SUSTAINABLE LIVELIHOOD DEVELOPMENT OF TRIBALS THROUGH NON-TIMBER FOREST PRODUCE

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ABSTRACT

Indian society has been exposed to various socio-economic changes engineered by various legislative and constitutional initiatives over the last six decades. Indian society is highly stratified, with many glaring inequalities among the different social groups. This stratification has resulted into glaring inequalities among different social groups. This age-old social stratification is the result of the prevailing caste system, which has segregated the Dalits (SCs, STs and the OBCs) from the rest of the society to such an extent that they had been denied in the past even the basic human needs and the rights that are required to ensure one's bare existence. Forests offer vast potential for livelihood development, poverty reduction and rural economic growth in India. Forestry is the second largest land use after agriculture in India. About 275 million people are dependent on forests for their livelihood development. Non-timber forest produce sector accounts for about 68 per cent of the export in the forestry sector and 20 to 40 per cent of the annual income of forest dwellers who are mostly disadvantaged, landless and tribals. Against this view point, present paper purports to examine the role of forests in sustainable livelihood development of tribals in India.

INTRODUCTION

Indian society has been exposed to various socio-economic changes engineered by various legislative and constitutional initiatives over the last six decades. The constitutional provisions of democratic governance and the policy of positive discrimination have affected the social fabric and economic structure of Indian society. However, Indian society is highly stratified, with many glaring inequalities among the different social groups. This stratification has resulted into glaring inequalities among different social groups. This age-old social stratification is the result of the prevailing caste system, which has segregated the Dalits (SCs, STs and the OBCs) from the rest of the society to such an extent that they had been denied in the past even the basic human needs and the rights that are required to ensure one's bare existence. Indian civilization is a primary civilization which went deep into the roots of its ancient culture and tradition which traced its origin back to Indus valley civilization with estimated age around 3,500 years B.C. Indian society is multifaceted to an extent perhaps unknown in any other of the world's great civilizations. The ethnic and linguistic diversity of Indian civilization is more

as compare to any other nation. People acquire different identities based on: Culture, Region, Language and Religion. Throughout the country, religious differences can be significant, especially between the Hindu majority and the large Muslim minority; and other Indian groups--Buddhists, Christians, Jains, Jews, Parsis, Sikhs, and practitioners of tribal religions--all pride themselves on being unlike members of other faiths.

Forests offer vast potential for poverty reduction and rural economic growth in India while also supporting critical national conservation goals. Forestry is the second largest land use in India after agriculture. However, India's forests are under intense pressure and the nation is facing timber and fuel wood deficits. Moreover, about 40 per cent India's forests cover has been degraded to some degree and thus, current forest management systems need significant strengthening to monitor forest change and support further transitions in community-based forestry. Reforms in forestry sector are also imperative in order to exploit opportunities unleashed by the globalization and economic-liberalization.

Forest Land plays an important role in the general economic development of the country through the utilization of forest products—major and minor. Forests produce the requisite raw materials for industries, defence, communications, other public purposes and domestic use and contribute to the country's export and create a large volume of employment in the primary, secondary and tertiary sectors. They also provide material for direct use by the agriculturists, like fuel wood, small timber, fodder, grazing, etc. The benefits from forests in the matter of soil and water conservation, recreation, wildlife, etc. have been well recognized. Natural Resource Management is expected to play a key role in the development of the nation in the years to come. The government stands committed, as part of its Vision 2020 to bring about a new ethos of people centred growth oriented governance. Joint Forest Management is one of several areas where the government has tried to translate this vision into action, on a sizeable scale, by transferring decision-making to the people. It is now widely accepted that future of food, health and livelihood security depends upon the attention paid to the management of natural resources.

