

Traditional Concepts of Bio-conservation

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All the biotic and abiotic components of this globe are interlinked and complement each other's existence. The biotic component that includes living organisms right from microbes to huge trees or gigantic animals show significant levels of interdependence. This interdependence (also called as food chain or food web) is easily hampered on destruction of any of the floral or faunal group. On the backdrop of exploding population, this kind of interdependence amounts to a deciding factor in continuation or existence of any plant or animal race.

The management of the human use of the biosphere (the part of the earth's surface and atmosphere inhabited by living things) so that it may yield the greatest sustainable benefit to current generations while maintaining its potential to meet the needs and aspirations of future generations is bioconservation.

Conservation of biodiversity has of late become very popular but the fact that the concept of conservation has been handed to us by our ancestors cannot be ignored. From time immemorial our ancestors respected nature and this very fact has proved very crucial in minimal use of the resources and restoring back the bounties taken from mother earth. Slowly with changing civilizations, man's greed increased and he, with his quest for becoming powerful started taking more than what could be replaced. Now after years rolled by, he has realised that he has to implement conservation of biodiversity on a war footing.

This paper has made an attempt to bring forth that, though the terms biodiversity and bioconservation may be coined by naturalists, this very concept of limited use of nature and conserving as well as respecting nature has been an age old tradition followed throughout the world.

Going back to historic time period, the tradition of conservation was quite evident in every continent as represented in the culture, religion and social norms of traditional societies.

Forest patches preserved in the name or culture is reported from many countries extending from Asia, Africa, Europe and America but present occurrence is mostly restricted in Africa and Asia.

Expansion of agriculture and human settlement

destroyed vast tracts of forest land which resulted into gradual erosion of fertile soil, hence adverse consequences of these led people to realize the importance of forest ecosystem in soil and water conservation as well as livelihood security which ultimately manifested in the form of protection of remaining forest patches under various socio-economic norms. Sacred grooves are perhaps the first democratic approach by the rural people to protect the nature from overexploitation.

Atharva veda (12.1.11) hymn believed to have been composed sometime at around 800 B.C. somewhere amidst deep forests reads- "O Earth! Pleasant be thy hills, snowclad mountains and forests, O numerous coloured firm and protected earth!, on this earth I stand undefeated, unslain, unhurt".

Another hymn from Atharva veda (12.1.35) reads: "Whatever I dig out from you, O earth! May that have quick regeneration again, may we not damage thy vital habitat and heart".

Nature worship is a form of tribal belief and the faith of these laymen has helped to conserve many natural ecosystems in India. They have preserved many pristine forests called 'sacred groves' in their original forms. Indian sacred grooves have prevedic origin. Sacred grooves are rich in biodiversity. They are the last refuge of the rare flora and fauna which have otherwise disappeared from the modern world. Sacred grooves have become part of the 'biosphere reserves' of India. The basic elements of nature in the form of Prithvi (Earth), Agni (Fire), Jal (Water), Vayu (Air) and Akash (Space) were always worshipped or revered in one or the other form from the ancient times as per the Hindu mythology (Anthwal *et al.* 2006).

Specific local knowledge, skills and strategies, concern for well being of future generations, reliance on local resources, restraint in resource exploitation, an attitude of gratitude and respect for nature, management conservation and sustainable use of biodiversity outside formal protected areas and transfer of useful species across villages and larger landscape, all has painted a bigger picture of bioconservation. These are some of the useful attribute of local knowledge systems. (Pandey 2009). Over thousands of years local people have developed a variety of vegetation

management practices that continue to exist in tropical Asia. (Pandey 1998), South America (Atran et. al, Gomez Pompa and Kaus 1999), Africa (Getz et. Al. 1999, Infield 2001) and other parts of the world. (Brosius 1997, Berkes 1999).

Various religious traditions like temple forests, monasteries, sanctified and deified trees, tribal traditions like sacred forests, sacred grooves and sacred trees helped in conservation. The various royal traditions maintained by kings like royal gardens and elephant forests also helped in conservation. Various livelihood traditions like forests and grooves serving as cultural and social space as well as source of livelihood products also did help in conservation.

Tanks have been the most important source of irrigation in India. Some tanks may date as far back as the Rig vedic period around 1500 BC. Reference to the tanks is also found in the Arthashastra of Kautiliya written around 300 BC. (Rangarajan 1987).

The use of plants in mural painting as found in the Ajanta mural art speaks volumes of the traditions adopted by people in those days to create awareness about the importance of nature. The practice spanned a whole millennium from the second century BC to the eighth century A.D. The tradition continued up to the nineteenth century under the support of different dynasties in India.

