

Chapter VI: The Uses of biological diversity

Humans make numerous uses of biological diversity, some of which can be evaluated economically.

VI.1 Food Uses of Living Resources

Harvesting activities in natural environments (gathering, fishing, etc.), which constitute a very ancient practice in human history, remain important today, although more diversified and of varying nature depending on the level of economic development in different regions of the world.

In many countries, wild and semi-wild plants contribute to food security and public health. These include leaves, roots, tubers, fruits, and mushrooms. Some are considered delicacies, while others play an essential role in the diets of rural populations living on subsistence agriculture, providing vitamins and minerals.

According to various observations, the contribution of such plants to human diets is significant, but their real contribution to the local economy is often unknown, as these products do not appear in household accounts.

Wild fauna also contributes significantly to human food. In many rural societies especially in tropical regions various invertebrate species are consumed: insects (termites, grasshoppers, etc.), caterpillars, mollusks. Products such as honey are also highly prized.

Several species of vertebrates (mammals, birds, reptiles) are hunted for their meat, and fishing whether in marine or freshwater environments constitutes the primary source of protein worldwide.

Annual aquatic harvests are estimated at nearly 100 million tons. These harvests are close to acceptable limits to ensure resource renewal is not compromised. In reality, many stocks are overexploited.

VI.2 Extractivism Products

The term *extractivism* refers to the commercial exploitation of non-timber forest products such as fruits, gums and resins, oils, and fibers.

VI.3 Wood

The timber trade is an important economic activity at the international level. Regardless of quality, wood always finds a use (firewood, paper pulp, matches, furniture, construction, etc.).

In the absence of proper management, many forest environments are severely degraded by excessive exploitation. It is also important to highlight the rapid decline of forests due to palm oil plantations destined for agrofuels in certain Asian countries.

VI.4 Industrial prospects of biotechnology

The industrial application of biotechnology is of considerable strategic interest. Industrial microbiology uses enzymatic and metabolic capacities for two major types of transformations:

- the fermentation of agricultural raw materials (e.g., cheese production) or depollution,
- the production or modification of highly diverse molecules (enzymes, antibiotics, hormones, aromas, etc.)

VI.5 Ornamental plants and animals

The use of ornamental plants (blue roses, black tulips, orchids, cacti). The trade in live animals is also significant for companion animals (cats, dogs, birds, etc.), for zoos (wild animals), public aquariums, or even for research purposes (mice, rats, primates, etc.).

Furthermore, certain products such as ivory, tortoise shells, snake and crocodile skins, the furs of numerous mammal species, and bird feathers have led to the mass slaughter of these animals.

VI.6 Ecotourism

Ecotourism has become a new industry. The enhancement of biodiversity—whether through the observation of wild animals or the attraction of scenic natural landscapes—is a particularly important source of income for some countries.

They have developed tourism policies based on promoting their natural heritage. Kenya is a good example.

Natural parks and trekking attract a sufficiently large number of visitors that concerns are rising regarding the long-term sustainability of these sites.

Tourism is therefore also responsible for ecological problems worldwide, and urban “environmentalists” may themselves become a threat to biodiversity.