Social Dimensions of Forest Use: A Village Study in Western Ghats

(With special reference to Caste-Class Linkages with Forest Resources)

Abstract:

Harvesting forest resources and their utilization is socially constituted. The pattern of utility and harvesting practices of these resources is respond to the social diversities of a community living on the perimeter of forest. In other words, the relationship between forest resources and the community are determinant upon the socio-economic and socio-cultural characteristics of the community in focus. For instance in a multi-ethnic village, Gonds harvest gum, Mahuva flower and Charoli seed; Banjaras harvest grass for their livestock; Kolams collect fire-wood and bamboo for making bamboo-ware to eke out their livelihood. Most of these products are specific to certain social groups and what they harvest has social cognizance. There is social stigma attached to these products. Gum, for instance is harvested by only Gonds and others consider it as too menial job suitable for only Adivasis like Gonds. Similar is the case with harvesting bamboo and production of bamboo-ware products with which Kolams are associated with. Patterns of this kind perhaps, vary from one context to other depending on the community characteristics on one hand and diversity of plants species in the forest on the other. The proposed case study intends to address to the set of four questions which are as follows: What are the various social groups or strata in the village? What is their relationship with the forest and the related resources? What is the modus operandi of these groups in terms of their access/ control and utilization of forest resources? And What mechanisms are needed to ensure the sustainable use of forest resources?

Key Words: Forest Resources; Community Characteristics; Caste and Class; Pattern of Access, Harvest and Utilization; Stratification;

Background and Objectives:

The National Forest Policies (1952 and 1988) have envisaged for developing a reserve of 33 percent of country's geographical area under forest cover. This includes 60 percent in the hill areas and 20 percent in the plains. In reality it is estimated that only 22 percent of the country's landmass is covered under forests that is under the control of forest departments putting all states together. There are disputes over these figures regarding their authenticity. It is said that only half of the official claim (11 percent) comprises of actual tree cover with moderate density and the remaining half (11 percent) is described as forest without adequate tree cover.

There are various factors associated with the depletion of forest reserves in the country. The prominent factors are population explosion among the forest dependent communities; shifting cultivation; unsustainable modes of extraction of forest products (both timber and non-timber) especially fuel-wood; and the encroachment of forest lands

for agricultural operations. These are all endogenous factors affecting the depletion of forests. There are exogenous factors such as industrial orientation of the Forest Policy; state sponsored programs in the name of development, the lack of appropriate property right regimes and so on. However, the present study dwells upon the endogenous factors where the community which is directly dependent on the forest resources resorts in the process of depleting these resources.

Gadgil (1994) observes that there had been a system of resource allocation in the forest dependent communities in Western Maharastra and this had facilitated the evolution of particular cultural forms and sustainable use of forest resources. The stability of caste system in India over centuries was attributed to this factor of resource allocation. As it is well known, in Indian caste system, each caste tended to pursue a hereditary occupation. The artisan and service castes, the pastoral and nomadic communities are an illustration to this point. Each of these communities maintained their identities in the form of language, cultural traits, skills, food habits, beliefs and practices. Resource partitioning and the relationship between the communities and the forest resources are clearly brought out in this study. In the case of forests of Western Maharstra, for instance, Kunbis carried out agriculture where as Gavlis were buffalo keepers; Hatkars tended sheep and Nandiwallas were Bull performers; Vaidus practiced indigenous medicine and Phase Pardhis continued with their traditional hunting and food gathering.

Springate (2003) in his study on Community Forest Management in the Middle Hills of Nepal found a close association between the class status of the forest users groups and the particular product they harvest from the forest. The findings are worth noting: (i) Poorer and landless households depend on non-land based activities such as laboring, artisan related work and Non Timber Forest Products (NTFPs) collection; (ii) Middle class households had landholdings and cattle had greater dependency on farming related inputs from the forest; and (iii) Richer households had less dependency on forest resources as they had extensive on-farm tree resources, grazing land, private forest and a good number of livestock.

There are debates on this issue. There are scholars who argue that local communities are always forest friendly and it is the outsiders who unscrupulously harvest and destroy the forests. There is glorification of the forest dependent communities including tribes in this regard. Perhaps, the present scenario reflects such glorifications are far from reality. Though in the past, these communities had developed a culture of preserving forests and were living with limited wants and aspirations and their dependency on forest was ***constructive***. However, in the changing circumstances, the same communities have come out of their traditional isolations and are getting mainstreamed. Their changing values, lifestyles vis-à-vis unlimited wants have made their dependency on forest ***destructive***, and therefore, needs a careful examination. Thus, the study has relevance do systematically document the interface between the forests and the community and suggest viable policy options.

The proposed case study intends to address to the set of four questions which are as follows:

i. What are the various social groups or strata in the village?
ii. What is their relationship with the forest and the related resources?
iii. What is the modus operandi of these groups in terms of their access/ control and utilization of forest resources? And
iv. What mechanisms are needed to ensure the sustainable use of forest resources?

These questions are examined in the context of Western Ghats of Karnataka. Hosanadu, a multi-caste village in Shimoga district is taken for the study to examine the research questions stated above.

Methodology:

Primary source of information was collected through the officials of the Departments of Forest, Revenue and Agriculture. Key informants like village leaders representing various castes and tribes were also interviewed. A check list was prepared to carry-out discussions with these officials and the group leaders. The issues covered in these discussions were mainly related to locating individuals in the village in their respective strata based on caste, size of the land holding and occupation. Based on the location of individuals in the village social structure, an attempt has been made to examine what kind of forest resources they harvest and the extent of their dependency on the forest resources. Therefore, the check list was comprised of the details such as the various caste groups in the village, the distribution of landholding pattern across castes, occupations apart from the agriculture. The discussion items also included the quantity of fuel wood, dry leaves, green leaves, bamboo, Non- timber Forest Products such as mango, cinnamon, wild turmeric etc, and timber harvested and used and the mode of getting them; and the variations in harvesting these products in terms of caste and land size. A comprehensive situation about the patterns of harvesting behavior was intended to capture from these instruments. Apart from these data sources, a cross section of the households in the village was interviewed using semi structured questionnaire schedule. A sample of 21 households was interviewed for this purpose.