TRIBAL EMPLOYMENT

Tribal employment in India is shown in Table 1. Tribal employment in salaried jobs has been reported negligible (0.22 per cent). About 0.48 per cent tribal households were employed in salaried jobs in government sector in India. Concentration of tribal population was reported high in North-Eastern region (28.63 per cent) followed by West region (16.58 per cent) and Central region (10.97 per cent). Proportion of tribal households was recorded significantly high in Mizoram followed by Nagaland and Meghalaya. Tribal employment in salaried job in government sector was recorded high in North-Eastern region (3.25 per cent) and it was recorded more pronouncing in Nagaland (17.82 per cent) followed by Arunachal (12.39 per cent) and Mizoram (9.65 per cent). Tribal households constituted 7.21 per cent in West Bengal while tribal employment in salaried job in government in sector in the state was recorded 0.26 per cent.

Table: 1

Tribal Employment in India

State	% of ST Households	% Of Households With Salaried Jobs In		
		Government	Public Sector	Private Sector
India	10.97%	0.48%	0.06%	0.16%

Jammu & Kashmir	15.02%	2.04%	0.05%	0.11%
Himachal Pradesh	6.14%	1.46%	0.07%	0.32%
Punjab	0.00%	0.00%	0.00%	0.00%
Haryana	0.02%	0.00%	0.00%	0.00%
North Region	**3.50%**	**0.56%**	**0.02%**	**0.06%**
Bihar	1.62%	0.04%	0.01%	0.01%
West Bengal	7.21%	0.26%	0.11%	0.30%
Jharkhand	28.87%	1.02%	0.27%	0.48%
Odisha	23.91%	0.48%	0.05%	0.12%
East Region	**10.49%**	**0.30%**	**0.08%**	**0.18%**
Rajasthan	17.60%	0.78%	0.07%	0.19%
Gujarat	21.44%	0.72%	0.13%	0.59%
Maharashtra	13.40%	0.45%	0.07%	0.17%
Goa	12.87%	1.72%	0.48%	4.49%
West Region	**16.58%**	**0.63%**	**0.09%**	**0.30%**
Telangana	11.94%	0.28%	0.14%	0.12%
Andhra Pradesh	5.68%	0.12%	0.02%	0.04%
Karnataka	8.28%	0.23%	0.06%	0.19%
-Kerala	1.63%	0.09%	0.01%	0.01%
Tamilnadu	1.81%	0.04%	0.01%	0.04%
Southern Region	**5.48%**	**0.14%**	**0.04%**	**0.08%**
Uttarakhand	3.14%	0.33%	0.03%	0.11%
Uttar Pradesh	0.68%	0.02%	0.01%	0.02%
Chhattisgarh	36.86%	1.55%	0.07%	0.08%
Madhya Pradesh	25.31%	0.59%	0.07%	0.12%
Central Region	**10.97%**	**0.34%**	**0.03%**	**0.05%**
Sikkim	38.29%	7.90%	0.20%	1.44%
Arunachal Pradesh	76.38%	12.39%	0.47%	0.50%
1Nagaland	93.91%	17.82%	0.74%	2.36%
Manipur	51.77%	6.82%	0.36%	1.52%
Mizoram	98.79%	9.65%	0.97%	4.98%

Tripura	37.01%	4.43%	0.20%	0.13%
Meghalaya	90.36%	7.62%	0.81%	2.31%
Assam	14.28%	1.24%	0.08%	0.23%
North-Eastern Region	**28.63%**	**3.25%**	**0.20%**	**0.58%**

Source: Caste Census, Ministry of Tribal Affairs, Government of India.

Tribal workers in India are shown in Table 2. Tribal workers are mainly cultivators and labours. They are also engaged in domestic service. The proportion of tribal households engaged in cultivation was recorded high in North-Eastern region (15.59 per cent). It was found more pronouncing in Mizoram (72.95 per cent) followed by Nagaland (60.83 per cent) and Arunachal Pradesh (56.42 per cent. The proportion of tribal households engaged in manual casual labour was recorded high in Meghalaya (36.39 per cent) followed by Tripura (16.41 per cent) and Mizoram (8.78 per cent)

