



## Forest and NTFPs as a Resource for Livelihoods

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### ABSTRACT

Forest is a unique natural and renewable resource which is important not only for ecological security but also in providing livelihood support to a sizable tribal and other forest dependent population. Forest is also a way of life in terms of socially and culturally and also provides economic sustenance. It meets basic needs like fuelwood, fodder and small timber that are important for them and their livestock. Degradation and depletion of the forest resources are increasing poverty and suffering among the rural people. Therefore it is imperative to rehabilitate degraded forest resources in order to sustain rural livelihoods. This is possible only through devolution of power to the people for the management of forest. There have been several popular movements in India to protect the rights of the local people. With the active support of local organizations people's participation in forest management was initiated and is generally known as Joint Forest Management (JFM) in India. Integrated approach for development of forest dependent communities and natural resource conservation through the Joint Forest Management (JFM) by promoting forest and non-forest livelihoods brings significant attitudinal change in communities. Now it is recognized that participatory management of forests is key to sustainable development for people and forests.

**Keywords** - Natural, Renewable resource, Ecological security, Livelihoods, Forest, Joint Forest Management, Sustainable development

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### INTRODUCTION

India is a developing nation where majority of its population lives in rural areas. In rural economy forests play a very important role. Forests and trees are among the few resources that are available to rural dwellers in many areas. They supply different types of benefits, jobs and incomes often necessary to increase inadequate profits from agriculture produce like food, fuelwood, fodder and building poles for the house and a series of environmental profits without which other activity like agriculture may be not possible. After agriculture, forest sector is the second largest land use.

About 70% of India's rural population depends on fuelwood to meet its domestic energy needs and tribal/local people depend on forest for their subsistence and livelihood in remote forest fringe villages. Forests are main source for livelihood and cash income from fuelwood, non-timber forest products (NTFP) or construction materials and a major population of India's tribal people, the most disadvantaged section of society, subsist from forests.

At all level especially in developing countries forests provide significant social and economic benefits. Economics of people living in forest has traditionally been dominated by subsistence agriculture. However non-timber forest products (NTFPs) play vital role among the tribal people and provide a source of subsistence, income and livelihood security [18, 12]. The broad term "non-timber forest resources" (NTFR) refers to natural resources collected from forests apart from sawn timber. Chamberlain *et al.* [2] provides a definition non-timber forest products are plants, parts of plants, fungi and other biological materials which are harvested from within and on the edges of natural, manipulated or disturbed forests. NTFP may include fungi, moss, lichen, herbs, vines, shrubs or trees [9]. NTFPs like fuel-wood, medicinal plants, wild edible vegetables, house building materials etc. are an integral part of day-to-day livelihood activities especially for tribal people [21].

The harvest of NTFPs remains extensive throughout the world. Harvest NTFPs for a number of purposes including but not limited to household subsistence, maintenance of cultural and familial traditions,

spiritual fulfilment as well as physical and emotional well-being, scientific learning and income people from a wide range of socio-economic, geographical and cultural contexts [14]. Other terms with harvesting include wild-crafting, gathering, collecting and foraging. In industries for different variety of activities NTFPs are used.

### **THE PRESENT PLIGHTS AND IMPORTANCE OF NTFPs**

For local, national and international markets NTFPs provide important products. These markets are growing quickly and progressively [25]. For enhancing sustainable rural development and diversified economic growth, cultural endurance and environmental health have great potential of non-timber resources. NTFPs have highly commercial value whereas rest Few NTFPs have low cash values and hence are used for consumption rather than for sales. NTFPs are available at low cost on common property lands so that they are significant especially for poor. More than half of India's population in rural areas and a large tribal population reliant on forest produce for their sustenance NTFPs play a major role [22].

### **TYPES OF NTFPs**

The important NTFPs of economic value in India can be categorized as following

1. Grasses, bamboos and canes
2. Tans and Dyes
3. Oils
4. Gums and Resins
5. Fibres and Flosses
6. Leaves
7. Drugs, spices and poisons
8. Edible products
9. Animal products

