

# PRIORITIZING TRADITIONAL CONSERVATION PRACTICES FOR KARNATAKA

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## 1. Current Status

Karnataka has diversity of landscapes associated with biological and socio-cultural diversity.

The physical geographical features have been largely responsible for the ecology and the cultural affinities of people with the biodiversity. The State can be broadly divided into 2 regions in terms of physical geography: Western Ghats and Eastern semi-arid plains.

The secular and sacred cultural traditions linked with the biodiversity are more of a function of the physical geography of the region and the biodiversity supported by the geography and hence the climatic conditions. The Western Ghats is part of one of the megadiversity hot-spots in the world and harbour a range of cultural practices like sacred groves, sacred stretches of riverbeds, streambeds and tanks, sacred mangroves, sacred species of plants and animals. And historically it also supported totemism associated with the local people in the area.

The Western Ghats consists of part of Uttara Kannada district, Udupi and Dakshina Kannada districts. consists of the Uttara Kannada, Shimoga, Chikmagalur, Hassan and Kodagu districts. Locally the whole region comprising the West Coast and the Western Ghats is referred as *Malnad*. The sacred elements (SEs) in the Malnad region can be described as follows:

The most common SE in this region is sacred grove (SG). But the SGs vary in terms of size, ownership patterns and also with respect to the vegetation. These factors are influenced by the biogeography of the species harboured and the human influence on SGs. The groves broadly come under two classes. The smaller groves are entirely protected; no tree felling or other biomass extraction may be carried out. The smaller SGs are generally referred as *devarbana*, *nagabana* (serpent groves).

Smaller groves: These SGs are the ubiquitous features of the landscape in the Uttara Kannada, Udupi and Dakshina Kannada districts. The size usually ranges from a *gunthas* (40 *gunthas* = 1 Acre) to few acres in rare cases. In Uttara Kannada the deities in SGs are mainly Bhutappa, Jatakappa, Mariamma, Chowdamma, Hulidevaru and occasionally Naga. The majority SGs are owned by the State Forest Department and managed by the local people. Siddapur taluk of Uttara Kannada district has about 100 SGs. Whole district could be a single unit culturally similar in terms of Areca nut economy, major landuses like Reserved forests, Soppinabettas, Paddy fields, Bena lands, minor forests and SGs. Hence, the Siddapur case study data can be extrapolated for the entire Uttara Kannada comprising of 11 taluks totally covering 10,291 sq.

km. could suggest the existence of more than 1000 SGs in the district. Some of the rare ecosystems like *Myristica* swamps are often found as SG in the district. In many cases the present day smaller SGs amidst soppinabetta lands represent the smaller fragment of earlier larger devarkans.

The Nagabanas are abundant in Udupi and Dakshina Kannada districts. They are smaller in size ranging from few *gunthas* to few acres in rare occasions. The Nagabanas are mainly owned by families and occasionally are linked with the temple complexes in the districts. The number of Nagabanas will be very high in these two districts. Both these district form a single cultural unit based on the Coconut and Areca nut plantations, paddy fields, reserved forests, protected areas and family owned nagabanas.

Larger groves: These groves function as resource forest also, offering both sustenance and ecological security. The people of the village may gather fallen deadwood, non-wood produce such as pepper, mango, jackfruit, etc., and tap toddy from a palm (*Caryota urens*). They tend wild pepper within the *kans* (Brandis and Grant, 1868). The SGs are referred by names such as devarkadu, devarkan, etc. These SGs are mainly reported from Uttara Kannada, Shimoga and Kodagu districts.

Devarkans used to be an important landscape in Uttara Kannada, Shimoga and Chikmagalur districts about 150 years back. The forest management by the British regime in these districts altered the landuse pattern substantially by either discontinuing the traditional practices or neglecting them for the revenue and timber. The substantial alterations in the traditional landuse pattern in the Western Ghats have made the devarkans as historical sacred forests. Uttara Kannada was part of the erstwhile Bombay Presidency where British regime abolished the rights of local people over the devarkans. In the sacred *kans* timber felling became a taboo assuring their preservation as a traditional practice. But collection of various non - wood produce and in some cases fallen leaves for manure were carried out, if the community had no other source, without endangering the ecology of the *kan*. Obviously referring to such sacred *kans* (Chandran and Gadgil 1993a).

Wingate (1888), the forest settlement Officer of Uttara Kannada, noted that the *kans* were of "great economic and climatic importance. They favour the existence of springs, and perennial streams and generally indicate the proximity of valuable spice gardens, which derive from them both shade and moisture" (Chandran and Gadgil 1993a).

Buchanan (1870) observed that wild pepper requires human attention for better yield. He found people taking care of pepper vines in evergreen forest patches called "*Maynasu Canu*" meaning *menasu kan or pepper kan*. Such *kans* were intermixed with gardens and rice fields. High demand for pepper in other lands could have been good incentive for village societies to maintain 'kans'. Pepper cultivation in *kans* may be even older to the spice gardens started by the Havik Brahmins.

