

Biodiversity in the Sacred Groves

Case Study -Goa

Goa, a beautiful land nestled amidst the Western Ghats and the Arabian Sea; though remained for hundreds of years under the Portuguese rule has maintained its linkage with the Indian culture even after the religious persecution. Nature conservation is a part and parcel of the ancient Indian tradition which can also be seen among the Goans. The tribals of Goa Gawda, Velip, Kunbi, Dhandar-gouly and other forest dwelling communities have excellent knowledge of the floristic wealth of their surrounding who make use of these plants for satisfying their daily needs by maintaining their relationship with biodiversity rich areas. There existed among them a symbiotic relationship between the local community and biodiversity who with a wealth of knowledge on the utilization and conservation of food and medicinal plants have guarded it.

In Bardez, Tiswadi and Salcete, the new converts to the Christianity have kept their linkages with the cultural rooted in the environment. The Tavashache Feast celebrated in Santan Bhati of Tiswadi in the August is the cultural event wherein both the Christian and Hindu participate. They pray to Our Lady for the male child. If the son is born, the next year the couple make offering of Cucumbers to the Our Lady. In Raia village of Salcete the Christian community celebrate Konsache Feast where in the panicles of new paddy are offered to the goddess and then among all the villagers.

Among the Muslim community of Goa, there are memorials built in honour of the pious saints who are venerated by Muslims as well as the Hindus of the locality. There are trees which are considered as the holy and protected in the vicinity of the Durgah. In Sankhali, there is a Durgah dedicated to Babar Pir where in the Kosam tree (*Schleichera oleosa*) is protected in Bicholim Savar (*Bombax ceiba*), mango and other indigenous species of trees are protected. In Bicholim and Keri (Sattari) there are canyon regarded as the sacred and these water bodies are known locally as the 'Pirachi Kond'.

Sacred Groves have important socio-cultural dimensions beside religious functions. Various rituals, festivals are observed inside the sacred groves only on certain days in the year. In Verle there is Jaita Pann in which annually rice is cooked and is eaten by the tribals after making offering to the presiding deity. In some sacred groves on a particular day in a year, leaves of medicinal plants are plucked and distributed among the villagers who after grinding it with water drinks the mixture. There is a tradition of making offering of cock, goat or buffalo annually to the deity.

Earlier the women of forest dwelling Velip tribals were performing the eco-feministic festival of 'Dhilllo' inside the sacred groves by singing, reciting and dancing for about seven days, in between period of Dussera and Diwali. Many cultural beliefs relating to fertility find expression in vows and prayers made at sacred groves. Different moral support and guidance for individuals are derived from cultural values associated with the sacred groves.

Social, cultural and environmental ties with the adjacent forests are a sensitive and sentimental affinity among the forest dwellers that have preserved some patches of the forests on religious grounds. There they have protected not only trees, shrubs, herds, climbers but all forms of vegetation along with geological wealth. Removal of even the dead wood or stone is taboo. The faith of these indigenous communities in Nature's creation has helped in many ways natural ecosystems in India as the sacred groves. Some of these sacred groves are so important that they are perhaps the last refuges of the endangered and vulnerable biological wealth. As access to and interference with the sacred groves has been culturally restricted and thereby reduced the human impact in terms of harvesting of natural resources. The result of such restriction has been that sacred groves have evolved as significant reservoirs of biological diversity and permitted the complex and diverse array of ecological processes to continue uninterruptedly over long period of time.

Some of the sacred groves constitute pristine vegetation, and are particularly rich in flora and fauna. With the continuing destruction of forest all around them, the sacred groves have become fragmented habitats housing a variety of genetic pools and in general act as a nursery and storehouse of many of the Ayurvedic, tribal and folk medicines. Ecologically valuable species, which conserve high amount of nitrogen, phosphorous, magnesium and calcium in their leaves, are found in several sacred groves. Some of the sacred groves situated inside the Western Ghats areas of Goa houses key stone species that contribute to the maintenance and enhancement of biodiversity along with species that are socially valued by local communities for cultural or religious reasons. Many animal species including birds that are otherwise threatened on becoming rare find a safe refuge in sacred groves.

The Bhui Pann of Verle situate inside the Netravali Wildlife Sanctuary is one of the biggest sacred groves of Goa which is characterized with the trees having tall, towering canopy. In some areas, even the sunlight finds it's difficult to reach down. There are some unique species of the trees with the elongated roots which feed on the decomposing litter around, providing sap to the entire eco-system. A number of perennial streams originate mostly in the sacred groves.

The Devachi Rai of Surla – Sattari which lies inside the Mhadei Wildlife Sanctuary once harbour some rare species of medicinal plants. However, the construction of new tar road till the entrance of this grove has posed serious threat to the various elements of biodiversity. Absence of proper road earlier was providing certain degree of protection to the grove's biodiversity which used to harbour the species of Indian coral snake. It has still maintained the honour of store house of medicinal plants which are found no where else in the adjoining forests. The grove is also home to some edible mushrooms which are a delicacy in the village. Every year one can see the nesting sites of the Malabar Pied Hornbill on the tall trees of the grove.