Table: 2

Tribal Workers in India

State	Cultivation	Manual Casual Labour	Part-Time Or Full-Time Domestic Service	Non-Agricultural Own Account Enterprise
All India	**4.16%**	**5.63%**	**0.22%**	**0.07%**
Jammu & Kashmir	5.98%	5.28%	0.80%	0.12%
Himachal Pradesh	2.77%	1.15%	0.50%	0.12%
Punjab	0.00%	0.00%	0.00%	0.00%
Haryana	0.00%	0.01%	0.00%	0.00%
North Region	**1.44%**	**1.09%**	**0.21%**	**0.04%**
Bihar	0.25%	1.26%	0.03%	0.01%
West Bengal	1.16%	5.17%	0.11%	0.04%
Jharkhand	12.27%	12.93%	1.20%	0.19%
Odisha	6.94%	15.12%	0.37%	0.11%
East Region	**3.07%**	**6.36%**	**0.24%**	**0.06%**
Rajasthan	8.29%	7.89%	0.40%	0.06%
Gujarat	9.79%	9.90%	0.24%	0.29%
Maharashtra	3.52%	8.64%	0.15%	0.07%
Goa	2.09%	2.81%	0.80%	0.20%

West Region	**6.49%**	**8.63%**	**0.26%**	**0.12%**
Telangana	4.34%	5.78%	0.17%	0.26%
Andhra Pradesh	1.63%	3.43%	0.08%	0.03%
Karnataka	3.43%	3.30%	0.23%	0.09%
Kerala	0.22%	1.22%	0.01%	0.00%
Tamilnadu	0.46%	1.22%	0.02%	0.03%
Southern Region	**1.86%**	**2.83%**	**0.10%**	**0.07%**
Uttarakhand	1.30%	1.05%	0.16%	0.07%
Uttar Pradesh	0.23%	0.36%	0.01%	0.00%
Chhattisgarh	19.17%	15.68%	0.44%	0.05%
Madhya Pradesh	8.08%	16.09%	0.27%	0.03%
Central Region	**4.30%**	**6.09%**	**0.13%**	**0.02%**
Sikkim	18.71%	7.71%	1.57%	0.88%
Arunachal Pradesh	56.42%	4.42%	1.76%	0.70%
Nagaland	60.83%	6.34%	2.40%	1.28%
Manipur	35.12%	4.65%	1.97%	0.28%
Mizoram	72.95%	8.78%	1.79%	0.73%
Tripura	12.66%	16.41%	1.87%	0.46%
Meghalaya	36.89%	36.39%	2.67%	1.22%
Assam	7.89%	3.72%	0.55%	0.10%
North-Eastern Region	**15.59%**	**7.06%**	**1.00%**	**0.28%**

Source: Caste Census, Ministry of Tribal Affairs, Government of India.

NON-TIMBER FOREST PRODUCE

Forests offer vast potential for poverty reduction and rural economic growth in India. They also support in achieving critical national conservation goals. Forestry is the second largest land use in India after agriculture. An estimated 275 million people in rural areas depend on forests for either wholly or partially for their livelihood. Forest dwellers, which include a high proportion of tribals are among the poorest and most vulnerable groups in society. About 75 per cent of India's rural population depends on fuel wood to meet domestic energy needs. Half of India's 89 million tribal people, most disadvantaged section of society live in forest fringe areas, and they tend to have close cultural and economic links with forestry. Forestry and logging

accounted for just 1.1 per cent of India's GDP in 2001. Adding non-market benefits of environmental services, subsistence fuel wood, fodder, and many other non-forest timber products, doubles the GDP contribution. However, forests are under intense pressure and the country faces significant timber and fuel wood deficit. An estimated 41 per cent of India's forest covers have been degraded to some degree in the past several decades. Average forest productivity is about 1/3rd of potential rates. Timber and fuel wood demand is well above the substantial harvest level. National Government is committed to conserving the forest and developing new forest to meet the goal of increasing forest cover to 33 per cent of the land area by 2012. Over the past several decades, the focus in forestry has shifted towards conservation. Joint Forest Management is now a key policy thrust. The potential benefits from improvement in forest productivity, coupled with further reforms around community based forestry are massive. Total forest income from commercial timber, bamboo and non-timber forest products could rise from an estimated $220 million in 2004 to about $2 billion annually in 2020, as per estimation of World Bank in 2006.Most of India's processing capacity is small scale. India's forest based secondary industry encompasses a wide range of small. Medium and large scale firms that process primary timber (logs) in to a variety of products for the domestic market (Table 3). The vast majority of plants and production capacity is small. Several emerging investments constraints impede the growth of the sector. These include shortage of raw materials (mainly for logs, due to felling bans in many state forests until forest management working plans are completed and numerous restrictions on log supply from private land and farmers); growing concern over environmental issues (mainly in larger production facilities, such as pulp and paper mills); judicial decisions to close unlicensed mills (particularly in the North East); economic liberalization and completion from imports (especially pulp imports); and poor management and technical skills (World Bank, 2005).