Based on the size of the landholding, all the sample households were stratified into five groups based on their relationship to land viz, (i) Landless strata: comprises of those households who do not have land and depend on wage work as the primary source of livelihood; (ii) Agriculture & Wage Workers strata: These households do not own any land in their names legally but carrying out cultivation on the land encroached land and supplement household income through wage work; (iii) Small & Marginal farming strata: those households who are regular cultivator and have the farming area 2.5 acres to 5 acre including the land registered and encroached: (iv) Medium farming strata: includes households 5-10 acres and (v) Large farming households cultivate above 10 acres of land. To standardize the classification, a conversion scale is used. One acre garden= 2 acres irrigated land or 3 acres dry land. Each of these strata is taken as a unit of analysis and examined against caste as to how within strata; caste-wise variations in harvesting

behavior are to be characterized. That is, from the ***social stratification*** perspective, the entire relationship between the community and the forest resources is explained. To elaborate further, under the strata of (i) Landless households, which are the castes/tribes situated; what are the products harvested by them from the forest; what the labor time is spent; what quantity of products are consumed or sold for generating income and so on. The forest-people interaction processes are explained within the framework of each strata to facilitate better understanding of the situation and arrive at more durable policy prescriptions.

Description:

Western Ghats is one of the14 physiographic zones classified by the Forest Survey of India. The geographical location of Western Ghats is stretch of hill chain spread between 8 degree and 21 degree North latitude and 73 degree and 75 degree East longitude in the peninsular India. The Western Ghats runs into a length of 1600 km and a width ranging from 5 km to 150 km. It passes through six states/union territories which include Dadra & Nagar Haveli, Gujarat, Karnataka, Kerala, Tamilnadu and Maharastra. From these states, it encompasses 5 complete and 30 partial districts. Shimoga is one such district in Karnataka which partially covers Western Ghats and the study is located in this district. The district has been selected based on the familiarity with the area and the issues and one of the districts subjected to rapid transformations due to state sponsored development projects. These projects are mainly in the power generation, mining, irrigation and paper & pulp industries posing a threat to the forest reserves in the region.

The district Shimoga is located between 13.27 and 14.39 degree North Latitude and 74.38 and 76.4 degree East Longitude. Topographically, the district is divided into 3 divisions viz. Malnad, Semi-Malnad and Maidan. The taluka, Hosanagara, selected for the study comes under malnad division of the district. The district comprises of three types of forests which are: (i) Moist Deciduous Forests; (ii) Ever Green Forests; and (iii) Dry Deciduous Forests. The study taluka Hosanagara falls under Evergreen forests.

The forests of this district assume an important position in the regional economy by way of generating revenue (District Gazetteer: 1975). The sources of forest revenue are: a) hard and soft wood, b) Sandal wood, c) bamboo & cane, d) medicinal plants, e) halamaddi (Hilanthus Malabarica), f) barks (cinnamon), g) Tupra leaves (Diospyros Melamoxylon) and, h) fire-wood.

About the taluka: Hosanagara taluka is located between 13.42 and 14.05 degree North latitudes and 74.50 and 75.22 degree East longitudes. It lies on the South-West part of the district. There are 202 villages in the taluka of which 5 are uninhabited villages. Total area of the taluka is 1423 square kms. It comprises of 29 village panchayats. According to 2001 census report, it has a population of 1,02,700 of which 49.7 percent are males and 50.3 percent are females which indicates an encouraging sex ratio. Taluka is predominantly rural constituting 92.5 percent of the population residing in rural areas. It has 10.22 percent of Scheduled Caste and 1.66 percent of Scheduled Tribe population. The peculiarity of this taluka is that it has the lowest population density in the district, i.e.

72 persons per square kms. The population growth in the taluka during 1981 and 1991 is only 1 percent which is noteworthy. Other peculiarity of the taluka is that it receives the highest rainfall in the district as per the 2002 official records which accounts for 2388 mm in the year.

The total geographical area of the taluka is 143369 hectares of which 24.4 percent covered with forests. Most of the forests in the taluka come under Reserved Forests. However, people living in the vicinity of the forests are permitted to use fodder, fuel-wood, dry and green leaves from the forest in limited quantities for consumption purposes. Since this is a reserved Forest area, the forest products are not allowed to market outside the taluka jurisdiction. Certain products which generate revenue to the Forest Department are leased out to the contractors through tenders. Spices, Cashew-nut, aromatic plants are some of the items classified as Non-Timber Forest Products (NTFPs) which are leased out by the forest Department. Direct and private trading in these products is not allowed in this area.

According to the 2002 official records, 23,828 hectares of land was cultivated in the taluka of which 66.7 percent was under food grains, 7.2 percent areca-nut, and 11.3 percent under spices cultivation. The important crops grown in the taluka are Paddy, Sugarcane, Areca-nut, Ginger, Pepper and fruits.

The distribution of agriculture landholdings in the taluka has some unique features. Nearly 80 percent of the holdings are small and marginal cultivating a land area of 46.7 percent whereas semi medium and medium farmers constitute 20.4 percent of the cultivators and cultivate 46.6 percent of land area. Big farmers constitute only 0.7 percent in the taluka.

Profile of the village:

Hosanadu is a multi-caste village situated 40 km. west of Hosanagara, the taluka headquarters. It is part of Nittur group Village Panchayat. Hosanadu comprises of 10 segregated caste based settlements which is a typical pattern of village settlement in this region. For instance, Mathigodu and Shiraguli are inhabited by Madiwalas (washerman community); and Theregodu and Madiki are Brahmin settlements. Kurikoppa settlement is populated by Adi-Karnatakas, who are classified as Scheduled Caste. Savalur and Sulagodu are the Lingayat settlements where as in Benkitale and Mudage Vishwakarmas (carpenter community) live. Gadineralu is another settlement inhabited by Poojars a caste classified as backward Community in Karnataka. All these settlements are spread within a radius of 1 to 5 km. from the landmark K.B circle (Kudure Beerappana circle).

Hosanadu is a rehabilitated village. During 1964, Karnataka Power Corporation Project was initiated in the region by the Government of Karnataka across the river Saharavathi. When the original village was displaced and rehabilitated, nearly three-fourth of the families vacated this place and migrated out after receiving compensation. Only one-fourth of the families are living currently in this rehabilitated village, Hosanadu.

Even though Hosanadu comes under the revenue administration of Hosanagara taluk , by it geographical distance, it is closer to Sagar taluka around 15 km. distance. For official work people travel to Hosanagara which is 40 km. away whereas for buying and selling they prefer to travel to Sagar. In rainy seasons, their mobility is constrained by back waters of Sharavathi River and they have to take the services of ferry boats to a distance of 2 km. to reach the main road. The other facilities available in the village are: a sub-post office, residential ANM (Auxiliary Nurse & Midwife), Veterinary Hospital and a School from1st to 8th standard.