Floristic composition of the Holiyechi Rai of Caranzol in Mhadei Wildlife Sanctuary represents a climax formation for that area and could be taken as the indicator of the type of the pre-existing forests. As it is kept unmolested due to the religious faith,

it has transformed into a sanctuary for lofty trees and lianas. In view of the protection and optimum growth conditions prevailing in this grove, some arboreal species show their grandeur and become a fascinating sight. Lofty trees are a pre-requisite for growth of some of rare plant species. Profuse undergrowth of herbs and shrubs is also found under magnificent trees. Once Bhillo-mad, also called as Fish tail palm (*Caryota urens*) inside this evergreen forest was most vital for the forest dwelling folks for sustaining their basic needs such as food, medicine, beverages, material for construction of huts, crude implements, etc.

Shidhdachi Rai of Vadawal of Latambarce in Bicholim is the only refuge for the wild animals in the area since the area is under the scourge of deforestation. It is the abode for the Pangolin, the crested serpent eagle, the Malabar Pied Hornbill and other faunal biodiversity. Nirankarchi Rai of Maloli in Sattari is well known all over Goa for the myristica swamp forest. One of the unique features of the trees of myristica malabarica in this habitat is the presence of numerous aerial roots in the shape of inverted 'U' arching over the mud. These roots are analogous to pneumatophores or stilt roots of mangrove forests. The natural vegetation inside this grove is of tropical hill forest dominated by evergreen broad leaved species. In addition, there are several species of algae, lichens, epiphytes and under growth plants are found here.

The Malabar gliding nymph butterfly is known for hovering. This endemic butterfly is found inside the sacred grove of Ajobachi tali near Brahma Karmali inside the Mhadei Wildlife Sanctuary. In the autumn, spring seasons the undergrowth plants are laden with hundred of butterflies of stripped tiger, blue tiger species. The swampy area has the typical crabs locally known as 'Belde'.

The Ajobachi Rai of Keri-Sattari has the magnificent forest cover which houses bewildering species of flora and fauna. It is known in the area as the sound habitat for the *Pantera tigris* (Stripped tiger). The Bheryachi Rai of Rive-Sattari has the evergreen patches of forest which support the butterfly species of Southern Birdwing, one of the largest butterflies of the Indian sub-continent. The Devachi Rai of Coparde – Sattari is known for tall and towering Shidam tree (*Tetrameles nudiflora*). The speciality of this tree is, it is the ideal habitat for insects, birds and other small animals. The honey bees prefer the branches of the tree to make their honey combs. At least five to seven honey combs are seen annually on this tree. Though, the tree hardly has any timber value, it is just like a bio-island for innumerable insects.

Near the waterfalls of Baman-budi on the border of the Cotigao Wildlife Sanctuary, there is a sacred grove known as the Paika Pann which is rich in faunal diversity. The legal protection given to this part has helped the wild animals to enjoy the peaceful life. Cazur of Quepem is known for the pre-historic rock carving site. In this village there is a sacred grove named after the village deity Paik which has the forested patch with the creepers, trees and bushes. Village has lost most of its rich forest cover. However, the vegetation present in the sacred grove clearly indicates the floral diversity of the area.

Presently, Goa is encircled by various environmental problems. Mining and tourism have replaced traditional agriculture and fishing and there by resulted in creating not only environmental pollution but also social and cultural pollution. Mining has destroyed water bodies, polluted and choked rivers, degraded hills and forests in many parts of Goa. Tourism no doubt helps in earning bread and butter for a large number of people in coastal belt but at the cost of creating problems for environment and ecology. Drug addiction, alcoholism, sex-traffic, garbage disposal, sewage treatment and other problems become the order of the day. Deforestation followed by human – wildlife conflicts, soil erosion coupled with flash floods like recent Canacona and Netravali problems are increasing at an alarming rate. When the whole world is under the scourge of global warming and climate change, Goa government has failed t to protect coastal zones and its mangrove forests and sand dune vegetation.

The Goans have nurtured a varied cultural heritage that was deeply rooted with the love for the ecology and environment. They have developed such traditions which once were related with the motto of environment conservation. Rivers, springs, trees, wells, patches of forests were considered as the sacred entity and respecting them whole heartedly was one of the unavoidable principles of their primitive religion. Sacred groves are the hope for Goa. In the present context the sacred groves are considered as segments of landscapes, containing vegetation, and other forms of life and geographical features that keep them in a relatively undisturbed state and are expressive of an important relationship of human with the divine or with nature. Biologically they are very rich and serve as a natural habitat for many primitive, rare and valuable plant species.

References:

- Krishna Nandinatha, 2005, *Ecological Traditions of Tamil Nadu*, C.P.R. Education Centre.
- Kerkar Rajendra, articles published in daily ‘The Navhind Times’ and ‘Times of India’ Goa Edition from 2005-09.
- Alvares Claude, 2002, *Fish Curry and Rice*
- Barik, Pandey, Tiwari and Singh, 2006, *Sacred Groves of Meghalaya*.
- Malhotra Kailash, 2001, *Cultural and Ecological Dimensions of Sacred Groves in India*.
- Ghate Vinaya, 2004, *Focus on Sacred Groves and Ethnobotany*.

Rajendra Kerkar