### **ROLE OF NTFPs IN LIVELIHOOD SECURITY**

More than two billion people are dwelling in forest, depending on NTFPs for subsistence, income and livelihood security at global level [24]. NTFPs are considered to be reducing rural poverty, important for sustaining rural livelihoods, facilitating rural economic growth and biodiversity conservation [11]. The developing world, an estimated 80 % of the population uses NWFP (Non-Wood Forest Products) to meet some of their health and nutritional needs [6]. In many developing countries it is an important source of income for the poor. In addition many opportunities for enhanced rural development are linked to NTFP [1]. In an old estimate, potentially around 3000 species of forest products were found to be useful but only 126 have been developed marketability [15]. Around 70 % of forest based export income of the country and 50 % of forest revenues come from NTFPs. Thus it can be depicted that NTFPs form one of the support of income and sustenance for several tribal communities [20, 9, 4, 16]. In India forests are related with socio-economic and cultural life of tribal's. Throughout the country these tribal groups inhabit wide ecological and geo-climatic conditions in diverse concentrations. Tribal livelihood systems vary considerably between various regions as also among the different ethnic groups depending on ecological, historical and cultural factors. These tribal communities mostly occupy the forest regions since time immemorial, living in isolation from the mainstream life, maintaining harmony and a symbiotic relation with nature. The collection of NTFPs by tribals was primarily for meeting their subsistence needs. Over time these NTFPs obtains commercial value resulting from vast trade transactions and income levels because of rising demand. Trade in NTFPs can act as an incentive for forest conservation by providing a source of income from resources that might otherwise appear to have little financial value [5].

### **CONSTRAINTS IN DEVELOPMENT OF NTFPs FOR LIVELIHOOD**

The tribal communities have developed a unique system to make sustainable use of food and biomass for their survival and living on the edge of the forests. Tribal's migrate to urban and semi-urban areas to meet their basic needs in the absence of assured supply of these NTFP particularly food products. No serious efforts are being made to enhance the productivity of these NTFP and ease the supply of these commodities for local communities in spite of such a critical demand for these products. Furthermore in spite of severe shortage of NTFP most of the local communities are reluctant to procure commodities like charcoal, fuel wood and forage from alternate sources because of poor buying power and chronic poverty. With regard to the other two classes of NTFP like aromatics, medicinal herbs, oilseeds and dyes there has been a good demand for various commodities not only in India but from all over the world. Enhancing the cash income of the local population and promoting international trade by the help of systematic

collection, value addition and marketing. However there is a major gap between the demand and supply situation. Although inferior in quality has been fluctuating the demand for these products because of the availability of cheaper alternatives. A large number of middlemen are involved in taking the products to processors and consumers as the NTFP collectors are located in remote areas. In such situation the NTFP collectors neither get a fair price to even cover their labour charges for the collection of the products nor do they receive correct information about the product demand and uses. These problems should be taken into consideration while developing a strategy for promotion of NTFP for providing sustainable livelihood to the local communities.

In spite of huge forest resources and rich production of NTFP most of these products are not optimally utilised by the local communities. In case of non-edible oilseeds like Neem hardly 20% of the total production is collected and utilised while the remaining quantity is wasted. With regard to dyes, aromatics and medicinal plants there has been total neglect about their utilization in general barring a few species which have been over exploited. To develop a strategy to optimise their collection and utilisation and it is therefore necessary to understand the problems of NTFP. The products such as *Emblica officinalis*, *Terminalia bellerica* and *Terminalia chebula* are available in plenty and they have good demand in the local market. Due to poor price realisation and hurdles faced by them and due to adverse government policies however, the tribals are finding it very difficult to collect the available NTFP. Furthermore the collection of these products alone will not be able to provide them sustainable livelihood. BAIF (The Bharatiya Agro Industries Foundation) has initiated the promotion of NTFP in selected locations in Maharashtra (Thane, Nandurbar and Nashik districts) and Gujarat (Valsad and Navsari districts) in India. These districts located in the Western Ghat hill ranges are dominated by different types of tribals. As in other parts of the country these tribals who were mainly dependent on NTFP for their livelihood have also been deprived of their income due to denuding forest resources and poor price realisation for NTFP. BAIF has promoted the establishment of agri-horti-forestry on the degraded lands owned by these tribals while arranging the collection of locally available NTFP as a supplementary activity in the absence of alternative sources of livelihood.

Important source of food from the forest species are fruits, leaves, nuts, gums, mushrooms, roots, tubers etc. For tribals these forest products are important sources of emergency food during scarcity. Throughout the country most of these plants find popular utilization. In their respective seasons the tribals collect these foods and besides their own consumption they sell them in the local markets too. Depending on the availability of resources the range of food used by local communities varies from locality to locality.

### **NTFPs COLLECTION FOR LIVELIHOOD SECURITY IN INDIAN SCENARIO**

Non-Timber Forest Products play a very important role in livelihood of people in and around the forests [19, 23]. Studies in India have revealed that NTFPs provide large inputs to the livelihoods of forest dependent population several of whom have limited non-agricultural income opportunities [3, 7, 8]. About 70 % of the NTFP collection in India takes place in the tribal belt of the country (Mitchell et al. 2003). It would be seen from the literature that the NTFP based small scale enterprises provide up to 50 % of income for 20 to 30 % of the rural labour force whereas 55 % of employment in forestry division is attributed to the division alone [13, 14]. Therefore major source of income and employment for forest dwellers was collection of NTFPs.