Table: 3

Secondary Forest Industry in India

Sub-sector	**Number of Production Units**	**Capacity share of small-scale plants (percentage of Production)**
Pulp and paper, paperboard	406	66
Wood-based panels	506	80-90
Sawmills	23,000	82
Matches	12,000	82
Doors, woodworking plants	98	25

Source: World Bank (2005).

There is vast scope and potential for the livelihood development in the forest based resources development and management. These resources are mainly Joint Forest Management Programme, Green India Programme, development and management of agro-forestry, social-forestry and industrial forestry; development and management of biofuel, bamboo resources, organic farming, horticultural crops, handicrafts, cultivation of medicinal and aromatic plants, etc. Even, livelihoods can be generated in the field of tourism development since the rural and cultural tourism has vast potential along with the wider scope for wild life tourism (World Bank, 2006)

Forests provide significant social and economic benefits at all levels, especially in developing countries. NTFPs like fuel-wood,

medicinal plants, wild edible vegetables, house building materials etc. are integral part of day-to-day livelihood activities. The contribution of non-timber forest products (NTFPs) to the forestry sector in most countries is significant, and studies are showing that they have been undervalued in the past. In India, NTFPs provide about 40 percent of total official forest revenues and 55 percent of forest-based employment. Nearly 500 million people living in and around forests in India rely on NTFPs as a critical component for their sustenance. A recent valuation undertaken by the Ministry of Environment and Forests in India estimates that 220 million tonnes of fuel wood, 250 million tonnes of grass and green fodder and 12 million m^3 of timber are removed from India's forests annually. These products are estimated to be worth US$ 10 billion. In Madhya Pradesh alone, the NTFPs which are primarily collected by tribal women are worth more than Rs 21 billion (US$ 700 million) annually (Planning Commission, 2011).

It is now felt increasingly that management and development of NTFP resources is essential for various reasons. First, forest management focused on the production of NTFPs may be ecologically and economically sustainable provided that extraction rates do not exceed the maximum sustainable yield. Tribal communities have been involved in NTFP utilization for centuries without destroying the resource base. Managing forests for production of NTFPs also implies maintaining biological diversity of both plant and animal species. Second, non-timber forest products are a vital source of livelihood for a large proportion of the poor living in or close to the forest in most tropical countries. NTFP sector alone is able to create about 10 million workdays annually in the country. Other estimates suggest that up to 35 percent of the income of tribal households in India comes from the collection of unprocessed NTFPs. Also, since NTFPs involve a large variety of seasonal products, returns are frequent and relatively continuous. Moreover, local processing of NTFPs can increase off-farm rural employment opportunities. Small-scale forest-based enterprises, many of them based on NTFPs, provide up to 50 percent of income for 20 to 30 percent of the rural labour force in India (Campbell, 1988). With these efforts there is a potential to create large scale employment opportunity thereby, helping in reducing poverty and increasing empowerment of particularly women, tribal and poor people of the poorest and backward districts of the country. Third, in addition to subsistence and income-generating potential, NTFPs also provide food security to large low-income populations, their cattle and other domestic animals. India’s forests yield a large number of diverse non-timber forest products. Estimated annual production of some of the commercially important non-timber forest products is given in Table.4

Table: 4
Estimated Annual Production of Selected Non-Timber

Product	**Annual Production (Metric Tons)**
Wild edible products	101,200
Myrobalans	132,250
Sal (shorearobusta) seeds	709,700
Mahua (Madhucalatifolia) seeds	697,600
Neem (Azadirachtaindica) seeds	115,000
Other seeds	57,500

Essential oils	3,160
Gum (karaya)	15,000
Resin (from pines)	45,000
Katha	5,750
Tans and dyes	222,900
Bamboo	4,716,600
Fibers and flosses	15,000
Beedi leaves	360,000
Lac	30,000

Source: World Bank 2006.