But the old records of Village Forest Registers mention the survey numbers of 'Kan' lands in each revenue

village. These records suggest that Sirsi taluk had 106 devarkans whereas Siddapur taluk had 116 devarkans. It is quite likely that there could be about 1000 devarkans in Uttara Kannada district. Now it is quite necessary that to identify the overlap between smaller SGs and the devarkans. All the Kan survey numbers are mainly under Reserved Forest status (Gokhale, Y, unpublished).

Shimoga and Chikmagalur districts were part of erstwhile Mysore State. Kan lands were recognised by the State Forest Department till almost 1970. But after that those survey numbers were merged in Reserved Forests and other kinds of forests including Minor Forests, State forests and District forests. But even today Sagar division in Shimoga circle has 314 kan survey numbers on official record, which need to be crosschecked in the field for the status of forest (DCF office, Sagar).

Devarakadus are important feature specific to Kodagu district in the Western Ghats. Kodagu district could be called as hotspot of sacred grove tradition not only in the state but also in the country and world since this district has the largest number of sacred groves in proportion to the area of the district in the world and all the eighteen native communities including Muslims are stakeholders in this unique tradition. There are 1214 listed sacred groves in Kodagu covering an area of 2520 hectares. These devarkadus are owned by the forest department and managed by the community with the help of Devarkadu committees. Apart from that SGs are also associated with the Matta (monasteries) and the in private ownership with the families. Every village has at least one and there are 39 villages having more than 7 groves. These groves have been protected in the names of 65 deities of which Iyappa, Bhagavathi, Bhadrakali and Mahadeva are common. Though the district has a large number of sacred groves nearly 45% of the groves are less than one acre in extent and 80% of the groves are less than five acres. Hence the sacred groves in Kodagu are small islands surrounded by other landscapes like coffee estates, paddy fields, reserve forests and habitations.

Sacred species: Many species of the genus *Ficus* are protected by people through out Malnad as sacred. The species like *F. religiosa*, *F. benghalensis*, *F. tsiela*, *F. retusa*, *F. glomerata* are often found protected amidst the habitations by constructing the platforms around the trees. Often these trees have sacred importance because of the local deities associated with these species. But such platforms without any shrine underneath the *Ficus* trees are also a common feature of human habitations in the area.

Several sacred groves are protected for a particular species of animals like Nagabanas are supposedly protected for the cobras. It is believed in Dakshina Kannada and Udupi districts that citing of **king cobra**, **python** or cobra in the paddy fields before harvesting time will result in good harvest for the year. And hence the species are protected by the local people (Bhat, 2000).

There are occasional reports of **Indian Fruit Bat** roosts getting protected like the Bawali vana sacred grove at village Koli, Belthangadi taluk, Lakshmi temple premise at Puttur, Dakshina Kannada district (Gokhale Y., unpublished).

**Primates** like Bonnet macaques, Hanuman Langoons are found in wooded areas of towns and cities. But their presence go unnoticed as well as undocumented. In the village Naravi, Belthangadi taluk, Dakshina Kannada district Malekudiya tribals annually perform a ritual to propitiate the monkeys in their surroundings. Every year the Malekudias in Naravi village visit a place on the periphery of the forest called 'Pingar Koni'. They carry jaggry, beaten rice and coconut and spread the eatables on the flat rock over there and pray for the bonnet monkeys to come and have those eatables. The tribals believe that by doing this ritual monkeys will not invade their orchards and will not trouble them for rest of the year (Bhat, H. unpublished).

Most of the temple premises having ponds in Dakshina Kannada and Udupi districts are having **tortoises** and **Mahaseer** fishes protected in them.

A temple near Belthangadi town is known to protect a **crocodile** in the pond in the premise. It has been named as 'Babiya' and is fed everyday after the worship. Once in a month a chicken is offered to the crocodile by the temple authorities (Bhat, H. unpublished.).

Waterbodies: The sacred patches of rivers prohibited from fishing are found in Malnad at places like Shishila, Subramanya in Dakshina Kannada district, Sringeri in Chikmagalur district, Kaveri at Ramanathapura in Hassan District. The species of fish called Mahaseer is abundant in most of these stretches.

Most of the villages in this region have village tanks. At several places chain of tanks connected to each other is found in Sorab taluk in Shimoga district for storing the overflow from the tank on upper slope. Devarkans associated with tanks are common in Shimoga and Uttara Kannada districts. On coast the fishing is traditionally prohibited in the monsoon which is the breeding season for fishes.

**Eastern semi-arid plains / Bailseeme:** The sparsely vegetated areas of semi-arid plains on eastern side also support the sacred species of plants and animals. The sacred groves are not a common landscape feature as compared to the Western Ghats.

