

## Biodiversity – Relevance and Conservation

---

Threats to biodiversity have been increasing and they have been recognized by scientists and environmentalist groups. Biological diversity is the term used to describe the complete array of species-plant, animal and insect-that live on land and under water. It is very essential for the normal functioning of ecosystem and the biosphere as a whole. It has a great significance for its ecological, social, economical, cultural and ethical values and so its conservation becomes very important for survival and sustainable development.

Since the dawn of life, species have been dying out as a result of disease, lack of food or failure to adapt to environmental change. Fossil remains suggest that 5 billion species, from micro-organisms to dinosaurs, have spent some time on earth. The extinction of species have accelerated over years. Scientists believe that by 1990, the rate had accelerated to one per hour and by 1992 to one every 12 minutes. And because of the interdependence of life on earth, the impact of loss of so many species can be disastrous as damage to any part of the vast, delicate web of life carries the risk of eventual, widespread harm to the whole.

The greatest cause of species extinction is the disappearance of natural habitats-forests, wetlands and coastal regions-through deforestation, urban sprawl, rural development, air and water pollution, overpopulation and other pressures linked to human activities. Humans have been transforming natural ecosystems since they became agriculturalists 10,000 years ago. Human use of land and other natural resources has kept on increasing.

'Alien invasion' is also important cause of species loss. Plants and animals carried willingly or unwillingly by humans from one ecosystem to another can flourish if the pests, predators or diseases which usually live with them are absent. Alien species are causing havoc in Africa's Lake Victoria, where introduction of the Nile perch has caused the number of smaller native species to plummet. In Hawaii, native flora are being decimated by imported animals such as cattle, goats and rats.

Global warming can also cause to the loss of Biodiversity. If the world's climate changes as many scientists predict it could over the next 50 years, many plants and animals will no longer be suited to their environments. This could affect the world's ability to produce food. Plants, being immobile, cannot adapt as quickly as animals. Even if climate pattern change only slightly, rising levels of carbon dioxide in the atmosphere are likely to affect plant growth. Increases in harmful

ultraviolet radiation associated with depletion of the ozone layer could also alter or finish species.

The conservation of biodiversity becomes very important in the light of its significance to ecology and balance of earth and also for its social, economical, cultural and ethical values. The best way to preserve the full range of species is by protecting large areas of natural habitat. Such action is needed worldwide, but the battle will be won or lost in the tropics, where wet, warm ecosystem such as rain forests, coral reefs and coastal waters support perhaps two thirds of all species.

The challenge facing the conservation is to reconcile the continuing economic needs of the industrialised nations and, more importantly, the basic needs of developing countries struggling to ease poverty and raise living standards. Governments especially those of developing countries, where most tropical ecosystems are located are inclined to view environmental protection and economic growth as conflicting goals, with the latter taking precedence. The pressure on developing countries to repay their foreign debt, their lack of access to modern technology at affordable prices and the industrialized nation's reluctance to slow their own assault on species in northern temperate forests have further hindered efforts to protect biodiversity.

The key to reconciling these conflicting goals is sustainable development-development that meets the needs of the present without compromising the ability of future generations to meet their needs. For instance, in Brazil's Amazonia region, protected "extractive reserves" were established in 1988, from which nuts, rubber and other "renewable" materials are harvested. It is thought that sustainable harvesting from extractive resources is more profitable in the long run than logging or converting the forest to crops or pasture-and it conserves biodiversity.

Several conventions and agreements have been drawn up since Stockholm Conference in 1972 to protect the biodiversity. Rio Summit in 1992 was a landmark earth summit in which majority of the world's nations signed a convention on biological diversity and 27-point ground rules were presented. The polarization between the North and South on various issues such as funds and use of biodiversity could not match what was expected from Rio Summit.

To protect the biodiversity, it is urgently needed to adopt a general obligation for all states to conserve biological diversity on the lines of Stockholm Declaration and the World Charter of Nature and Rio convention with the establishment of funding mechanism for assisting contracting parties, especially developing countries. A major shift in thinking at all levels of policy-making will be required if

people and their governments are to save the earth's variety of life. Additional financial, technical and human resources are needed as well; the cost of adding the desired objectives has been estimated at \$ 500 million to \$ 50 billion per year. Ultimately, today's massive loss of species and habitat will be slowed only when the human community understands that nature is not a realm to be exploited but an ally requiring respect in keeping the tenants of sustainable development.