For meditation Hindu, Buddhist and Jain monks and saints sought a natural and peaceful environment, the highest expression of which is the forest. Thus traditionally temples were often built in forests, hence the surrounding forest became sacred space to be preserved rather than exploited. Traditionally this would tend to promote the conservation of all the species diversity within the surrounding ecosystem. Buddhism encouraged individuals to limit their resource consumption to the optimal satisfaction of the four basic needs of food, clothing, shelter, and medicine. This vantage point renders ecology a very concrete and personal matter.

Religion played a major role in protecting species. The temple walls of the sacred complex of the Shiva temple at Panchami village in Birbhum district of West Bengal, were ruined by the growth of a banyan tree. The demolition of the temple by the growing tree over decades was withstood by the worshippers, a new temple was erected close by, and the sacred trees, occupying the previous temple site are still given full protection by the local community (Deb and Malhotra 2001).

Protection of natural habitats (forest patches, stretches of river, ponds and lakes) in indigenous cultures is typically achieved by declaring it as sacred, by associating it with ancestral spirits or a local deity. Fishing is prohibited in the Ganga from Gangotri to Hardwar, as this stretch of the river

is considered sacred. Similar stretches of other rivers like Mahanadi, Narmada and Godavari are also deemed sacred, hence no fishing is permitted. These stretches serve as important refugia for fish in these rivers. Also, religious restrictions on fishing and hunting at certain time of the year are traditionally observed by many communities.



Khecheopalri lake (Sikkim)

There are mythological links associated with the origin of all lakes in Sikkim which makes them sacred. One among them is the Khecheopalri lake (wish fulfilling lake). The lake is situated amidst pristine forest at an altitude of 1,700 mts. The depression where the lake is situated was formed by the scooping action of a glacier. The Lepchas are the inhabitants of the place. The sanctity of the lake is exemplified by a legend which says that the shape of the lake in the form of a foot that represents the foot of Lord Buddha. There is another legend that a Lepcha couple were peeling of the bark of the nettle when they saw a pair of conch shells falling from the air on the ground. This was followed by severe shaking of the ground and spring water emerged from below and thus the lake was formed. These myths have definitely gone a long way in preserving the ecosystem.

In India, since ancient times, several members of the flora and fauna have been identified with particular personalities of the Hindu pantheon and are worshipped. Many wild animals, such as tigers, lions and elephants, and birds such as the peacock, owl and swan have been revered as the vehicles of Gods and Goddesses and worshipped. Several trees, such as mango, coconut, khejri, emblica, tamarind, ashoka, madhuca and wood apple, and herbs such as basil are considered highly sacred and worshipped. This belief and these practices continue in one form or another even today in certain sections of Indian society, particularly the rural folk. Nature worship is a form of tribal belief and the faith of these laymen has helped to conserve many

natural ecosystems in India. They have preserved many pristine forests in the form of 'sacred groves'. Sacred groves are rich in biodiversity. They are the last refuge of the rare flora and fauna which have otherwise disappeared from the modern world. Thus sacred groves have become part of the 'biosphere reserves' of India.

The whole universe together with its creatures belongs to the Lord (Nature). No creature is superior to any other and the human being should not have absolute power over nature. Let no species encroach upon the rights and privileges of other species. However one can enjoy the bounties of nature by giving up greed." (Ishaupanished, Verse-1). Obviously, all narrations in every religion preached conservation.

The whole rescue process of the biodiversity during the time of dissolution (Pralaya) was according to divine wish as narrated in both the epics, Manusamhita and Bible. In Manusamhita, God advised King Satyabrata to carry plant and animal species with him in a ship to a safer place when Pralaya began. Lord Vishnu guided the ship in form of a giant whale which was tied to with the ship by a large serpent Vaasuki. These species were taken through the period of deluge (Pralaya) and recreated the living world later.

For Noah as Bible says, "he walked with God", a sense of direct communication. Noah and his family might have struggled hard to protect the animals and save the ship from the flood waters for a long time of one year. In both the instances, if the metaphysical factor 'God' is looked in obscurity, the intension of Satyabrata (Hindu mythology) and Noah was a clear expression of their attitude for the conservation of biodiversity at the time of dissolution. This shows that, it is eternally a human responsibility to take care of the nature, either in ancient days or modern times.