In this region of the State the traditional conservation practices are mainly confined to smaller patches of forests like Gundu Thoppus of Old Mysore regions and isolated sacred trees. Gundu Thoppus were very common as components of the village landscapes in Southern Karnataka. These were community lands where the villagers planted the local keystone species like *Ficus* sp., Mango, *Madhuca*, Neem and other native trees. The villagers were permitted to collect the usufructs and to conduct the annual village festivals. These community forests were mainly established in and around the village tanks for watershed development. These groves also provided shelter for native faunal biodiversity. This unique tradition of

management of local bioresource is under threat and many Gundu Thoppus have been encroached for habitation and cultivation (Yathiraju, pers. comm.).

Sacred species: Protection to heronaries like the one at Kokre-Bellur is very significant in this region. Many places are getting identified like Kaggaladu in Tumkur district (Ameen Ahmed, pers.comm.) The traditional conservation practices with respect to individual plants the traditional concepts like **Sthala Vriksha** the concept of each place having its own unique keystone species protected and **Kula Vriksha**, the concept of each race protecting a tree species is the earliest attempt to conserve the biodiversity involving communities. These concepts have evolved and now there are large number of sacred trees and animals, which have been protected in the village landscapes. The traditional concepts like Panchavtis, Rasi vanas and Nakshthra vanas are examples of such traditional conservation concepts. In Northern Karnataka , *Acacia ferrugenia* (Banni) is a keystone species and is protected as Kula vriksha (Reddy, Y. pers. comm.).

In addition to these practices there are other mechanisms like taboos and fear associated with certain elements of biodiversity, which have helped in their conservation. Even with respect to utilization of the resources there are traditions of restrained resource utilization called Sangraha Vidhana about which the documentation is not available.

Waterbodies: The traditional conservation practices with respect to water bodies include a large number of sacred tanks in all parts of the state, as part of a larger temple complex. In terms of **taxonomic categories** since the sacred groves in the Western Ghats and the West Coast harbour diverse species representing the threatened ecosystems like evergreen forests habitats, *Myristica* swamps, mangroves in form of islands and provide protection to many species of plants, birds, small mammals, reptiles, amphibians and insects sometimes confined to these small islands. Thus, these islands of ecosystems many times serve as refugia for a range of organisms specific to those particular ecosystems like isolated population of *Vateria indica* an endemic dipterocarp species of the Western Ghats in Kari Kan sacred forest in Kumta taluk (Chandran and Gadgil 1993a).

## **2. Ongoing changes**

### **Extent of change in terms of :**

#### **2.1.Spatial distribution:**

In Kodagu, the first inventory of SGs was done in 1873 when 873 groves covering an area of 4398 hectares was listed. The area increased to 6277 hectares during the year 1905 and during the last inventory undertaken during 1985 there were 1214 groves covering an area of 2550 hectares. Hence in the last eighty

years 42% of the area under sacred groves was lost and the groves got fragmented resulting in an increase in their number (Kushalappa and Bhagwat 2001).

Kans are reported only in Uttara Kannada and Shimoga districts. 10% of the total landscape was historically under traditional conservation practices like sacred kans, groves, in Uttara Kannada district of the Western Ghats (Chandran and Gadgil 1993a). The sacred groves in Siddapur taluk in Uttara Kannada district the extent of the sacred groves shrunk from 5.85% to 0.31% (Chandran and Gadgil 1998). The sacred groves in Uttara Kannada, Dakshina Kannada and Udupi districts are undergoing the process of sanskritisation where local flora is replaced by few indicator species like *Plumeria acutifolia*, *Ficus spp.*, *Thivetia peruviana* and the platforms or small temples are replacing the vegetation of the groves.

The nagabanas in Dakshina Kannada and Udupi district might not have reduced in number but the smaller sizes are still getting shrunk or sometimes encroached for platforms for the deity.

Gundu Thoppus, which were part of the village landscapes, have been lost and at present are seen only in few villages in Mysore, Mandya, Tumkur and Hassan.

In coastal areas the traditional seasonal ban on fishing during monsoon is diluted because of change in fishing method. The new trawler system can overcome the rough sea and weather conditions than the smaller boats in the past. So fishing can be continued even during the monsoon.

In most of the agrarian and forest dwelling villages annual hunting or ritual hunting practices are continued to some extent. Wild boars are reported to be hunted in ritual hunting around Deepawali. There are also reports of hunting of jackals from eastern plains as a ritual hunt. The questions in this case are :

- What are the beliefs associated with such ritual hunting practices and why the communities are still following these beliefs?
- Does the ritual hunting affect the population of those species? If no then should it be justified as community tradition? If yes then what action could be suggested?

The village tanks system in Malnad is totally neglected by the government and even by the stakeholders to some extent. The ownership is with the government so the users of the waterbodies do not have any right or stake in management of these waterbodies. The channels connecting between the tanks are also filled with silt.

