

## The Non-Use Value of Biodiversity and Biophilia

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From the ecological perspective, the theory of valuation of natural resources has extended concepts of value to encompass indirect use, bequest and non-use values (Turner 1991; Freeman 1993). Unlike the use values of resources, various non-use values are independent of the current use of the resource, and are difficult to estimate using conventional economic methods. Prominent constituents of non-use value are “existence value” and “bequest value” (Fig. 1) which do not accrue any quantitative benefit to the human user. Existence value represents the value an individual is willing to pay for the very existence of an environmental entity, even though (s)he receives no direct benefits from it. Bequest value refers to an individual’s willingness to pay for preservation of a resource for future use by posterity, without expectation of any return for himself/herself (Dasgupta et al 1994; Kadekodi 2000). A satisfactory valuation methodology of non-use values is yet to evolve. However, a few studies that have employed valuation of non-consumptive use indicate that actual public values for the natural resources are quite different from the what resource managers believe society wants (Bolon 1994).

The assignment of the religious value to a species or an ecosystem, regardless of its consumptive end-uses, seems to be a symbolic recognition by local cultures of its “existence value”. In most indigenous cultures, norms against callous or cruel conduct toward animals and excessive and gratuitous exploitation of plant resources are often motivated by “sentiments of affinity”, and are unrelated to a calculated empiricism (Kellert 1996, p. 151). The sacred karam tree (*Adina cordifolia*), and the shrub manasa (*Euphorbia neriifolia*) that have no direct use values, were nevertheless deified in local cultures. Similarly, a pond at Chhandar village in Bankura district, West Bengal, is not used by villagers for bathing, washing, fishing or any purposes, and yet is held sacred for over 600 years. The concept of sacred in local cultures thus implies a recognition of the existence value of living objects, over and above their use values, and a moral attitude towards nature in general. This attitude has been described by Fromm (1973) and Wilson (1988) as *biophilia* - an innate love and respect for all that is alive. Biophilia tends to be reflected in the entire belief system of the culture. Furthermore, “*Biophilous* ethics have their own principles of good and evil. Good is all that serves life; evil is all that serves death. Good is reverence for life, all that enhances life, growth, unfolding. Evil is all that stifles life, narrows it down, cuts it into pieces.” (Fromm 1973, pp. 365-6).

Good and evil omens may thus assume special semiotic significance with respect to biophilia. For example, the Santal consider as good omens the sighting of footprints of cattle, tiger and of leopard during a marriage ceremony. Likewise, the sighting of cattle, fox, and mango are auspicious signs to the Munda. Ill omens, for the Santal, include the sight of a headload of fuelwood, and for the Munda, that of felling of a tree (Baské 1993). Ill omens in the Hindu culture includes the sighting of a hunted turtle, and of cut fuelwood (Bhattacharya 1978), - signs that are carefully noticed during the rites of passage. These omens, and related auguries may be shown as an expression of the underlying belief that the presence of a variety of animals around people is a sign for “good living”, whereas the acts of destruction of nature are bad for human life.

### ***Existence value and ritual use value***

The existence value of an element of biodiversity, which otherwise does not have any consumptive use value, may get translated into a ritual use value. Thus, different species are considered essential in performing certain religious rites. Thus, Santal, Munda, Bhumij and Kora people must eat pieces of the bitter *Baola alu*, a wild dioscorid tuber, on the *Dak Sankranti* (the last day of *Ashadha*) as a ritual necessity. Flowers and leaves of different plants, that have no consumptive uses, are often associated with different rites of passage in tribal and Hindu cultures. *Saraca indica* twigs are a necessary item in Kora obituary rituals, and *Jatropha gossypifolia* flowers are essential in Bhumij wedding ceremony (Deb and Malhotra 1997), although these species are neither considered sacred nor used for any other purposes in these cultures.

### ***Biophilia in religious traditions***

Numerous tribes were drawn within the pale of Hindu society (Hunter 1903; Lal 1974). Many Bengal tribes observe all the Hindu religious rites, while retaining many features of their tribal identity (Baské 1993). Conversely, the Hindu pantheon has a range of icons, myths and rituals borrowed and adopted from local cultures (Datta 1944; Kosambi 1975; Thapar 1993). Several tribal deities (e.g. Shiva, Kâli, Hanumân) and the animistic institutions of sacred species and groves were incorporated into Hinduism. Such religio-semiotic exchanges between cultures over centuries have woven the general biophilous ethic into the local traditions.

Although Islam does not explicitly protect any bio-resource through rituals, several Muslim shrines in India have trees (such as *Punica granatum*) that are locally considered sacred (Malhotra, Shah and Hayden 1993). However, biophilia was incorporated in the tenets of Sufism (e.g. love for the whole of creation, oneness with the cosmos, etc.), and won a considerable popularity in medieval Bengal. The confluence of Sufism and Vaishnava movement in mediaeval Bengal heralded a new cult of *Satya-Pir*, which unified Vishnu and Allah, and preached non-violence. Many ancient shrines (*dargahs*) of Sufi saints are still visited by Hindu and Muslim pilgrims, and the groves attached to these *dargahs* are customarily protected as sacred entities.