Forests are significantly contributing to the GDP of country. A large segment of rural population is depending on forest resources for their livelihood development. Non-timber forest products contribute significantly in poverty alleviation, sustainable livelihood development and conservation of forest resource (Singh, 2014). There is lack of research studies on sustainable livelihoods development through non-timber forest products at the national level. Moreover, there is paucity of empirical data and literature on role of forest resources in livelihood development and poverty alleviation. The total production of tendu leaves varies between 3.3 lakh tones to 4.5 lakh tones per year with a market value of Rs. 1000 crores per annum. The 3 states producing the bulk of tendu leaves are Chhattisgarh, Madhya Pradesh and Orissa (Table 5).

Table: 5

Annual Production and Value of Tendu Leaves in India

State	**2006-07**		**2009-10**	
	Weight (100 Tones)	**Value (Rs. Crore)**	**Weight (100 Tones)**	**Value (Rs. Crore)**
Arunachal Pradesh	4.43	0.19	1.60	0.10
Andhra Pradesh	271.80	36.36	327.00	54.41
Chhattisgarh	643.80	191.60	927.00	335.30
Gujarat	77.12	3.17	143.01	5.26
Jharkhand	183.60	21.51	340.80	15.26
Karnataka	4.59	0.61	3.42	0.57
Madhya Pradesh	1452.60	373.64	1204.20	264.57
Maharashtra	337.75	25.27	397.94	66.34

Orissa	387.65	247.71	403.07	326.49
Rajasthan	139.80	3.75	189.00	7.84
Uttar Pradesh	173.66	4.81	132.70	3.80
West Bengal	11.64	7.44	9.07	7.35
Total	**3684.01**	**915.87**	**4077.22**	**1087.19**

Source: Indian Council for Forestry Research, Dehradun.

Bamboo is a versatile natural resource and extensively used in cottage industry for making lots of household products besides use in house construction. It has been an important source of income for millions of people for sustaining their livelihood. The major quantity of bamboos is utilized as raw material by paper and pulp industries, for housing, rural and agricultural applications, and in packing industry, etc. Besides forests, bamboos grow in private lands in the homesteads. Total bamboo growing stock is about 169 million tonnes. About 28 per cent of total bamboo area with 66 per cent of growing stock is located in North-East region. The other rich areas in bamboo resources include the states of Madhya Pradesh, Chhattisgarh, Maharashtra, Orissa, Andhra Pradesh and Karnataka (Table 6).

Table: 6

State Wise Bamboo Area in India

States/UTs (year of inventory)	**Bamboo Areas (sq. km.)**
Andhra Pradesh (1968-74)	6598
Arunachal Pradesh (1985-90)	4590
Assam (1988-90)	8213
Bihar (1971-74)	795
Goa, Daman & Diu	249
Gujarat (177-78)	2806
Haryana	42
Himanchal Pradesh (1974-76)	60
Jammu & Kashmir	15
Karnataka (1983-94)	4925
Kerala	517
Madhya Pradesh (1970-86)	18124
Maharashtra	8893
Manipur (1986-88)	3692
Meghalaya (1986-88)	3102

Mizoram (1988-89)	9210
Nagaland (1984-87)	758
Orissa (1976-84)	7822
Punjab	50
Rajasthan (1984-86)	529
Tamil Nadu	3101
Tripura (1989-90)	939
Uttar Pradesh (1981-85)	2010
West Bengal	1751
Andaman & Nicobar Islands	784
Total	**89575**

Source: Planning Commission, Govt. of India, 2003.