## **2.2.Ecosystems**

With respect to Devakadus of Kodagu in addition to the physical loss in the area a large number of groves have undergone changes in their forest structure and composition and have been degraded. This is mainly due to biotic pressures since there is a great demand for land and forest resources in the present situations.

With respect to Kans *Myristica* swamps have been converted to other land uses. Chandran et al (1999) reports 51 *Myristica* swamps from Uttara Kannada district. Out of 51 swamps 9 are having the history of protection being the sacred groves. The 9 sacred swamps cover an area of 25,800 sq. km.

The sacred groves are supposed to harbour near natural vegetation in the local area because of minimal anthropogenic impacts. Hence, in the Western Ghats the SGs are mainly evergreen in species composition as it is the natural vegetation type in the area.

Gundu Thoppu ecosystems are managed for maintaining orchards of mango and other horticultural species. Gundu Thoppu ecosystems have also been altered physically and structurally.

### **3. Institutional framework governing change**

#### **Implications of tenure / access regime:**

In case of sacred element practices the tenurial system varies from place to place as these practices never got recorded in the government records. Hence, the land having such element was never classified separately. Hence, such elements occur on the individually owned lands, revenue department lands, private trusts lands, forest department lands.

In case of the forest department's lands these elements do not fall into the same kind of classification and are again found in various forests such as Reserved forest, Minor forests, Protected forests, Privileged forests, etc. There were a few efforts where government took notice of sacredness being attached to these lands as like in Kodagu district. So the inventory of these elements regarding the tenurial and access rights becomes a difficult task without the participation of local communities. On revenue department land also there is no special recognition for the waterbodies or the forest patches having sacred values.

Kodagu was among the few exceptional cases where sacred groves were noticed by the forest department and kept records of those groves – Devarakadus. But the revenue department did not handover the SGs to the forest department until 1985. As an effect of that these survey numbers were never treated as the lands with sacred values by the government for the development programmes and hence again got classified under revenue land categories.

Since the sacred elements can not be traced efficiently from the government records the local studies are required to understand the tenurial system in the respective taluks in each district. Chandrakanth and Nagaraj (1997) tried to work out for Kodagu district where the sacred groves can be traced to large extent

with the help of the records of the forest department. The sacred groves in Kodagu are classified by Chandrakanth and Nagaraj (1997) as:

Basadi kadu: These are the Jaina Basadi Kadu (*Jina kadu*).

Privately managed devara kadu: Some families have donated part of their forest lands for developing *devara kadus*, which are managed privately by the respective families. For instance, Mutthappa devara kadu in Nemmale, Machangala devara kadu in Kottangeri, in Virajpet taluk and Bhadrakali devara kadu in Balamuri and Palengattu keru in Madikeri taluk.

Paisari devara kadu: Most *devara kadus* in Coorg belong to this category. These are owned by the government, and are jointly managed by the village community and the government. Norms, rules and taboos developed by village communities over several years have provided social fencing to these *devara kadus*. In some *paisari devara kadu* like the Bhadrakali devara kadu in Hudukeri, exotic silver oak trees have been planted after almost clear - felling a 50 acre patch. Similarly, in Iayyappa devara kadu at Konageri, Eucalyptus saplings are planted. Both these *devara kadus* have been fenced to prevent cattle grazing.

Pavitra katte: In some villages, an altar is built around trees belonging to the *Ficus* family, which provide latex. These provide a common place for community functions, rituals and for circumambulation. In some of the *kattes*, the *peepal* (god) and the neem or *jambu phala* (goddess) are married by growing them together. For instance, we find the *Peeliyat mandu* for Bhagawathi in Heggala village and *Kaimudike mandu* for Igguthappa devaru in Kunda village, Virajpet taluk.

Hole devara kadu: These are sacred groves which belong to scheduled castes. In particular, this tradition is practiced by the Kembatti community who is said to be the aboriginal people of Coorg. Similarly, Marangi and Kukka communities also have *devara kadus*. Pannangala Thamme is the main goddess of the Kembatti community and Pannangala thamme devara kadu in Yuvakapadi, Madikeri taluk is dedicated to this goddess.

Kai mada or Karona kadu: In Coorg, the *Kai madas* represent structures built in the memory of family ancestors to whom prayers are offered. Ancestors are also called *Guru karona* and are regarded as almighty. Machangala family karona kadu in Kottangeri, Airee Bellappanna karona kadu in Kaikeri, Badagarakeri and Mugutageri, Karona devara kadu in Teralu village in Virajpet taluk and Chillanda Iayyappa family Karona kadu in Naladi, Madikeri taluk are a few examples.

Suggi devara bana: These sacred gardens are maintained for worshipping the *gram devatha* or harvest



goddess during the harvest festival. They are generally associated with Heddevaru (symbolising serpent), Beereddevaru and Bhadrakali. The Suggidevara bana in Hanagal-shettalli, Thaltare-Shettalli, Kumaralli, Kundahalli, Chikkatoluru, Koothi, Yedur, Chodlu, Nagarahalli, Gharvale and Thakeri in Virajpet taluk are a few examples. The harvest festival is during April-May, after the Hindu new year.