### ***Biophilia and conservation in contemporary societies***

Three salient patterns of the cultural practices relating to nature emerge from the above discussion. First, the cultures of primitive technology that were empirically predicated on past experiences of resource crunch are likely to forbid the resource use modes that are known to have had adverse consequences in the past. “Profligate” modes of use of other resources, especially the ones that had not affected resource availability in the past would tend to remain unrectified. The “neutral” practices with no conservation consequences may appear under changed circumstances to be profligate, and *vice versa*.

Secondly, some of the current practices that signify “profligate” use of resources may have evolved in response to certain external influences on the local culture and economy. The erosion of traditional social organisation, loss of community control over natural resources, and inclusion of the resource items into market economy inevitably disrupt the cultural restraints on overexploitation of the resource (Ostrom 1990; Redford 1992).

Thirdly, all the cultural practices with any conservation implications, - incidental or otherwise - seem to depict a reverential attitude toward nature, an attitude that is likely to prevent exhaustive extraction and use of vital resources. Thus, the assigning of the “sacred” status to a multitude of plants and animals, and the design of the Lodha and Munda bird traps to prevent injury to the captured animal seem to reveal the respect for nature inherent in these cultures.

Obviously, certain practices regarding natural objects may not have any conservation consequences, yet may serve to reveal the *Weltanschauung* of the culture. **Fig. 2** depicts the semiotic plane of a culture on which the basic reverential attitude toward nature are reflected in, and reinforced by, various cultural institutions and belief systems. Some of these practices may

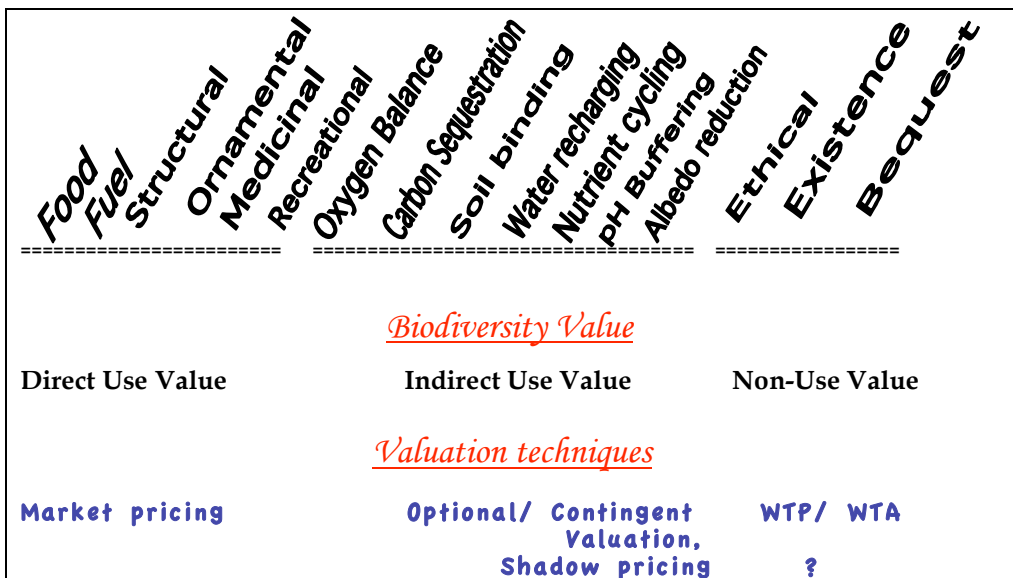
have conservation consequences to varying extents, while others may have no significant impact on the resource base. Sacred groves and seasonal restrictions of harvest are examples of the former; the omens depicted above, and the myths and beliefs about various plants and animals (Shepard 1993; Nelson 1993; Jahn 1993) are examples of the latter, which express the biophilia of the society along the metaphorical corridor. Omens, auguries and related myths may thus be described as a “syntactical” extension of the biophilous “semantic” structure.

**Possible strategies to reinforce biophilia**

This pattern of cultural interpenetration illustrates that a quintessentially biophilous ethic seems to be a common factor in all the local socio-religious institutions, and has been retained over centuries across ethnic and religious boundaries at the subaltern level. The existence of the institution of sacred groves in the country reveals the strength of the traditional ethos in spite of the continuing erosion of traditional resource base and values. It appears that as long as there is scope for development of biophilia, the traditional conservation ethic is capable of reasserting itself. This hopeful finding ought not to warrant complacency. Rather, it highlights the need of a rational policy toward conservation of biological and cultural resources. The national resource use policies and international directives must be predicated on “purely rational reasons” to cultivate biophilia (Wilson 1988: 140), which would require, foremost, the conservation of our heritage of cultural diversity.

While it will be difficult to suggest formulation of a national strategy to reinforce the biophilia, we may recommend giving recognition of the non-use values as economic values that are at least as important as the standard quantifiable use values of the elements of biodiversity. This may galvanize a non-commercial consideration of nature into the mainstream consumerist thinking as well as natural resource use policy.

**Fig. 1:** The concept and methods of valuation of nature.



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