Sacred groves in Nigeria promised alternative sources of high quality germplasm for conservation. Taboos worked as dependable instruments for conserving biodiversity in sacred groves in the country. Traditional belief systems created fears on the people not to violate regulations on groves because of negative repercussions; taboos failed as instrument of conservation in community forests where the traditional belief system was not recognised by heterogeneous members of the community. Forests outside the protected system are managed by rural communities to meet their desires and needs. Taboos are social prohibitions regulating or restraining individuals, families and communities from using biotic resources. They are based on mutual agreements collectively made by members of land holding communities to aid conservation of biodiversity. Taboos regulate access to biodiversity in terms of species protection, harvest and utilization. They also involve protection of water surface: wetlands, rivers and lakes; and

terrestrial habitats in specific areas or locations. Taboos apply to all spheres of people: young, old, males and females (Osemeobo 1992).

Taboos are influenced by cultural beliefs, religion, social status and richness of biodiversity in terms of species availability, distribution, population, diversity and use intensity by members of the community. According to Khan et al (2008) taboos are used to establish most sacred groves. Each grove carries its specific myths, lore and legends which link owners with their spiritual guardians. The rules or regulations are often different and are often based on their historical past. Taboos in Nigeria exist in different forms (Osemeobo 1992; Osemeobo and Omeni, 2008): (i) Taboos are being observed due to nature of birth. Twins in Yoruba (Nigeria) are made to observe some taboos prohibiting them from eating monkey and some plants. (ii) Pregnant mothers are made to observe some taboos for safe delivery and for the protection of the unborn from evil spirits. (iii) Taboos are imposed on people that patronize traditional African medicine when they are cured of illness or when they acquire some magical powers. (iv) Taboos are attached to various traditional offices such as priests. People did not want to offend guardian spirits as they were invisible members of families. The invisible members were believed to be spiritually powerful which can despoil when taboos were flouted and bless individuals in a family when not offended. It has been said that respect or adherence to taboos is primarily based of fear of supernatural retribution (Casagrande 2008) if they fail to respect the taboos. Neglecting ancestral spirits could cause disasters to families (childlessness, pandemics, psychotic breaks and suicides). Strong traditional beliefs existed among groups of families living in harmony with culture, folk stories and myths surrounding ancestors and individuals. In Madagascar (Jones et. al. 2008) found taboos as a practice used to effectively protect endangered species (*Propithecus edwardsi* and *Cryptoprocta ferox*) thereby reducing pressure on endangered species often harvested for income generation. Outside protected areas, enforcement of conservation rules through taboos are breaking down due to of lack of capacity. Ineffective monitoring and law enforcement on the part of government has made access to biodiversity uncontrollable in protected forests. This is why species and habitat have played significant role in biotic conservation but with positive implications. In Konkan region, small lake (Pokharan) in front of a temple is a routine view. Many aquatic forms inhabit these lakes. Formation and removal of silt in these lakes is also a routing phenomenon. These lakes are said to be meant for immersion of floral offering to God and also cleaning oneself before entering the temple in order to maintain the sanctity of the temple.

Results And Discussions

There is clear evidence about awareness regarding conservation of biodiversity. Right from the ancient vedic times till date need for conservation has been sensed by rulers and concerned authorities. Successful attempts have been made to conserve various forms of life in natural conditions. To achieve this, emotional, spiritual or even devotional beliefs of the people were invoked. Satyabrata's ship, Noah's ark, Sacred groves, and many more have been proved to be successful means of creating awareness about conservation among laymen.

Yet, these ideas are proving to be obsolete now. In many places, the infrastructure for conservation no longer exists. Exponential growth of human population and consequent stress upon various resources has posed a serious threat to natural habitats. Mushrooming infrastructure facilities in the area has been an important reason for deteriorating the proper functioning of social institutions, which reflect that sacred groves are no longer getting the privilege they had in the past. Human interference needs to be regulated by defining various indigenous practices along with scientific implications rather than only old religious prescriptions and proscriptions. Proper legislative support and specific policies must be provided. Difference government and non-government bodies have to synergistically contribute towards creating consciousness about deteriorating status of nature and the need for its conservation.

Man has to realize, he has to live in harmony with nature and not allow greed to overpower him. From the above review one can understand that all the traditions, myths and taboos handed down to us from generations ultimately had the aim of conservation of biodiversity. Even our forefathers strongly vouched on conservation of biodiversity. The nature that we are exposed to and are experiencing its thankless offerings has to be conserved appropriately for the future generations. Legal restrictions are not the ultimate solution but emotional or devotional feelings have to be invoked for achieving this. The task is beyond capacity of any governing body. It is the wholehearted individual contribution that can bring about a change. This is just a humble attempt to put fourth past and present scenario of conservation.

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