Table 1: Land Utilization Pattern

Particulars of Activity	Area (Hectares)	Percentage
1. Area under Cultivation	186.76	3.85
2. Uncultivable Land	83.32	1.72
3. Non-Agricultural Land	1940.06	40.07
4. Hillock	12.33	0.2
5. Grazing Land	1536.38	31.7
6. Waste land	38.34	0.79
7. Cultivable Waste	193.76	4.0
8. Forest Land	850.12	17.5
Total	4841.07	100

Considering the land utilization pattern of the village, the proportion of the land brought under cultivation is highly negligible as compared to the total land area (see table 1).The land use pattern in the village indicates that only 3.85 percent of the land is under cultivation. This is due to hilly terrain and undulated landscape of the region. The village forest land accounts for 17.5 percent and as large as 31.7 percent is available as grazing land for village cattle.

As per the official records, major portion of the cultivated land is classified as rain-fed irrigation (see table 2). Since this region receives more than 120 days of rain fall annually, some of the irrigation crops are cultivated based on monsoons and hence this classification. The proportion of dry and garden lands is less as compared to land under rain-fed irrigation.

Table 2: Classification of Land under Cultivation:

Land classification	Area	Percentage
Dry land	9.05	4.8
Rain-fed Irrigation	175.35	94.0
Garden	2.36	1.0
Total	186.76	100

Cropping pattern of the village indicates that Paddy is an important crop in the village followed by two horticultural crops viz. Areca-nut and Banana. These crops assume vital position in the village economy (see table 3).

Since this region is a high rainfall zone, paddy is cultivated as rain-fed crop. Barring Ginger, rest of the crops is classified as horticulture/Bhagayat crops.

Table 3: Area under various crops:

Name of the Crop	Land area	Percentage
1. Paddy	115.10	76.9
2. Sugarcane	1.27	0.8
3. Ginger	9.33	6.2
4. Areca-nut	15.90	10.6
5. Banana	7.15	4.7
6. Black Pepper	0.25	-
7. Cardamom	0.20	-
8. Cashew-nut	0.30	-
Total	149.50	100

The demographic variations of the village over the decades depict an interesting scenario. The census figures of 1991 and 2001 show many interesting transitory features of the village (see table 4). While many pockets of the district show exponential growth of population over the decade, this particular village depicts a below normal growth of population over the decade. Between 1991 and 2001, there has been only 8.7 percent increase in the number of households and 9.7 percent in the population. The Scheduled Caste population remained largely unaffected over the decade. Perhaps, this is due to out migration of some members in search of employment. What is more glaring is the reduction of main workers by 24 percent and increase of actual cultivators by 96 percent. This indicates that a sizable proportion of the landless laborers acquired land and

Table 4: Decadal Demographic Change:

Sl. No.	Demographic Particulars	1991	2001	% Change
01.	Total Households	115	126	8.7
02.	Total Population: a) Male b) Female	632 325 307	700 364 336	9.7 10.7 8.6
03.	Scheduled Caste	67	66	
04.	Scheduled Tribe	05	02	
05.	Others	560	632	
06.	Literate Population	301	411	26.7
07.	Main Workers	279	212	-24
08.	Cultivators	03	76	96
09.	Agricultural Laborers	226	80	-65

assumed the status of cultivators over the decade. This transition is further supported by the decrease of Agricultural Laborers by 65 percent during the same period in the village.

The village social composition reflects that Lingayat, Madiwala and Vishwakarma are the numerically important caste groups in the village (see table 5). Out of 125 households,

Table 5: Social composition of the village:

Sl.No.	Name of the Caste/Tribe	No. of HH	Percentage
01	Lingayat	31	24.6
02	Brahman	09	7.1
03	Idiga	03	2.3
04	Madiwala	27	21.4
05	Bandari (Barber)	04	3.1
06	Pujar	03	2.3
07	Devadiga	02	1.5
08	Adi-karnataka	14	11.1
09	Namdari Gowda	03	2.3
10	Vishwakarma	24	19.0
11	Dievajna Brahman	03	2.3
12	Mogera/Nadava	03	2.3
Total		126	100

two castes viz, Adi-Karnataka and Mogera belong to Scheduled Caste. Madiwala, Bhandari, Pujar and Devadiga belong to middle social status group and the rest of the other caste groups belong to upper social status.

Land-size classification of households in the village reveals that there are 64 cultivators in the village and a majority of them belong to small and marginal farming categories (see table 6) which constitute for nearly 37 percent of the cultivators of the village. Medium and large farmers account for 13.5 percent and the rest 49 percent are landless and wage workers. This indicates that the village population is divided into two halves (i) landless households and (ii) the landed households. The landed households are further divided into three categories based on the size of the landholdings as given below:

Table 6: Land size classification of households:

Sl.No.	Land-size categories	No. of Households	Percentage
01	Marginal farmers (< 2.5 acres)	28	22.2
02	Small farmers (2.5-5 acres)	19	15.0
03	Medium and large farmers (> 5 acres)	17	13.5
04	Landless & Wage workers	62	49.2
	Total	126	100

Since the stratification of the households is done on the basis of the land-size, sample is drawn from each land size category and considered as a unit of analysis.

Strata I: Landless and Wage Workers (10):

This strata comprises of 10 households that is, 50 percent of the sample which is also a representative proportion of the village. Except Brahmin, Lingayat and Idiga, this strata includes all other castes in the village (see table7). The social hierarchies in the sample are quite revealing. In this strata, Namdari Gowda (traditionally agriculturists) and Vishwakarma (traditionally carpenters) enjoy better ritual status in the sample. Mogera and Adi-Karnataka are placed in the lowest position in the social hierarchy while the remaining castes belong to middle order in the village. Even though all of these castes belong to economically same class, their ritual statuses vary and this variation is reflected in their relationship with forest. The households in this strata are prominently dependent on three products from the forest viz. Fuel-wood, Fodder and Bamboo-shoots. All these products are ***free access products*** and people are permitted to collect from the forest without paying any charges. In terms of quantity and relative importance in economy, fuel-wood ranks first followed by bamboo-shoots and fodder. Namdari Gowda and Vishwakarma larger quantities of fuel-wood as compared to other caste members of this strata. Interestingly, this higher level of fuel-wood consumption is not related to the size of the family or nearness to the source of fuel-wood. The life style and the cultural practices of these castes are associated with this rate of consumption. Keeping a drum of water hot throughout the 24 hours a day is a distinctive characteristic feature of these castes which makes them high fuel-wood consuming communities of the village. It is a culture in this region, especially amongst the upper and middle social status groups to use hot water to freshen themselves after the work. It is also a part of the tradition to offer a bucket full of hot water to the visiting guests to have a wash before a cup of coffee/tea or lunch/dinner. Offering hot water to the visitors is a part of the hospitality package in these communities. Keeping this drum-full of water hot for ever, consumes substantial use of fuel-wood and pressure on the forest.

