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# Biodiversity is a pressing necessity

By Abul Farah

Advances in gene technology and the recently developed 'cloning technique' hold out high hopes for products crucial to human welfare, such as insulin and interferon, yet an unrestrained manipulation of both may result in unintended harm to biodiversity, to the health of ecosystems and humans themselves. Biodiversity in modern science studies is regarded as "an account of an idea rather than a discourse on variety," (*Nature* Vol.385, 1997).

Biodiversity (variety in wilderness) carries the load of preserving the ecosystems. "Conserve biodiversity and you preserve species, richness, habitats, and opportunities for living — all three" is the message of David Takacs in his book, *The Idea of Biodiversity, Philosophies of Paradise*. Takacs argues that nuclear war is a threat to civilisation but in importance it is second to species extinction and he asserts that "complexity (biodiversity) begets stability."

Defined more narrowly, biodiversity is a measure of world's variability of genes, species and ecosystems, of actual and potential use or value for humanity. At the Rio de Janeiro Earth Summit, 1992, the Convention on Biological Diversity (CBD) was signed (ratified by 110 countries so far) and the importance of biodiversity was duly and emphatically recognized. But somehow people are not keen and committed about it despite the fact that earth's biodiversity is intrinsic and aesthetic.

A UN report on Global Biodiversity Assessment estimates the total number of species on earth at about 13 and 14 million of which only 13% or 1.5 million have been scientifically described. And of these about 10,000 animals and plants are currently threatened with extinction which is accelerating.

Flowering plants and vertebrate animals have recently become extinct at a rate estimated at 50 to 100 times the average expected natural rate. Here a point of particular pertinence is that fauna as a whole

(including insects) for sustenance and survival primarily depend on floral growth which is being mercilessly mutilated.

Also plants are the most puissant natural instrument of reduction of atmospheric CO<sub>2</sub> (3 billion tons annually) and can ward off global warming. It is alarming to note that plant life is disappearing at a faster rate due to human-created changes in the ecosystems and in the last 10,000 years since the advent of agriculture, globally the total area of woodlands and forests has decreased by about 15%. Some scientists have already identified 6,000 plants vital to people (900 million) who live on arid lands. The forest cover is dwindling and with that goes the soil and desertification sets in. For example, in tropical rain forest areas it is estimated that removal of two hectares of tropical produces one hectare of dry land undergoing desertification. Alerted by such alarming data Pakistan opted for a massive tree plantation programme. Tree plantation at the cost of natural flora (including shrubs, bushes) is not a wise exercise.

The large number of indigenous species adapted to the local environmental conditions constitute the treasure of biodiversity in our area. The natural fauna (birds, insects, and quadrupeds) totally depend on the flora for food (seeds and nectar) and shelter. This is why plant diversity plays a pivotal role in all the ecosystems. The total number of plant species the world over is estimated at about 270,000 and of these more than 90% exist in wilderness. According to IUCN and WWF report about 60,000 plant species may become extinct in about 50 years and a large number would remain undiscovered.

In Pakistan there exist about 5,000 plant species and they are threatened every where due to their ruthless removal. In Karachi alone, a few years back there were more than 400 wild plant species. But hardly 50% of them have survived the spree of development. Tree plantation is a sacred service but at the same time the natural flora should be protected because once lost it is lost forever. During the monsoon season, the Karachi University campus used to be an island of greenery. But in the name of cleanliness, natural growth has been erased and the campus wears

a deserted look. For protection of flora life in Sindh, Dr Surayya Khatoon of Karachi University has been crusading for years through the Letters to the Editor columns.

Our planners should bear in mind that raising monoculture of 2 to 3 species at the cost of hundreds of naturally (in wilderness) occurring plants species in fact leads to the destruction of ecosystem. Man's choice is never superior to that of Nature. Also due to human activities more vulnerable species of plants and shrubs fail to reestablish themselves and in their place more aggressive species, unfriendly to the ecosystem reestablish — a manifestation of the survival of the fittest phenomenon. Biodiversity should be seen as the natural biological capital of the earth and the failure to protect it will restrict future options for all countries.

In Pakistan, the following measures may be considered for devising a strategy for the protection of biodiversity:

- \* The forestation programme should include plantation of those tree species that grow naturally in an area.

- \* Plantation of exotic species, specially foreign ones as being presently done, should be restricted because they are unfriendly to the local species. For example, Mesquite (*Prosopis juliflora*, a native of Mexico) was introduced in our region about 100 years ago for plantation in the desert area. It proved aggressive and has eliminated the local species.

- \* During tree plantation, natural vegetation should not be erased. If this practice goes unchecked a large number of plants and animal species would become extinct in the near future. This is a violation of the international biodiversity convention to which Pakistan is a signatory.

- \* Every natural growth has a purpose and should not be treated as junk and removed without realising its importance for the sustenance of the ecosystem.

- \* The fundamental requirement for the conservation of biodiversity is the insitu conservation of natural habitats and the maintenance of viable population of species in their natural surroundings.

- \* For survey and record of marine life, the National Institute of Oceanography may enhance its efforts and publish the results of its efforts soon. ■