the North-Eastern hills.



# Hotspots of Biodiversity

A **biodiversity hotspot** is a biogeographic region with significant levels of biodiversity that is threatened by human habitation.

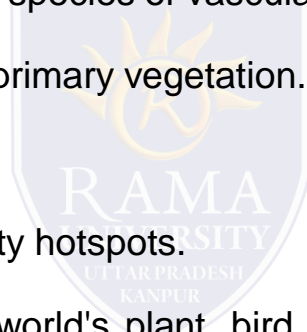
To qualify as a biodiversity hotspot on a region must meet two strict criteria:

- it must contain at least 0.5% or 1,500 species of vascular plants as endemics, and
- it has to have lost at least 75% of its primary vegetation.

Around the world, there are 36 biodiversity hotspots.

These sites support nearly 60% of the world's plant, bird, mammal, reptile, and amphibian species, with a very high share of those species as endemics.

Some of these hotspots support up to 15,000 endemic plant species and some have lost up to 95% of their natural habitat.



India is a country rich in biological diversity.

There are four biodiversity hotspots in India:

- The Himalayas,
- The Western Ghats,
- The Indo-Burma region and
- The Sundaland (includes group of Islands).