Table 7: Composition of Landless Strata

Sl. No.	Name of the Caste/Tribe	No. of HH
01	Namdari Gowda	01
02	Nadava	01
03	Bhandari	01
04	Mogera	01
05	Pujar	01
06	Vishwakarma	01
07	Madiwala	02
08	Adi-Karnataka	02
Total		10

However, in case lower social status groups, fuel-consumption is intense and confined for cooking and heating water for bathing. The practice of keeping hot water is not a conspicuous feature in these caste groups. Culturally, they are not bound by this practice.

The second important product harvested in this strata is bamboo shoots. The forests of this region have extensive bamboo-grooves and are subjected unscrupulous felling. This

is applicable to bamboo reserves in both reserve forest and private lands. People use bamboo as fencing material, repairing dwelling units and the cattle sheds. Within this strata, there are small patterns in the use of bamboo. Those who have cattle-sheds and Kuchha houses, tend to use more quantity of bamboo than the others. For the poorest of the poor in this strata, collecting any free access product from the forest, involves an opportunity cost of labor and therefore, a day spent on collecting forest products costs a day's labor wage. They are constrained by this factor before employing their labor in extracting the forest products.

The third forest product is fodder. Obviously, those who have cattle are more dependent on the grass in the forest. Even though there are restrictions for free grazing in the forest, people resort to drive their cattle into the forest for free grazing. Partly, stall feeding is also is in practice. In either the case, the members of this strata who have cattle are dependent on the forest for grass as they do not have cultivable lands and do not produce agricultural waste for feeding their cattle. Since the grass is a free access product from the forest, some households are maintaining 5-6 cattle which are an additional wealth for them. This tendency is seen more pronouncedly in case of upper and middle social status groups such as, Namdari Gowda, Vishwakarma and Madiwala. Higher the number of the cattle in this strata, larger is the dependence on forest grass.

Strata II: Agriculture and Wage Workers (3):

This strata has a peculiarity of its members who do agriculture but they do not have ownership title of the land. They have been cultivating lands ranging from 3 acres to 9 acres which are nothing but encroachments into the reserve forest lands. Those who have encroached small acreage of land, supplement their family income through wage labor while those having larger lands encroached, dependent on agriculture. Encroaching forest land is a common feature in this region and it depends on the investment capacity of the individual and the power relations one enjoys in the region. That is, cordial relations with officials and the political elites. Caste status and also it's numerical and therefore, political status has a greater role in facilitating encroachment of forest lands.

There are three households in this strata. They belong to different caste groups. In terms of use of forest products, in this strata, a few more products viz. green leaves, dry leaves,

Table 8: Distribution of Caste and Land Encroached:

Sl.No.	Name of the Caste	No. of HH	Land Encroached (acres)
01	Devadiga	01	03
02	Nadava	01	05
03	Daivagna Brahmin	01	09
Total		03	

timber and encroached forest land are being added apart from fuel-wood, fodder and bamboo-shoots. The different caste groups exercise control over encroached lands differently (see table 8). The typical social and political statuses of the three castes and

their control over land are reflected in this table. Devadiga, amongst the three castes has lower social position and control a very small encroached land (3 acres) where as Daivagna Brahmin controls larger area of land (9acres) and he enjoys highest social status in the region.

There are similar variations in terms of harvesting other forest products (see table 9). In fuel-wood consumption there is a conspicuous variation across three different castes ranging from 1.6 cart-loads per person annually in the case of Devadigas to 2.8 D.Brahmin. This is a clear reflection of the life style and cultural practices than the size of the family. This point is further pronounced in case of cattle wealth. It ranges from 2 to 6 across different castes. There is a caste dimension in the affinity towards possessing cattle. Devadigas are more inclined towards wage work and less interested in herding cattle which requires labor time. In case of D.Brahmins, there is a clear tendency towards developing agriculture and to lead a more dignified life as they have already controlling larger area of encroached lands. They consider cattle as complementary to agriculture by way of preparing compost manure for the fields.

Table 9: Caste wise dependence on forest products:

Sl.No.	Products/Caste	Devadiga	Nadava	D.Brahmin
01	Family size	05	06	05
02	F-wood (cart-load)	08	10	14
03	Per capita F-wood	1.60	1.66	2.8
04	No. of cattle	02	04	06
05	Source of fodder	Forest	Forest/stall feeding	Forest/stall feeding
06	Dry/Green leaves	Nil	Nil	5+5 cart load
07	Bamboo	Nil	50 shoots	50 shoots
08	Timber/Poles	Nil	Nil	100 Poles

Meeting fodder requirement becomes an important consideration to maintain cattle. Those who have lands and do intensive cultivation can afford to stall-feed their cattle apart from driving into the forest. This is happens to be true in case of Nadavas and D. Brahmins. Those who are not serious cultivators like Devadigas, depend on forest exclusively for supply of fodder. As they are less concerned with agriculture, produce less agriculture residue which could be supplemented for feeding cattle.

Harvesting dry and green leaves for preparing compost manure is an important indicator in this region which depicts the cultivation of commercial and horticulture crops and enterprising qualities in agriculture. D.Brahmins obviously, express themselves as an enterprising class of cultivators in this region. Despite the fact that this household is yet to legally own the land, have taken advanced initiatives in developing the land, agriculturally.

D.Brahmins collect larger quantities of bamboo and timber from the forest as compared to other two castes in the same strata. This indicates, within the same strata, social status, culture and life styles significantly influence the collection and consumption of the forest products.

Strata III: Marginal and Small Farmers (2):

There are two households in this strata one each belonging to Vishwakrma and Madiwala caste. Both of them belong to the category of small farmers. One peculiar feature of this strata and strata onwards is they are in possession of two types of lands (i) registered (dry, irrigated, garden land) and (ii) un-registered (Byana/Betta). The un-registered lands are encroached lands from the forest and are classified as an illegal possession. Locally these lands are called Byaana or Betta which comprise of silvicultural plantations. The encroachers are permitted by the forest department to harvest dry and green leaves and graze their cattle. These lands are fenced and come under claims of the individuals who fence them. Once fenced, such lands become private land without ownership titles. This is a common scenario in many parts of Western Ghats.