Bamboo development has to be market and technology driven. It has been estimated that the combined value of internal and commercial consumption of bamboo in the world is to the tune of US $ 10 Billion which is expected to reach about US $ 20 Billion by 2015. The size of the domestic bamboo economy as of now is Rs. 2043 crore while the market potential is estimated at Rs. 4463 cr. with a projected annual average growth rate to 15-20 percent . The bamboo industry could grow to Rs. 26,000 crore by 2015, which is close to the current size of bamboo industry of China. The potential growth areas to start within 2005 are bamboo shoots Bamboo based Boards. Bamboo flooring boards, Paper and pulp industry, Bamboo furniture Building and construction, Road construction on an assumption that bamboo or bamboo based material will be used on an increasing scale in these activities. In addition, the total size of the agarbatti, pencil, match sticks, ice-cream sticks, venetian blinds and other miscellaneous items may increase by about Rs. 200 crores(Planning Commission, 2003).

Sustainability of Bamboo resources and human economies depends on meeting a number of challenges simultaneously. A great deal of research has shown that successful approaches are more likely when they occur within a frame work of institutional arrangements that provide the rights in developing decision making power to local community and involve the participation of interested stakeholders over long period of time. Forest Policy 1988 and the subsequent government resolution on participatory forest management emphasized the need for people's participation in natural forest management. The policy document asserts that local communities should be motivated to identify themselves with the development and protection of the forest from which they derive benefits. Since Bamboo has very diversified uses, its working has to be manipulated in such a manner that the green bamboo is available to artisans in JFM Committee areas and also for religious purposes. Ripe Bamboo should be available for household purpose. For this purpose should be available is required to improve understanding of patterns of Bamboo use **(**Planning Commission, 2003).

Bamboo is an important cultural feature of many parts of India. Since the beginning of civilization of bamboo has played an important role in daily lives of people in India. Bamboo craft is one of the oldest cottage industries primarily due to versatility, strength, lightness and easy workability of

bamboo with simple hand tools. Bamboo has been put to use for various applications ranging from construction to household utilities and have more than 1000 documented uses including an important industrial use in paper and pulp manufacture. Most other uses have been largely local/traditional, although very important but with very little addition (Table 7). Financial value of most of these uses is difficult to assess since they are non-market based. Moreover, for these uses there is *no regular assessment of demand and supply* and consequently, no focused approach to promote bamboo growing/processing to meet the domestic requirements or to explore their export potential. India, with a much larger bamboo resource has very high potential for development of bamboo products and there is need to harness this potential through result oriented and coordinated strategy for development of bamboo (India, 2004).

Table: 7

Major Uses of Bamboo

Use	Present consumption
Paper pulp	35.0
Housing	20.0
Non-residential	5.0
Rural uses	20.0
Fuel	8.5
Packing, including baskets	5.0
Transport	1.5
Furniture	1.0
Other wood industries	1.0
Others, including ladders, staff, etc	3.0

Source: Planning Commission Government of India, 2004

Total bamboo area in India is about 10 million hectares, having an average annual productivity of 0.33 tons/ha. The estimated bamboo production in the country is around 4.5 million tons. Major industrial use of bamboo has been by pulp and paper mills. However, since the paper industries have switched over to hardwood, bamboo consumption by paper mills has been on decline. Large quantities of bamboo are generally used locally in housing, fishing rods, as props in orchards, and vegetable gardens and in handicrafts sectors.

MEDICINAL AND AROMATIC PLANTATION

Cultivation of medicinal and aromatic plants provide sustainable means of natural sources of high value industrial raw materials for pharmaceuticals, agrichemical, food and cosmetic industries and opens up new possibilities for higher level of gains for farmers. India now covering an area of nearly about 0.4 million hectares are finding a much higher place in international agri-business with an estimated annual growth rate of 10-15 percent.

Medicinal and aromatic plants derive medicines, essential oils and products worth of 72 billion world-wide with the share of 60 billion of medicinal herbal materials. It is estimated that the demand for medicinal plants alone by the year 2050 would be 5 trillion. The domestic market of Indian system of Medicine and Homeopathy is of the order of Rs. 4000 crore of which Ayurveda drug market alone is about Rs. 3500 crore. India's total export earnings from the crude drugs, herbal extracts and finished products stand at meager Rs. 800 crore. It is estimated that India's annual production of medicinal and aromatic plants raw materials may equal about Rs. 6000 crore. The farming area of the medicinal plants is small and scattered with more than 50 percent of the raw material still being harvested from the wild. Thus, paper survey, documentation and harvesting of medicinal and aromatic plants in forest areas may provide enormous opportunities for income and employment generation as well as promoting Indian system of medicines. The degraded forest land can be converted into plantation of medicinal and aromatic plants with community participation and revitalizing soils (ICSHT, 2004).