Mutt kadu: The Veerashaiva religious sect in Coorg district has their sacred forest called *mutt kadu* for the purpose of worship. These *mutts* have *samadhi* (mausoleum) of saints, worshipped by the devotees. We find *mutt kadus* in Bachalli, Suntikoppa, Kodlipet, Shanivarasanthe and Somvarpet in Somvarpet taluk. Goddess Chowdamma is generally worshipped in the *mutt kadus*.

Palli kadu: The term *palli* means mosque. The Jamma Mapillais of Coorg have a *palli kadu* attached to their mosques. Most rules of *devara kadu* also apply to these. The *mapillai palli* in Kadamallur, *mapillai palli* in Emme madu and *palli kadu* in Mytadi village near Arameri, Virajpet taluk and *palli kadu* in Kakkabbe, Madikeri taluk are a few examples. During Huttari (harvest festival), the deity is adorned with paddy panicles as in the *devara kadu* tradition.

Miscellaneous devara kadus: There are *devara kadus* for spirits like Puli Chavundi, Panjurli, Kuttichatha, Masthi (*Sati*-for women who self-immolate on the death of their husband); for *Naga bana* to worship serpents; for folk games like *Ummathat*-dance performed to appease goddess Cauvery (in Ammathi); *Kuriyat*-game of sheep; *Koliyat*-game of cock (*Para kunyi*); and *Peeliyat*-for peacock dance.

Thus, the case study of Kodagu tries to show the nuances and complexity in the tenurial systems and rights in the sacred element practices in the State.

In Dakshina Kannada and Udupi districts these elements are privately owned areas whereas in Uttara Kannada district most of the sacred groves are owned by the forest department.

In case of several secular traditions there are neither historical records nor studies done to understand the current or historical status about tenurial rights.

### **Regulatory/ legal regimes:**

There was confusion in the regulatory and legal status of the sacred groves in Kodagu. Though these areas are protected forests under the forest department as per the government notifications issued in the year 1888 but it was presumed that they were transferred to the revenue department in the year 1905 and remained as revenue lands till 1985 when the state government came out with an new order to transfer these lands back to the forest department. This resulted in dual ownership of these sacred groves and is the main factor that has contributed to their loss in area.

In other parts of the state the tenurial regimes are not as defined as in Kodagu. In Dakshina Kannada and Udupi districts ownership is mainly with private regimes like individual households, temple trusts, etc. Hence, in any of the government records but for the cadastral maps to some extent in this area no information is recorded. So the legal regime can not be defined for this area.

In Uttara Kannada the State forest department owns most of the sacred elements. But all these elements are part of various categories of forests like Reserved forests, Minor forests and Soppinabetta. Hence, the forest laws are applicable to these elements.

The 73<sup>rd</sup> and 74<sup>th</sup> amendments in the constitution related to Panchayati Raj act have given more rights to the local communities to assert right on their cultural traditions where sacred elements could be one of the traditions. But it has not been used in the State.

### **3.3 Infrastructure:**

In Kodagu sacred groves were presumed to be revenue lands before 1985 and hence in some instances were distributed to the landless for habitations and all the facilities needed for habitations like houses, the government provided roads, water, power and amenities. Similarly more than 4000 ha of kan lands were thrown open for industrial timber felling in Uttara Kannada district.

### **3.4. Market**

Market forces are certainly having negative impact on the cultural traditions. It has changed the views of people about harvesting NTFPs like *Garcinia gummi-gutta* fruits in Uttara Kannada. About 8-9 years back the fruits of *Garcinia gumm-gutta* did not have commercial value and people used to pluck the riped fruits only. But in recent years these fruits started getting good rate in local markets, which prompted local people to harvest the unriped fruits or even sometimes to cut the trees for fruits.

Area nut prices have raised considerably in past decade. Hence, people have started gorwing areca gardens by converting the paddy fields in Uttara Kannada district. Also in this district British government gave people privilege of lopping trees on the forest department lands for areaca gardens in 1:9PRIORITIZING TRADITIONAL CONSERVATION PRACTICES FOR KARNATAKA proportion (1 acre of areca garden gets 9 acres of privilege land) called as Soppina betta lands. But after 1930s no new Soppina bettas are sanctioned. So all the plantations after 1930s have to illegally depend on the minor forests or reserved forests for the mulching material. Smaller sacred groves surrounded by soppina betta lands in Uttara Kannada are getting shrunk for the mounting demand of mulching material for areca gardens.

Since the market for coffee increased during the last 20 years there was a heavy pressure on vacant lands for coffee cultivation and the groves were encroached. The increased demand for timber and their non-availability from the reserved forests has resulted in illegal felling in these groves. The forest department for their valuable timber worked certain groves in the dry deciduous areas.

