

VALUES OF BIODIVERSITY

Biodiversity is a valuable natural resource for the survival of man kind. Man has domesticated a number of economically important plants and animal species. Old traditional varieties and the wild relatives of domesticated plants and animals constitute a vital genetic resource for us. Many plants and animals including wild life are of very important for human being. They can be used directly or indirectly to have consumptives, productive, social, ethical, aesthetic & options values i.e. in terms of money.

Consumptive value. Most of the developing countries obtain fuel wood from forests. Still more than 1500 million people cook their food by burning wood. About 1000 million cubic meter wood is used for fuel across the globe. This imposes heavy pressure on forests. Hunting of wild life, use of grass with some commercially important plants as fodder are of only comptive.

Various tribal societies fully depend on forests (biodiversity) for their habitation and livelihood. They used tubers, roots, fruits, seeds and meat of wild animals as their food.

Productive Value : Bamboos, grasses, canes, essential oils, tanning material, dyes, gums, resin, drugs, spices, poisons, insecticides, soap substitutes, rudraksha, lac, honey wax, tusser, Mahua seeds, Mahua flower and other seeds are forest products, they have their high commercial values. In addition to these, various herbs and animal body parts are sold in commercial market, both at national and international levels. Some benefits like, water quality, recreation, education, scientific research, regulation of climate etc. are indirect values to biodiversity that provide economic advantages to the people without consumption of the resource.

Some plants have been found to have immense medicinal properties, few of them with their curative properties are given below.

<i>Name of medicinal plant</i>	<i>Medicinal derivative</i>	<i>Curative property</i>
Cinchona	Quinine	Treatment of malaria
Isabgoal	husk and seeds of Isabgoal	Laxative, useful in chronic diarrhoea and dysentery
Opium poppy	Morphine, codeine and narcotine	Mental problems and cough
Brahmi	Juice of leaves and and stems	Repairs loss of memory
Ashwagandha (<i>Rauolfia serpentina</i>)	Serpentine	Urine problems
Basil (Tulsi)	Leaf-extract	Cough and cold, fever
Chalmogra	Seeds	Leprosy
Jambul	Bark-extract	Asthma and Bronchitis
Kalmegh	Root-extract	Liver tonic
Doob	Leaf-extract	Antiseptic

The lack of marketing facilities, lack of technical and financial support, involvement of middlemen in the business and large range of variation in the selling price of medicinal plants are keeping away farmers from the main trade.

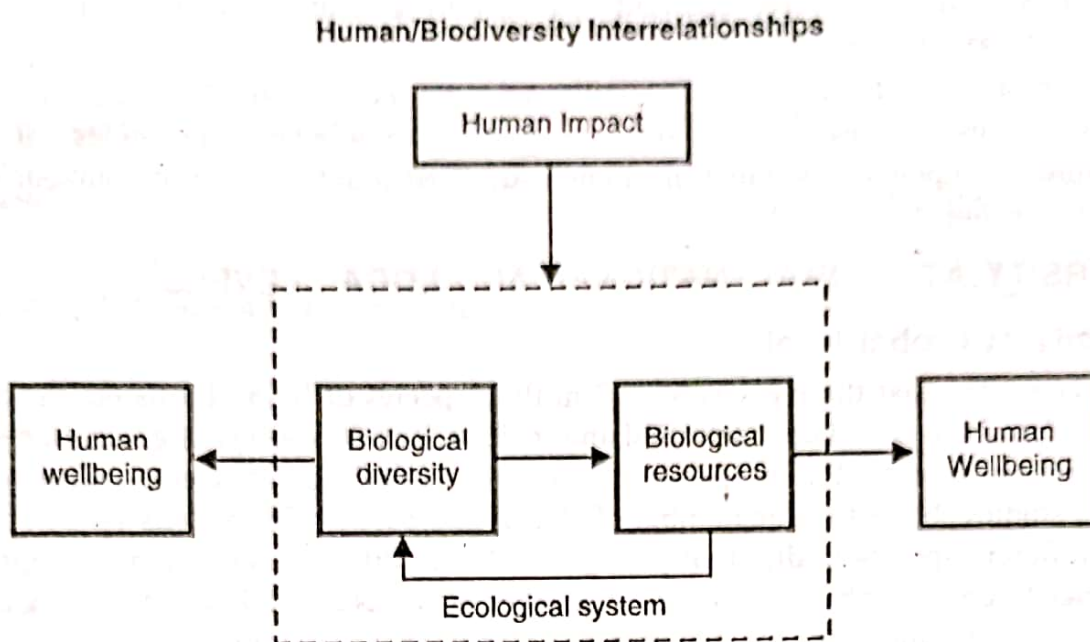
Many pharmaceuticals have traditionally been derived from plants and animal sources. World-wide medicines from plants are worth over 40 billion dollars a year (Govt. of India 1991). Eighty percent of the people in tropical areas depend upon traditional medicines. Penicillin and tetracyclin and amongst the 3000 antibiotics extracted from micro-organisms. Guggal is an oleo-gum resin, long used in ayurvedic medicines for its anti-inflammatory, anti-rheumatic and hypo-cholesterolemic activity.