### **PRESENT STATUS OF FOREST IN INDIA**

The land area of India totals 328.7 million ha of which 142.5 million ha. (43.3%) is under agriculture, forests cover 76.5 million ha. (23.27%). According to the State of Forest Report [8] the actual forest cover is 63.34 million ha (19.27%) of which 26.13 million ha. are degraded.

Due to the heavy pressure of population on land forest area is being rapidly depleted. Having about 2.5% of world's geographic area India at present is supporting 16% of planet's human population and 18% of cattle population. The forest cover has been reducing both in quality and extent. The degradation is not only shown by crown density decline but also lack of natural regeneration, soil erosion. Between 1950 and 1980 India lost about 4.3 million ha. of forest area for non-forest use like heavy industries, development of agriculture and other developmental process. Complete with this there are serious problems of grazing, encroachment, illegal felling, shifting cultivation and forest fire. With a serious economic implication most of the flora and fauna species are endangered. The depletion of the forest resources has aroused the passion of the rural poor in particular and the general public. As such there have been spontaneous popular movements. For the country's development conservation and protection of forestland has become a top priority.

**NTFPs CONTRIBUTE TO LIVELIHOOD SECURITY**

NTFPs give livelihood benefits at two stages. The first is the role of these products in supporting households to cope in times of adversity manifested as sudden changes in the social, economic or bio-physical environments in which households exist and function. This comprises events such as a death or retrenchment of the head of the household or breadwinner, floods, droughts, frosts or disease leading to crop failure or death of livestock, major economic structural adjustment or unanticipated and great enhances in costs of staple foods and goods. During such times it is common for rural households to turn to NTFPs to tide them over what they perceive is a temporary setback. This may take three forms

1. Species or types of NTFPs not often used by that household e.g. for building purposes rather than the purchase of commercial poles or cement blocks, wooden poles collected from the surroundings.
2. Increased consumption either relatively or absolutely of products already part of their livelihood. Typically this involves substituting purchased commodities with harvested ones e.g. increased use of wild spinaches or a decline in consumption of paraffin in favour of fuelwood.
3. Temporary sale of NTFPs on regional and local markets including within communities and between neighbouring households e.g. roadside fuelwood sellers, reed mat vendors or wood carvers.

The changed or increased use of NTFPs is typically a coping strategy with the products providing a 'safety' or 'emergency' net in these situations. The direct use value of the products used during such times of adversity does not adequately reflect their true value because it does not account for the emergency insurance component of use during these times of hardship. An additional measure of value is required equivalent to the option value assigned by resource economists to natural habitats. In contrast there are the livelihood benefits of the ordinary daily use of NTFPs as an integral aspect of direct household provisioning. The livelihood security aspects are manifest primarily as a direct cost saving to rural households as most have limited access to cash incomes. To meet daily needs for energy, shelter, food and medicine allows scarce cash resources to be used to secure other household needs and to attempt to accumulate the necessary asset base for a more secure livelihood for example, the education of children, investment in agricultural tools or capital for activities that generate income being able to collect and use NTFPs. Such a cost saving would best be reflected by replacement values of the goods that the NTFPs substitute rather than direct use value based on farm gate prices. The relative magnitude of the cost saving is greater for poorer households than for the wealthier by virtue of the reduced incomes and sizes of poor households. Moreover the cost saving has benefits not only at the household level but also the national level. In the provision of energy, food, medicine and shelter are the daily net role of NTFPs to the rural poor alleviates some of the costs that the government would incur had it to provide these services in rural areas. Thus government has a vested interest in ensuring environmental integrity to secure a sustainable supply and use of these resources until it is capable of providing such services.

Additionally the real cash cost of replacing a locally harvested NTFP with an alternative from the nearest urban centre is far higher both for the good and for the transport than the labour opportunity cost. Thus although the local harvesting and consumption may have a negative net annual value people have limited options since the alternative requires ready cash which may not be available and at a cash cost higher than they can harvest an equivalent good locally. Sustainable collection, use and commercialization are the main drivers in the promotion of NTFP's for community development, poverty reduction and livelihood socio- economic improvement in the tribal communities [23].