A medicine grown in the rural backyards helps save money, apart from staving off diseases. A programme of herbal medicinal plantation is being supported by UNDP and Danish International Development Agency for local health traditions in southern states of Kerala, Karnataka, and Tamil Nadu. The forest departments in collaboration with community based organizations have promoted the concept of Garden of healing in Karnataka, Kerala and Tamil Nadu. Now, UNDP and Global Environmental Facility have commissioned the Foundation of Revitalization of local health Tradition, Bangalore to assist in drawing up medicinal plants conservation programme in Arunachal Pradesh, Sikkim, Meghalaya, Uttaranchal, Jammu & Kashmir, Himanchal Pradesh and Chhattisgarh. India's 4635 ethnic communities including 1 million folk healers use around 8000 species of medicinal plants. The growing demand for herbal products in the domestic and global market also makes the use of eco-system. Over 90 per cent of medicinal plants commercially used are harvested from wild in an unsustainable manner. This is one of the reasons of loss of biodiversity. About 1000 species are under various degrees of threat across the different bio-geographical region in the country. India's herbal market size is estimated to be about Rs. 5000 crore and there are enormous potential to increase the size of herbal market in India. There are about 8000+ manufactures of whom, 7000 have sales of less than Rs. 1 crore a year. There is a vast potential for production, distribution and marketing of herbal products in India. The following medicinal and aromatic plants are useful healing the chronic diseases (ICSHT, 2004):

Natural resources that are vital for food, livelihood and environmental security are under threat today. Land water and forest can no longer be used as they have been in the past. Recognizing that land degradation, deforestation and pollution are major environmental concerns that are adversely affecting productivity and socio-economic conditions, suitable measures are needed to effectively addressing these problems. The challenge of conservations and sustainable use of natural resources remain enormous. In fact the developmental action must not be allowed to deplete of our severely environmental." Sustainability is not an option but imperative. For a better world to live in (not just to survive) we need good air, pure water, nutrition food, healthy environment and greenery around us. Without sustainability, environmental deterioration and economic decline will be feeding on each other leading to poverty, pollution, poor health, and political upheaval unrest (Planning Commission, 2001). Sustainable development involves not only the ecological practices that enable meeting the needs of the future generations, but also a change in production and consumption patterns so that resources are being wasted can be saved and re-channeled to meet a healthy environment and wealth.

CONCLUSION

Livelihood security and sustainable development are the major development agenda in the policy and planning of forestry sector development. It has been well realized that agriculture sector cannot absorbed the increasing work force for livelihood generation while industry sector has already shrunk over the period. Thus, the non-farm sector has enormous potential for the employment generation. Forest dependent people may have a crucial role in the conservation and development of the forestry resources as well as conservation and protection of wild animals however, the livelihood security is imperative. Significantly, the biotic pressure and stress on part of the forest dependent people has to be reduced through providing opportunities for livelihood development as well as incorporating economic activities which promote livelihood development for the forest dwellers and farmers nearby the forest areas. It is necessary to develop bamboo-based agro-forestry system based on species suitable available in particular area. Intensive training is also required in order ensuring wider industrial application of bamboo products and promoting bamboo-based handicrafts. Agro-forestry and social-forestry are prime requisites for maintain of ecological balance and augmentation of biomass production in the agriculture system. Today, forestry has a wide spectrum of interfaces and multi-dimensional array of impacts. The situation calls for new and in-depth knowledge about forest resources, their use, their management and conservation, etc. Forest resources and forestlands should be sustained ably managed to meet the social, economic, ecological cultural and spiritual human needs have presented and future generations. The farmers should be encouraged by government and research institutions to take up farm/agro-forestry for higher income generation through evolving technology, extension and credit support packages.

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