SOCIAL VALUES : Social value is one of the instrumental values where some thing has as a means to another's end. Materialistic uses of biodiversity are the core of instrumental values. The biodiversity has distinct social value attached with different societies. Goods and services provided by ecosystems to our society include

- (1) Provision of food, fuel and fiber.
- (2) Provision of shutter and building materials.
- (3) Purification of air and water.
- (4) Detoxification and decomposition of wastes.
- (5) Generation and renewal of soil fertility, including nutrient cycling.
- (6) Control of pests and diseases.
- (7) Stabilization and moderation of earth's climate.
- (8) Maintenance of genetic resources as key inputs to crop varieties.
- (9) Live stock breeds, medicines and other products etc.

The charismatic species that have captured the public's heart and won their support for conservation. Biological resources are the pillars upon which we bind civilization. The loss of biodiversity threatens our existance i.e. social life. Thus protecting biodiversity is in our self interest.

These are the social values of biodiversity because biological resources provide the basis for life on earth including men. Fig. 4.1.



Ethical values : Ethical or religious values is also one of the indirect values of biodiversity. The ethical and religious value of biodiversity is rooted in the understanding that huminity is part of nature and that we are just one species among others. All species have an inherent right to exist. Future generations also have an inherent right to know them and to have the choice of using them or not.

Religions also have an significant impact on our attitude towards natural resources. The Buddhist perception of nature, for example, is based on different practices and approaches than that of Christian belief, though both are consistent with conserving biodiversity. Ethical value is one of the non-use values, which derive from human ethical considerations relating to matters such as the extinction of species and ecosystems.

Aesthetic value : The aesthetic value of biodiversity has been expressed in many ways through art, poetry, songs, literature, music and dance. Forests are closely linked with our religion and culture. Human race has a great evolutionary attachment with forests as our ancestors lived in forests. Forests are nature's laboratories, where Scholars study natural sciences. Many types of trees are worshipped in tribal and Hindu societies i.e. Peepal, Bargad, Tulsi etc. Some animals like cow is worshipped by Hindus in all over India. In series of this many birds, colourful butterflies, mammals have great aesthetic value for human beings. Eco-tourism generate large amount of revenue annually that gives the aesthetic value of biodiversity. In this tourism people far and wide spend a lot of money and time to visit wilderness areas, where they enjoy the aesthetic value of diversity.

OPTION VALUES : Biological resources existed in this biosphere are very important for human beings. The option value of biodiversity suggests that any species may prove to be a miracle species. It is the precious gifts of nature presented to us. Option value is the indirect value of a species to provide an economic benefit to human society at some point in near future.

Option value is the value or a person's willingness to pay (WTP) to preserve the option of having an irreplaceable resource available for future use. The concept of option value had infinitive appeal, but was less defined. Attempts have been made to integrate option value into the main body of consumer theory. Most literature on option value is primarily concerned with technical issues such as the sign/direction. But few studies like Greenley et al 1981, Chopra 1993, Pearce and Moran 1994 on the topic show that option value for biodiversity is high. In this value, the insurance benefit that is provided to society through the protection that a resilient ecological system provided.

Biodiversity is natural capital, and therefore supplies a stream of value to current & future generations. Secondly lowers the risk of adverse outcomes. This too involves a future perspective in that the risks being considered confront both current & future generations. This is the option value of biodiversity protection.

The option value refers to the possibility of a natural resource having some value in the future. It is often used in discussions about finding and developing new medicines. More than 70% of the chemical compounds used in drugs in industrialised countries have the same or similar uses in traditional medicines.