It is likely however that as forest people broaden their livelihood portfolios certain aspects of aboriginal forest based culture are likely to be lost. In order to protect forests and forest culture it is necessary to identify and promote the regeneration of those plants which provide different types of NTFPs as well as those species which are used primarily for timber production. This will help forest people to maintain their indigenous culture through the harvesting of NTFPs without destroying the resource base. India is a developing country where millions of people are still living at the forest fringe areas and depend on forest products for their livelihoods. The conservation of both forests and forest based culture coupled with the scientific harvesting of NTFPs thus can create an attractive opportunity for resource poor forest dependent villagers. Presently NTFPs are receiving more and more importance as it is becoming clear that their management can help in creating more employment and income generating opportunities to the socio-economically downtrodden forest communities. With the increasing of scientific and sustainable harvesting of NTFPs the poverty can be reduced to some extent. The systematic harvesting of NTFPs will increase employment opportunities among forest dwellers. At the same time it will also reduce their over dependence on timber collection which might be efficient to resolve the problem of dry deciduous forest degradation [10].

The concept of a safety net role of NTFPs needs to differentiate between a 'daily net' and an 'emergency net'. People enter the NTFP trade because of a lack of alternative income earning opportunities,

retrenchment, poverty and the need for cash income. The chance to gather free resources and convert them into saleable products provides an important safety net for many households. For the people involved it is often not a matter of choice but of necessity a coping strategy. It frequently starts as an emergency net and evolves into a permanent livelihood option. Trade may be orientated at local village markets, neighbouring urban markets or tourist markets with seemingly similar returns. Trade in NTFPs is growing both within rural communities and in external regional markets. People are taking advantage of the opportunity this presents under increasingly harsh economic conditions.

The benefits of trading in NTFPs are variable and modest particularly for seasonal resources like marula beer. However these sales can provide cash at important times of the year help ease cash flow problems and contribute to the amelioration of rural poverty. Local level trade in NTFPs does not alleviate poverty substantially for many reasons including a lack of markets, market saturation, low-priced products, resource scarcity and the sheer density of people in the communal areas limiting the numbers that the resource base can support. The cash benefits resulting from trade are variable across households and are directly related to the degree of effort expended. Thus, it may be modest for many for some it is their main livelihood activity and generates incomes well above the poverty line. Although the cash earned may be small for much participation in trade is an important source of self-esteem, pride and independence especially for women.

Under those circumstances, at a macro-level the role and value of the daily net and emergency net needs to be communicated to planners and decision-makers. Whilst appreciated by a few it still has not been recognized in local, provincial nor national policies. The non-governmental sector is involved but largely in promoting markets and skills for NTFP products traded in national and international markets. The daily net receives no attention. Not only does the value need to be reinforced amongst government departments and NGOs but so too the crucial component these products play in the diversification of rural livelihoods. For arable crops and for livestock husbandry but there is no such service for NTFPs. This is required within a broader policy of improved natural resource management that includes all dimensions of land-based livelihoods. Resource assessment and sustainability is a key ingredient. In terms of NTFPs specifically it needs to be recognized that whilst trade can generate cash income for rural households for the majority it does no more than ease rural poverty or acts as an emergency net. But the importance of this should not be ignored nor underestimated nor should the minority of households for whom NTFP trade is their primary livelihood and which keeps them out of poverty be overlooked. The loss of NTFPs to rural households through excessive harvesting, land transformation, land resettlement or rezoning can have dire consequences especially for the very poorest in society.

## CONCLUSION

Sustainable forest management is key to the sustainable rural livelihood. There has to be a harmonious balance between conservation of forests and development of communities through livelihood security. Forest productivity will ensure equity and livelihood for the rural poor. The rural livelihoods must be integrated with development of forests with the involvement of people in the form of village forest committee/ forest protection committee. Once they are involved forest resource cycle will be completed.

Only NTFP based activities would provide livelihood options. The JFM experience is only a decade old. On the basis of this it is strongly recommended that JFM can encourage more and more participatory management practices implying more legitimacy and power to the people. Non-timber forest products (NTFPs) or non- wood forest products (NWFPs) have been considered as minor forest products in many countries. Production and consumption of NTFPs have never appeared as resources of great economics and ecological importance at macro level but contribute a minor share to the national economy in comparison to commercial timber. However at micro level tribal people living in and around forests for centuries have recognized NTFPs as important forests resources. Non-timber forest products refer to all biological materials other than timber which are collected from natural forests for human use. NTFPs may provide local job opportunity to two million people every year and contribute significantly to rural economy as more than half of the products are consumed by the tribal's living in and around the forest area to meet their basic needs. Thus the role of NTFPs is very important in the livelihood security of people living in and around the forest areas. Thus on the one hand the systematic harvesting of NTFPs will increase employment opportunities among forest dwellers and on another hand it may also reduce their over dependence on timber collection which might be efficient to resolve the problem of dry deciduous forest degradation.

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