### **3.5 Values.**

The larger forces of Sanskritisation or Acculturation are acting on all the sacred elements in the State. As a result lot of changes are occurring many times at the cost of the biodiversity of the element. The most primitive form of nature worship could be the worship place without any idol; in such places idol are appearing. Where the deities were kept open inside the groves or on banks of the tanks, temples are getting constructed for the deities at times by clearfelling the vegetation. The faith of people is changing from nature worship to idol worship. The purposes for which range of such elements have been continued by the local people are becoming irrelevant with the change in the livelihood practices. For example, the sacred grove of Bete Devaru (Hunting god) in Kumta town has been converted to a small temple. Traditionally people had to pray the deity for a success in hunting. But with the change in the livelihood practices accompanied by the loss of forests around the relevance of the deity to the local people is marginalised.

### **3.6 Knowledge:**

The traditional beliefs or practices of nature conservation could have two important characteristics which could be of use to modern day conservation programmes such as:

- biological information of species
- thumb rule of sustainability or long term utility

According to the discussion regarding Current Status it is quite evident that range of organisms are associated with these cultural conservation practices, which are poorly documented. Lack of knowledge of these practices even at local could result in the loss of the information about species or at times loss of the species in itself. This also hinders the furtherance of local knowledge of biodiversity.

Joshi and Gadgil (1993) argue that the traditional conservation systems probably work on thumb rules of sustainable utilisation. The controlled utilisation with the help of belief system probably have a notion or thumb rule followed by the local people. Hence, lack of knowledge of these practices also does not give understanding of the functioning of the local resources with respect to the requirements.

## **5. Gainers and losers in ongoing changes.**

Gainers and losers at various scales – local and global. The processes of change, agents of change also should be looked in local-global fashion e.g. construction of Murudeshwar temple complex against the CRZ rules to attract the tourists in the name of the god and at the cost of marine diversity and added pollution on the sea beach. The gainers of the ongoing changes are individuals who have encroached into

the grove or who have illegally removed the trees, firewood or fodder. The losers are the village communities, temple committees and forest department.

## **6.Aspects of**

### **6.1 Institutional framework**

### **6.2 Activities and**

#### **Agents promoting ongoing negative changes.**

The issue of dual ownership of the sacred groves in Kodagu has resulted in the revenue department permitting landless people from outside the district to build houses in the sacred groves. Since the forest department did not take any action on these settlers they have constructed proper houses and all the amenities have also been provided and today these areas have become villages. The adjoining coffee planters claim that they have encroached portions of the grove to prevent the government from converting the groves into settlements of outsiders, which would cause social problems to the native people. These encroachments by outsiders and locals resulted in the local people losing their faith in this tradition, which resulted in other negative changes like illegal tree cutting, firewood removal, grazing and soil collections. The changes in the worship concept where the temple has become important than the grove and the shift from annual worship to daily worship has resulted in lot of human interference in the groves.

Gundu Thoppus have been allotted to community projects like Ashraya housing schemes; Primary health centers, schools and later powerful local villagers have also occupied these areas.

## **7.Aspects of**

### **7.1 Institutional framework**

### **7.2 Activities and**

#### **Agents promoting potentially negative changes.**

Intentional negligence of historical resource management systems of local people by the state beaurocracy leading to erosion or even extinction of the local conservation practices and their benefits to nature and people. e.g. *Kans* in the Malnad was a joint management for existing forests. While implementing the Joint Forest Management scheme the historical linkages of people and forest in terms of management were neglected resulting into continued degradation of existing evergreen forests unique to the Western Ghats.

The inaction of the government departments, local temple committees and villagers in Kodagu may result in more of these community areas being encroached and lead to other changes like tree felling, firewood collection and grazing.

## **8.Aspects of**

### **8.1 Institutional framework**

### **8.2 Activities and**

### **8.3 Agents promoting ongoing positive changes.**

The awareness and action plan proposed for the conservation and management of sacred groves in Kodagu by the working group on sacred groves consisting of representatives of the College of Forestry, Forest department, CEE, community leaders, and media has generated lot of awareness about the legal and management issues related to the sacred groves. The results of the research work undertaken by the College of Forestry have highlighted the ecological and economical values of the sacred groves. CEE has undertaken educational and awareness activities among students to highlight the importance of sacred groves in conservation of biocultural diversity. The forest department in association with temple committees has started to resurvey and protect the sacred groves in Kodagu.

## **9.Aspects of**

### **9.1 Institutional framework**

#### 9.2 Activities and

Agents which may potentially lead to a positive change

The working group on sacred groves in Kodagu has prepared a draft plan for the Joint Forest Planning and Management of the sacred groves and this draft after discussion by the temple committees and community leaders was approved and has been submitted to the forest department for approval and this action will lead to revival and sustenance of the sacred grove tradition.