Table 10: Dependence on forest products and their use:

Sl.No.	Particulars of forest use	Vishwakarma	Madiwala
01	Family size	05	05
02	Fuel-wood (cart load)	17	16
03	Per capita fuel-wood	3.4	3.2
04	Cattle owned	04	05
05	Source of fodder	Forest & stall-feeding	Forest
06	Dry/Green leaves (cart load)	05+03=08	08+05=13
07	Bamboo	50	50
08	Timber (for repairs)	Required	Required
09	Timber (for Agri. Equipments)	Required	Required
10	Land (registered)	2.18 acre	01.00 acre
11	Land (encroached)Betta/Byaana	2.00	03.00acre

As representatives of this pattern, the two households in this strata possess both registered and Byaana/Betta land. Their relationship with the forest emerges to be more complex as compared to the other earlier two strata (see table 10). The consumption of forest products has increased as one moved from lower strata to upper strata. This increase in consumption is attributable to changes in their socio-economic status. Compared to earlier strata, there has been a substantial increase in per capita consumption of fuel-wood in this strata. This is attributable to the off-farm processing of agricultural products; particularly cooking of areca-nut consumes larger quantities of fuel –wood, since it is an important commercial crop in the region under Bagayat (horticulture crops). Those who have areca-nut gardens engage themselves in cooking and drying areca-nut before taking it to the market. This is a value addition to their product. Fuel-wood consumption has a direct relationship with the cropping pattern in this area as some of the off-farm processing activities involve heat energy. There is a close association between certain crops and the consumption of fuel-wood. Areca-nut is one such crop.

The number of cattle owned has direct implication on the pastures in the forest. Since the settlements are close to the forest, baring rainy seasons, farmers have a tendency to drive their cattle to graze in the forest. However, this behavior presupposes that these households have only local breeds of cattle, which are shorter in height and very well adapted for grazing on the forest-mountain slopes. In case of cross-breed, high milk yielding cows, stall feeding becomes inevitable. The farmers in this strata, own only local variety of cattle and therefore, rely on the forest pasture for grazing their cattle which is economical and convenient.

Collection of dry and green leaves, as mentioned earlier, is a characteristic feature of progressive farmers who take up commercial crops. Areca-nut and ginger are two main cash crops cultivated in this strata. Both the crops require compost manure to increase productivity. As pattern, green leaves are harvested from the encroached (Betta/Byaana) lands where as dry leaves are collected from the larger forest area. In the encroached lands, cutting trees and cultivation practices are strictly prohibited by the forest department. However, extracting green leaves from the trees on this land is allowed and people resort to this activity during winter season.

Similar is the situation with use of bamboo and timber related products. Bamboo as a fencing material is widely used for protecting crops and also on the periphery of the dwelling units. Annual repair of fencing is a regular activity which involves cutting of bamboo-shoots. The economically well-off sections go for better substitute for fencing such as barbed wire fencing and deep trenching. Since the farmers of this strata are not so well-off, there is higher degree of dependency on the bamboo.

Farmers of this strata have to depend upon forest for timber related products which they require for repairing dwelling units and cattle sheds. Due to lower economic status, they can only afford to construct kuchcha or semi-pukka dwelling units and cattle sheds which require regular repair and up-keep. In addition to this, as small cultivators, they harvest poles and other timber for making agricultural equipment and other accessories required for a typical farming household.

Strata IV: Medium Farmers (2):

There are two farmers in this strata one belongs to Ediga and the other Lingayat. By social status Lingayats assume upper position and the Edigas are the middle status group. Traditionally, Lingayats are cultivators and Edigas are toddy tapers. Due to their larger numerical preponderance in this region, they are political powerful community. The standing member of the Parliament and the Member of the Assembly belong to Ediga caste. In the broader, state politica, Lingayats are a powerful group. In this case also, the per capita fuel-wood consumption is higher in case of Lingayat which is a higher social status group than the Edigas who have middle social status(see table 11). Apart from cooking and heating water, Lingayats use fuel-wood for cooking areca-nut in a relatively

larger quantities. Edigas of this strata do not have areca-nut crop and cultivate Sugarcane in small acreage and prepare jaggery for household consumption. The additional quantity of fuel-wood is consumed in the jaggery making process.

In case of managing cattle and fodder, there is no clear cut pattern or differentiation between these two households. A minor differentiation is that the Lingayats drive the cattle to the forest where as the Edigas graze their cattle on their Byaana (un-registered land) as well as in the forest. This trend is more situational specific than the reflection of a broader patter, given the social positions of these two communities.

Table 11: Dependence on Forest Products and their use

Sl. No.	Particulars of Forest use/Caste	Ediga	Lingayat
01.	Family size	05	04
02	Fuel-wood (cart loads)	13	18
03	Per capita Fuel-wood	2.6	4.5
04	Cattle wealth	04	06
05	Source of fodder	Byaana/Forest	Forest
06	Use of Bamboo	50	50
07	Timber (Agri.Equip.)	Nil	Agr.Equip
08	Timber (Repair-Dwelling/Shed)	Nil	Repair
09	Dry/Green leaves	10+5=15 carts	10+6=16 carts
10	Landholding (Registered)	03 acres	04 acres
11	Landholding (Byaana/Betta)	03 acres	04 acres

With regard to bamboo consumption, both the households consume almost same quantities for the purposes of fencing. Interestingly, Edigas in this strata do not use timber for preparing either agricultural equipments or for repairing dwelling unit and cattle shed. Perhaps, they have pukka house and cattle shed which do not require annual repairs. In some families, agriculture is operated on share cropping basis amongst brothers which means Agricultural equipments are provided by one of them.

In case of harvesting green and dry leaves, both the households are at par with one another. This is true in terms of their control over the land. This indicates, barring a small variation in terms of their ritual status, they are at par with one another, which is quite true in this region.

