Biodiversity matters

   Biodiversity means the diversity of life in all its forms — the diversity of species, of genetic variations within species, and of ecosystems. It provides mankind with a wide range of benefits, such as important goods (like timber and medicinal products) and essential services (like carbon cycling and storage, clean water, climate mitigation, mitigation of natural hazards, and pollination).

   The financial value of the goods and services provided by ecosystems and species — by life on earth — has been estimated at Rs 1756 x 10 ^{4} core per year — more than half the value of what humans produce each year. The conservation and sustainable use of biodiversity is essential to poverty eradication in economically developing countries like India and to sustainable livelihoods and sustained economic growth. From nature, we also derive pleasure, fulfillment, inspiration and solace. Nature is fundamental to our culture, language and psychological and spiritual

well-being.

Biodiversity loss has accelerated to an unprecedented level

Yet biodiversity is increasingly affected by mankind. Worldwide, the current global species extinction rate is estimated to be 50 to 1 000 times higher than the natural background extinction rate. This rate of loss is projected to accelerate 10-fold by 2050. The principle causes of this loss are changes in habitats because of human development (such as intensive production systems, construction, and extractive industries), invasions of alien species, over-exploitation (fishing, hunting and collecting), pollution, and global climate change.

India has committed itself to halting the loss of biodiversity by 2020

At the UN World Summit on Sustainable development, at Johannesburg in 2002, governments committed themselves to significantly reducing the rate of biodiversity loss by 2020. India has committed itself to halting the loss of biodiversity in the India by 2050.

The Government of India is setting up biosphere reserves in different parts of the country. Till 2008 – 28 bio Sphere has been setup. Legal protection is also provided to national park and sanctuaries, which cover only to national parks and sanctuaries, which covering 4.5% of India's land area.

About India

- Total Land Area : 328759000 ha
- Protected Area : 5.2%
- Forest Area : 19.27 %
- Bio-Sphere Reserves : 1515000 ha
- No of Species (plant) : 49,219
- No of Species (animal) : 81,251
- Biodiversity contribution : 8%

Conserving Bio – diversity

- Conservation is the wise management of natural resources, including the preservation of habitats and wild life.

- Many Conservation effects are aimed at manning individual species to keep them from becoming extinct.

- Protecting resources for the future require people to change the way they earn their living today.

Major Problems with biodiversity conservation

- Low priority for conservation of living natural resources.
- Exploitation of living natural resources for monetary gain.
- Values and knowledge about the species and ecosystem inadequately known.
- Unplanned urbanization and uncontrolled industrialization.

Major biodiversity threats

- Habitat destruction
- Extension of agriculture
- Filling up of wetlands
- Conversion of rich bio-diversity site for human settlement and industrial development.
- Destruction of coastal areas
- Uncontrolled commercial exploitation.
- Pollution

List of Threatened species in India

Higher Plants
- Total   : 18,664
- Threatened   : 244

Mammals
- Total   : 390
- Threatened   : 88

Breeding Birds
- Total   : 458
- Threatened   : 73

Reptiles
- Total   : 521
- Threatened   : 25

Amphibians
- Total   : 231
- Threatened   : 3

- Fish
- Total   : 5749
- Threatened   : 9

Red List of Endangered animals

- Critically Endangered   : 7
- Endangered   : 42
- Vulnerable   : 75
- Threatened   : 3

Reduction in bio diversity are happing due to

- Deforestation.
- Global warming.
- Green House gases.
- Ozone depletion.
- Air pollution

    Human activity can reduce biodiversity by:

- Altering habitats
- Hunting species to extinction
- Introducing toxic compounds into food webs
- Introducing foreign species to new environments

Vector-borne Diseases

Vector-borne infectious diseases are those diseases in which the infectious agent is transmitted to the human host via an agent -- the vector. The vectors for most of the diseases likely to be observed are arthropods, e.g., fleas, ticks, and mosquitoes.

The WHO task group identified several vector-borne diseases that might be influenced by climate change. Examples are malaria, filariasis, dengue ,yellowfever , brain fever, cholera , madcowdiseases, and bird flu etc.

Vector Control

It is very difficult to totally eradicate the insert vector. It includes vector surveillance breeding Source preventation and reduction, biological, chemical control and public education.

In India Vector Control Research Centre (VCRC) was established in 1975 as a Centre of excellent for research and training in vector borne diseases and control.

Instead of trying to control the vector the disease causing organism can be targeted for eradication.

Vaccine is available that gives immunity against vector borne diseases.

Also ecology must be preserved for preventary vector brone diseases.

environmental management strategies that can reduce or eliminate vector breeding grounds altogether through improved design or operation of water resources development projects as well as use of **biological controls** (e.g. bacterial larvicides and larvivorous fish)that target and kill vector larvae without generating the ecological impacts of chemical use.

when other measures are ineffective or not cost-effective, makes judicious use of **chemical** methods of vector control, such as indoor residual sprays, space spraying, and use of chemical larvicides and adulticides; these reduce disease transmission by shortening or interrupting the lifespan of vectors.