### **10.Currently operative strategy for conservation, sustainable use and equitable sharing of benefits of biodiversity.**

The present strategy in Kodagu involves legal protection of the sacred groves as protected forests as per the Indian Forest Act of 1927 and the management of the temple and groves by a traditionally constituted head or Thakka and temple committee constituted by the villagers. With respect to sacred trees and animals there are some efforts initiated by local groups for their protection.

The sacred groves in other part of the state on the land owned by the state forest department come under the purview of the Indian Forest Act of 1927 all over the state.

There are no specific strategies available for the conservation of other sacred elements as well as for secular cultural traditions.

### **11.Lacunae in currently operative strategies.**

In Kodagu the forest department, the legal owners did not ascertain their ownership on these sacred groves and the officials of the revenue department gave permission to build houses in these protected forest. The temple committees the stakeholders did not have any legal authority to evict these encroachers and hence

these groves reduced in size. There is no co-ordination in efforts being undertaken by the government departments, communities and institutions to develop and implement conservation strategies.

The traditionally protected streambeds having mahaseer fishes in the Western Ghats are frequently poisoned many times by outsiders of the village. On 26<sup>th</sup> May 1996, at Shishila fishes were poisoned and 6 truckloads of fishes died. But local people could not do anything to find the culprits and punish them (Jayaram 1997). Similarly it happened at near Subramanya. There is no mechanism to safeguard cultural interests of the local people leading towards conservation of biodiversity. Since these systems are not recognized by any of the government office even at local level the local stakeholders are having limited powers to take action against the defaulters of the traditional system. With respect to sacred trees and animals there are no strategies evolved for their protection.

### **13. Lacunae in currently operative action plans.**

Very few groves have been resurveyed and only the remaining areas have been demarcated without taking into consideration the original area. There have been no attempts to involve any local groups like temple committees, community leaders in this effort. Hence the information generated has remained only as a report without any action.

### **14. Proposed strategy for conservation**

The proposed action plan for Kodagu involves a Joint Forest Planning and Management proposal for conservation of sacred groves. This action plan involves formulation of village and district level committees involving the local communities, existing temple committees and local government organizations to propose a management plan and implement the plan. This action plan proposes to empower the committees with respect to management of the groves. With respect to drier parts of the state there is an urgent need to document traditional conservation practices with respect to their present status and develop a Joint Forest Management Practice.

The effort of Forest department in establishing the pavithra vanas is a recent effort to revitalize the tradition. Give more details of pavitra vana implementation.

### **15. Proposed action plan for Kodagu for sacred groves has the following practical activities**

- ØResurvey of the sacred groves, sacred water bodies ,sacred trees and sacred animals in a village and know their present position.
- ØDocumentation of the biodiversity in the village landscapes
- ØPreparation of management plan for the sacred groves.
- ØConstitution of joint forest management committees at the village and district level.
- ØEmpowerment of these committees through legal powers for management.

## **Discussion on strategy and action plan for cultural elements of biodiversity in Karnataka State**

The cultural landscapes in the State of Karnataka can be broadly classified as:

1. **Sacred landscapes and waterscapes** – e.g. sacred groves, sacred waterbodies
2. **Non sacred landscapes and waterscapes** – e.g. Gundu Thoppu, village tanks
3. **Sacred cultural practices** – e.g. Vratas, annual hunting for local deity,
4. **Sacred species** – e.g. primates, *Ficus* sp.
5. **Non sacred cultural practices** – e.g. annual hunting after harvest

Even though 5 broad categories can be classified, a limited number of practices could be considered for the exercise of preparing strategy and action plan because –

- There is a dearth of documentation regarding several practices which are specific to local areas e. g. in Dakshina Kannada pythons and King Cobras are never supposed to be killed if seen in the fields before harvests.
- There are no ways by which crosschecking can be done to know whether a particular tradition is practiced or it is only a belief e. g. the above mentioned example can not be checked for its validity.

Considering the limitations mainly with respect to the information available on these cultural practices, only those practices are considered having wider distribution and to some extent information from many parts of the State and hence, would probably have an important role to play in conservation of biodiversity. Those practices are as –

1. **Sacred groves**
2. ***Ficus* sp.**
3. **Sacred and non sacred waterbodies**
4. **Primates**
5. **Heronaries**
6. **Gundu Thoppu**
7. **Annual and ritual hunting**

### **Strategies for conservation**

**1. Sacred groves** – The tradition is reported from almost all parts of the State but it varies from region to region mainly with respect to species protected, size, ownership pattern and local taboos. In spite of having non-similarity in various aspects related to biodiversity conservation, the sacred groves share common problems all over the State.

*Removal of biomass* - Mainly due to dwindling of local natural resources like firewood people have started exploiting the resources from the sacred groves as well. Hence, it is needed to work on the alternatives to stop the removal of biomass from the SGs. It mainly involves the alternatives for firewood.

*Sanskritisation* – In many places, local folk deities have been, and continue to be, replaced with Hindu gods and goddesses. This has resulted in the erection of temples in side the sacred groves by destroying the vegetation of the SGs.