Strata V: Large Farmers (4):

There are four households in this strata one each belonging to Brahmin, Daivagna Brahmin, Lingayat and Namdari Gowda (see table 12). All these castes belong to higher social status group and therefore, their dependence on forest products is different from that of the other strata discussed earlier. All the households in this strata are cultivators and own both registered lands and encroached lands (except Lingayat). The inter-household variations in consumption of forest products are not so pronounced as found in earlier cases. The fuel-wood consumption for instance, has less meaning with the size of the family. In this case, the fuel-wood consumption is not confined for cooking and heating water for bathing. Households of this strata use enormous quantities of fuel-wood

for post harvest processing of agricultural products. Cooking areca-nut and making jaggery out of sugarcane are the important post harvest activities which consume fuel-wood. The quantity of fuel-wood depends on the quantity of areca-nut and sugarcane subjected for processing. It is the area under sugarcane and areca-nut; the quantity harvested; and the quantity subjected to processing which determine the quantity of fuel-wood consumption in this strata. The other variability is the Byaana (encroached) land under control and the wood stock available on this land and the stock of agricultural

Table 12: Dependence on Forest products and their use:

Sl.No.	Particular of Forest use/Caste	Brahmin	D.Brahmin	Lingayat	N.Gowda
01.	Family size	04	06	03	09
02	Fuel-wood (cart loads)	18	15	10	19
03	Per capita Fuel-wood	4.5	2.5	3.3	2.1
04	Cattle wealth	12	05	04	08
05	Source of fodder	Byaana/forest	Forest	Byaana/Forest	Forest/Stall feeding
06	Use of Bamboo	50	100	50	100
07	Timber (Agri.Equip.)	Agri. Equip	Agri. Equip	Agri. Equip	Agri. Equip
08	Timber (Repair-Dwelling/Shed)	Repair (DH)	Repair (DH)	Repair (Cattle Shed)	Repair (DH+CS)
09	Dry/Green leaves(Cart load)	10+6=16	5+8=13	6+5=11	10+8=18
10	Landholding (Registered)	5.17 acres	4.24 acres	6.37 acres	6.38 acres
11	Landholding (Byaana/Betta)	04 acres	09 acres	nil	05 acres

{DH=Dwelling House; CS=Cattle Shed}

residue also influence how much wood should be brought from the forest. Therefore, as one moves from lower to upper strata, the dependence on forest gets complicated and various situational factors need to be included to analyze the trends. For instance, in upper strata households, use of gobar gas is a popular source of cooking energy which reduces the fuel-wood dependency. Some households in this strata also possess LPG gas for cooking. In the meanwhile in some households, especially Brahmins, there is a tradition of preparing pots of hot charcoal and keep them in their living and bed rooms during rainy seasons and winters as this region is humid and cold due to high altitude. All these factors make the computation of fuel-wood consumption more complex.

Regarding the cattle wealth and dependence on the forest for fodder depicts a mixed trend in this strata. First, grazing on Byaana land indicates that the cattle are allowed to graze nearby the dwelling units and a lack of family labor to drive the cattle back and forth between dwelling units and the forest. It needs a person to graze the cattle in the forest

and collect them back home. Those who graze cattle in the forest are expected to have this additional labor at home. Second, only local breed cattle are adapted for grazing in the forest and are known for low milk yield. They are reared for preparing farmyard manure and to run Gobar gas units which are popular sources of cooking energy in upper strata households (as mentioned earlier).

Use of bamboo is more or less common in all the four households in this strata. Largely, it is used for fencing as in case of other strata. Similar is the situation with the use of timber for preparing agriculture equipments and repairing dwelling units and cattle sheds. Invariably, all the households use timber for these purposes.

Harvesting dry and green leaves is an indicator of (as mentioned earlier) cultivation of commercial and horticultural crops. There is a close relationship between the quantity of consumption of dry and green leaves and the area under commercial/horticulture crops. Areca-nut is a popular area crop in this region and it requires larger quantities of farmyard manure. Since, all the farmers of this strata cultivate commercial crops, the consumption of bio-mass (dry/green leaves) is significant in this case.

What is important in here is that how much of green and dry leaves are harvested from the forest and from their own private sources? There are diversified scenarios in the field. Those farmers who are humble and constrained by resources (human & material) confine to their own Byaana for green leaves collection. Those who are better off in this strata, have better network relation with the forest officials and the political leaders, employ wage workers to collect green leaves from the reserved forest. There are instances of farmers protecting their own Byaanas and venturing into forest for green leaves. The attitude here is that trees in the forest are no man's property where as the trees in their Byaanas belongs to them. With respect to dry leaves collection, invariably, farmers of this strata employ wage workers to collect from the forest. There are fixed wage rates based on the quantity of collection. There will be a stiff competition before the onset monsoons for the collection of dry leaves. There are informal boundaries and territoriality in the collection of dry leaves to avoid conflicts and disputes.

Encroachment of forest land is common practice in this strata. Barring exceptionally a few, most of the farmers have unregistered encroached lands. Legalizing these lands is one of the major political manifestos of the leaders in this region. Based on their economic positions and linkages with political leaders and officials, farmers resort to encroachment of forest lands.

Policy Recommendations:

Based on the analysis of the situation presented in the case study, several policy recommendations are worked out which are as below:

1. There is stratification based on the socio-economic characteristics of the community and their access and utilization forest resources. The poorer strata, due to their

powerlessness, cannot muster enough resources for the forest for improving their living conditions. Their dependence on forest is that of subsistence and a strategy for survival. As it is clearly reflected in the preceding analysis, within the poorer strata, there are sub-strata such as those who have cattle, pucca house etc. The poorest of the poor consume fuel-wood from the forest in reasonable quantities to meet their cooking and bathing needs appears to be not posing a threat to the forest conservation. They do not indulge in over extracting the fuel-wood as they are constrained by the condition of poverty. Each day spent on the collection fuel-wood, they have to fore-go a day's labor which means an opportunity cost of a labor day. As their harvesting behavior (head loads) does not lead to greater damage to the tree cover in the forest, and meant for survival needs, should be allowed continue without harassment. They can be issued passes or the existing "Below Poverty Line (BPL)" cards for the purpose of identity.

2. The slightly better-off households both in the lower and upper strata who have cattle in their possession and depend on the forest for fodder requirement. As a policy measure, grazing of cattle in the forest should be prohibited and the rules in vogue in this regard should be enforced. In this place, stall-feeding should be encouraged by way of giving subsidy for constructing cattle sheds in this area. Another complementary measure to reduce the grazing of cattle in the forest is to discourage the local breeds which are dwarf and adapted for grazing on the hill slopes. In their place, improved, high milk yielding cattle be encouraged through subsidy and other means of motivation. Under anti-poverty programs, in coordination with the Departments of Forest, Block development and Animal Husbandry, a composite scheme should be introduced to popularize stall-feeding using improved breeds and to produce farmyard manure scientifically which has in great demand in the area. A policy program of this nature would generate additional employment and reduce pressure on the forest land for grazing.