This process needs to be halted by conducting awareness programmes regarding the importance of vegetation of the SGs among the local people and mainly among the stakeholders of the SGs like SG committee members, priests, owners of SGs.

The SGs owned by the Government department can prevent the destruction of the vegetation using the forest conservation laws.

*Ownership* – Very diverse patterns of ownership from region to region. There is a need to have a statewide study to understand regarding various ownership patterns for concrete and region specific strategies for the conservation.

Economic incentives to the sacred groves could not be the viable option for sacred groves in all situations considering the large number of groves all over the State. There could be a threat to rest of the groves,

which would not receive the economic incentive. But the strategy of economic compensation could be considered in case of very unique habitats like *Myristica* swamps, which are basically getting converted to areca nut plantations. The economic incentives need not be given for sacred importance but for the ecological values. But there could be social recognition by publicising such places in media lauding their role in conservation efforts.

**2. *Ficus* species** – Protection to species of *Ficus* like *F. benghalensis*, *F. glomerata*, *F. religiosa*, *F. retusa* is a common practice through out the State for being sacred as well as a part of local culture.

These protected trees have are even though not threatened, at some places in Tumkur district they are reported to be used as firewood for brick kilns.

There should be proper record of all available individual of *Ficus* sp. In all the villages and towns with the respective Grampanchayats or Municipal corporations with a copy with the concerned Territorial Range Forest Office. Since these are trees on revenue lands mainly, they have legal protection under the laws applicable to tree protection.

**3. Sacred and non-sacred waterbodies** – Karnataka State has more than 40,000 tanks and reservoirs reported in the Government records. These waterbodies come under the jurisdiction of Minor Irrigation Department. There is no system for desilting these tanks and reservoirs. There used to be systems locally practiced in various parts of the State, which are no more practiced due to the reasons like unidentified stakes in the efforts of desilting and the further benefit sharing of the silt for the agricultural purposes and the financial support for desilting in case of bigger waterbodies.

It is required to initiate the processes like mobilizing local people to take care of the waterbodies in terms of maintaining those by forming Joint Waterbody Maintenance Committees similar to Joint Forest Committees. Care should be taken to make these committees financially sustainable once they are formed by providing seed money by the State government wherever the waterbodies are owned by the government. Pisciculture can be mooted through these committees in the villages having tanks all over the State.

In many areas like Malnad and also on Plains the waterbodies are connected to store the overflow from the upper storage. These connections between the waterbodies are either filled with the silt or are broken at many places. These connections should be traced and restored.

**4. Primates** – The troops of Hanuman langoor and macaques are protected around many temple complexes. Usually these primates are not hunted because of their linkage with the Hindu god Hanuman. But in towns and in cities these troops have become nuisance as the animals do not get the food to feed on. Hence, in the areas where the nuisance is reported from such wandering troops of primates, arrangements for food could be made by the Charitable organisations, Temple trusts and the Forest department. There is also need to control the group size of these troops as availability of food might result in growth of population increasing the nuisance.

**5. Heronaries** – The practice of protecting roosts of birds like herons, storks, bills, ibises is known from dryer Plains of the State. At many paces these roosts popularly known as Heronaries are found on *Tamarindus indicus* (Hunase mara in Kannada) the fruits of which yield good harvest to the owner. In cases where there is economic loss of the owner, it should be compensated not as a compensation but should be given as a reward to the owner.

**6. Gundu Thoppu** – This practice in the Old Mysore State served as community lands for community gatherings like feasts, fares. They had protected vegetation of species like *Mangifera indica*, (Mango), *Madhuca indica* (Hippe) where the fruits were collected and sold. These places also served as watershed catchment for the village tanks. But now these landscapes can not be seen any more in villages. Even though the function these places had is even today important and valid especially watershed catchment.

Efforts should be made to develop the protect the watershed of the large number of tanks and reservoirs in the State based on the concept of Gundu Thoppu.



**7. Annual and ritual hunting** – This practice is also known from almost all parts of the State. The control or support to such practice needs to be done with respect to the species hunted e. g. the species like Wild Boar is a pest in Malnad resulting in destruction of crops. In such cases the practice of hunting of wild boars could be supported in Malnad. But this decision requires careful monitoring on the population and the damage done by the species every year. Otherwise the support to hunting of such species might threaten the existence of the species.

In cases where rare or threatened species are hunted, education and awareness campaigns need to be conducted to educate people about the ecological importance of the species. There could be replacement suggested for the species from domesticated animals like goat or chickens as a symbolic hunting.

Another way in which education component can be addressed is the dances of symbolic hunting. In village Begur, Kodagu district, a dance is performed inside the sacred grove where a tree is targeted as an animal and the performer hunts the tree with an arrow as a part of ritual. Such examples can be promoted to tackle the issue of sacrifices to the god making them more and more symbolic and non-violent.