3. Bamboo is one of the valuable but most unscrupulously used forest products in this region. People use bamboo extensively for fencing agricultural lands and the dwelling units. The enormous stock of bamboo available in the forests of this region should be put to more productive use so that some value addition should be made to this product. Unconventional bamboo-ware products such as decorative articles, office utility products, furniture etc, have a greater demand in the urban areas. Youth and woman can be trained in these vocations and by appropriate market interventions, gainful employment opportunities can be generated. This would reduce misuse of bamboo to some extent. Trenching and barbed wire fencing, electric fencing are the other methods which should be encouraged by giving incentives to reduce the annual felling of bamboo for fencing.

4. Collection of dry and green leaves is an activity of the middle and upper strata farmers who cultivate commercial and horticulture crops. These activities are carried out through hired laborers. The over extraction of dry leaves affects the regeneration cycle of plants, on one hand, and the soil erosion of slopes and undulated landscapes on the other. Even though the extraction of some quantities of dry leaves prevent forest fires, over extraction practices lead to unsustainable management of forests. Department of Forest should introduce some pricing mechanism to regulate the over harvesting of dry leaves. By

introducing such measures, indirectly, farmers will be motivated to develop their own sources of dry leaves by growing more trees on their private lands.

With regard to the green leaves, some farmers rely on their own Byaana lands while others depend on the forests. Also, some of them harvest from both the sources. In this context, government should pass a legislation to prevent cutting tree branches for green manure. Betta/Byaana land which are encroached by the farmers should be given rights to cultivate trees and use them for green manure and should not be allowed to cultivate other commercial crops and ownership titles of the land. This would prevent over extraction of green leaves from the forest and encourage growing their own trees on their private lands.

5. There are two forms of forest land encroachment in this region. The poorer households encroach as a means of livelihood where as the wealthy farmers indulge in this activity for expanding their private landed property. The second form encroachment should be strictly prohibited using appropriate legislations. Some base year should be fixed and the encroachments from that date onwards should be converted into village community forests and the tree ownership rights to the community/panchayats or declare as protected forests.

6. Using fuel-wood from the forest for cooking areca-nut and jaggery making are highly disturbing activities which need to be regulated. Fuel-wood based traditional chullas (owens) should discouraged in this area. Improved fuel-efficient chullas should be introduced with subsidy component. Alternative fuels should be developed using locally available agriculture residue such as paddy husk, coconut shell, areca-nut fiber etc, which would reduce pressure on the tree stock in the forests.

Key Learning:

This case study has brought out several lessons related to forest –people interface in the context of a village located in a reserved forest of Western Ghats. It uncovers some of the myths associated with such as poorer sections do more harm to forest resources than the better-off sections and so on. Some of the noteworthy learning is summarized as below:

1. The poor and the powerless, on their own, do not, and cannot afford to over use the forest products in the absence of market for such products. In the present context where the products are harvested only for consumption and not for sale, the poor households in the lower strata would never pose a threat to the conservation of the forest. As wage workers, a day spent in the forest in collecting fuel-wood for consumption is equivalent to the loss of a day’s wage income. Due to this opportunity cost involved in the collection forest products, they are expected to be judicious in spending their labor time, therefore, their consumption levels are low and the rate of extraction by them is sustainable.

2. Given the similar circumstances, the farmers in the middle and upper strata tend to consume more forest resources sustain their status and lifestyles. They find these resources are free or involve only the labor cost in the collection process. This is clearly

reflected in the quantity of collection of fuel-wood and consumption behavior. The rate of extraction of fuel-wood by them is not sustainable given the stock of fuel-wood generating tree cover in the forest.

3. The encroachment of forest lands is largely seen as the behavior of middle and upper strata farmers. This requires substantial investment of money and time to clear the forest, leveling the land, linkages with the officials and political leaders and so, on. In the present case study, this aspect is illustrated. Contrary to the popular belief, it is not the poor who indulge in encroachment always but the better-off sections in the village.

4. Cattle population in the area appears to be both a blessing and a threat to the forest conservation. Free grazing in the forest by the local breed of cattle is injurious to forest conservation and natural regeneration of trees. The local breed of cattle is dwarf and well adopted for grazing even on the hill slopes of the forests. As a blessing, they serve as source of farmyard manure and energy to run the gobar gas units by the farmers. These benefits can be further accentuated by introducing stall-feeding and replacing local breeds by the improved breeds which are ideal for stall-feeding.

5. The present case study also illustrates that the people's dependence on forests is not always constructive. People always look for cheaper alternatives in ignore the conservation benefits of the forests over time, both as individuals and as community. Alternative social institutions and value system can alter the existing consumption behavior of the forest products. Simultaneously, policies, definition of property rights and markets would also contribute for influencing the people's behavior that is congenial for forest conservation.

Conclusions:

The proposed case study intended to address to the set of four issues which are (i) what are the various social groups or strata in the village? (ii) What is their relationship with the forest and the related resources? What is the modus operandi of these groups in terms of their access/ control and utilization of forest resources? And what mechanisms are needed to ensure the sustainable use of forest resources? All these issues adequately discussed in the preceding pages.

Village communities are not homogenous social groups. There are strata based on social and economic positions of the individuals and households in the community. The members within the given strata have similar economic circumstances, opportunities and life chances to improve their conditions. By and large, the behavior and the rationale behind their behavior within the strata are expected to originate from similar circumstances and therefore, strata as a social unit of analysis provides a framework to explain the complexity of behavior of individuals. The present case study began its exercise by way of identifying five distinctly visible social groups-strata and an attempt is done to explain their relationship with various products in the forests. Ownership to land

is the basis of stratification and within this there are still subtle inter household variations in the form of caste, income, cattle wealth and so on.

Being a forest dependent community, there are intricate relationships between various strata and the forest products and quantity they harvest. As discussed in the text, each strata is endowed with certain capacities which are based on caste, class and power equations. Higher these capacities, greater is the number and quantity of products harvested from the forest. Therefore, in the lower strata, members could harvest fuel-wood, bamboo and some timber (poles) from the forest to meet survival needs. As there is an ***opportunity cost*** involved in their labor time, harvesting surplus products from the forest remained a difficult proposition for them. Because, the products considered in the analysis are all consumption oriented and not for markets and income generation. None of the members in the lower strata could encroach on the forest lands and exercise control over such lands. This reflects the lack of resources (class) and linkages with the political elites and officials (power).

In case of the upper and the middle strata, the forest products are used in larger quantities to increase their income and promote productivity level in agriculture and horticulture. This is reflected in their consumption of fuel-wood for post harvest processing of agriculture/horticulture products, and use of dry and green leaves for preparing compost manures. In case of these strata, the ***substitution cost*** for alternative products is the consideration for harvesting forest products. As forest dwellers, living in the vicinity of forests, for collecting forest products, the only cost they incur is the labor cost and the material cost works out to be free, a these products are free and open access products from the view point of the Department of Forests.

Similar is the case with grazing of cattle in the forest. The middle and upper strata farmers graze their cattle free in the forest, and in return, get dung for running gobar gas units as cooking energy and for preparing compost manure. By doing so they would be saving cost towards LPG gas which if computed becomes substantial. This is how substituting their requirements with the forest products, saves income. Income saved is equivalent to income earned.

Encroachment of forest lands is a typical phenomenon of the middle and upper strata farmers. As already discussed, by virtue of their social and economic statuses and linkages with the local political elites and the officials they encroach lands and control them. There are more instances in these strata where farmers have tendency of regularizing these encroached lands and expanding their property base. The use of forest resources is connected with the caste, class and power relations of these individuals in the community as clearly manifested in this case study.

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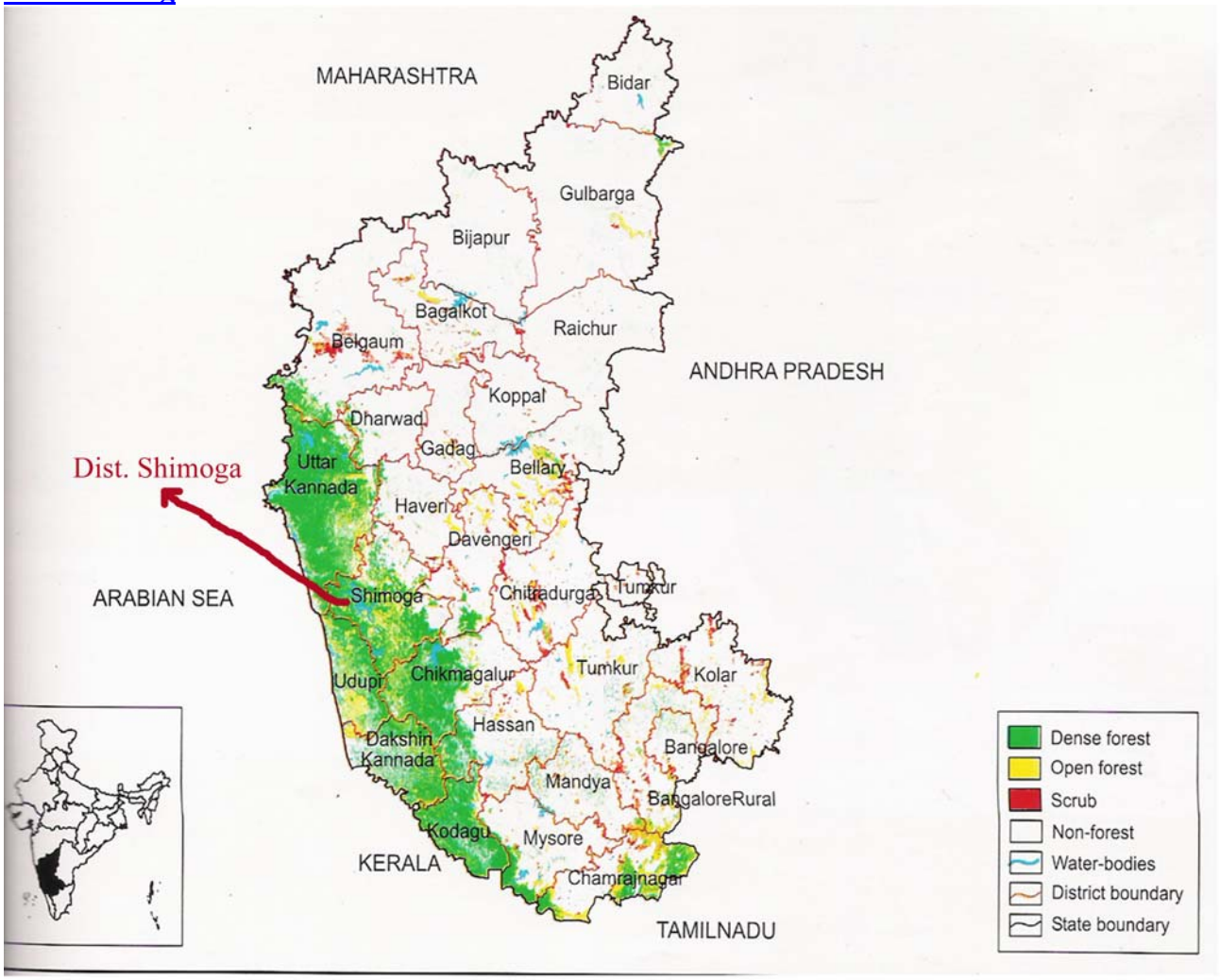

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Brief Description of Association:

My association with the issue of Forest and People goes back to 1998. As a member of faculty at School of Social Sciences, SRTM University, Nanded, I had an opportunity to spend ten days in a forest dependent village, in Kinwat taluka of Nanded district. It was

part of Master of Social Work education of expose the students to rural life and to orient them as how to study the rural community problems. Jawarla was the village chosen for the ten day village camp. It was a tribal dominant village. During this village study camp, I had an opportunity to observe and experience the diversities and associated with various ethnic groups their dependency on different forest products. Based on this observation and some primary data collected by my students, a paper was developed and presented in a National Seminar at Shivaji University, Kolhapur. The paper largely dwelled upon the socio-cultural setting of the each community and its dependency on different forest products in terms of income generation and meeting consumption needs. It was appreciated by the participants and it became a source of inspiration for taking interest in the subject. In the later part, these insights were further sharpened by the way of re-visiting to the same village and developed a comprehensive research proposal entitled "Economic Analysis of Forest Based Livelihood Systems: A Study of Two Villages in Nanded District (Maharastra)" for which a grant of Rs.2 lakhs was awarded to carry-out a detailed research under "India: Environmental Management Capacity Building" Technical Assistance Project by the World Bank through IGIDR, Mumbai. The summary of the project report is available on the IGIDR website. This assignment gave me an opportunity to review relevant literature on the subject, deepen my understanding about various connected with Forest and the people and also confidence to conduct independent research in this theme. In the year 2004, I had been awarded grants of Rs.4.75 lakhs from the University Grants Commission, New Delhi to work on the project entitled "Typology of Contest over Forest Resources in Western Ghats" and the work is in progress.