



Non Wood Forest Products for Rural Livelihood and Sustainable Forestry with special reference to Chhattisgarh, India

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Non-wood forest products or NWFP is one of the most important forest resources that nourish the Indian rural economy. Non-timber forest products (NTFPs) constitute an important source of livelihood for millions of people from forest fringe communities across the world. In India, NTFPs are associated with socio-economic and cultural life of forest dependent communities inhabiting in wide ecological and geo-climatic conditions throughout the country. It is estimated that 275 million poor rural people in India, depend on NTFPs for at least part of their subsistence and cash livelihoods (Pandey, et al., 2016). Food and agricultural organization (FAO) of the United Nations defines NWFP as goods of biological origin other than wood derived from forests, other wooded land and trees outside forests. NWFPs are important in household food security. They are particularly important in reducing the shortages suffered during the hunger periods of the agricultural cycle. In rural India, NWFP is valued as components of social and agricultural identity. However, these use and values vary enormously from one area to the next. NWFPs are derived from a variety of sources such as plants (trees, shrubs, herbs, grasses, palms), animals, (insects, birds, reptiles, large animals), and a range of other sources. Different plant parts (e.g. roots, stems, barks, leaves, flowers, seeds, fruits) often provide different NWFPs at different seasons of the year. Furthermore, NWFPs exhibit considerable variation in their use, with some consumed immediately on harvest (e.g. fruits, fodder, wild meat), other after primary processing (e.g. edible nuts, bamboo and rattans products), and still other proceeding through a series of downstream processing to meet market demands.

Keywords: Non-wood forest products, NWFP, Indian rural economy, forest resources,

Introduction

Non-wood forest products or NWFP is one of the most important forest resources that nourish the Indian rural economy. Non-timber forest products (NTFPs) constitute an important source of livelihood for millions of people from forest fringe communities across the world. In India, NTFPs are associated with socio-economic and cultural life of forest dependent communities inhabiting in wide ecological and geo-climatic conditions throughout the country. It is estimated that 275 million poor rural people in India, depend on NTFPs for at least part of their subsistence and cash livelihoods^[1, 2]. Food and agricultural organization (FAO) of the United Nations defines NWFP as goods of biological origin other than wood derived from forests, other wooded land and trees outside forests. NWFPs are important in household food security. They are particularly important in reducing the shortages suffered during the hunger periods of the agricultural cycle. In rural India, NWFP is valued as components of social and agricultural identity. However, these use and values vary enormously from one area to the

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substance living in an effort to illustrate the values of NWFPs, Presented data on inventory, production and current market value for all commercial tree species occurring in one ha of Amazonian forest, including wood and NWFPs resources^[3].

Table 1: General contributions of forest foods to human nutrition

Type of forest foods	Nutrients available
Fruits and Berries	Vitamins- A,C. protein , etc.
Nuts	Vitamins – A, D, E, fats, etc
Young leaves, herbaceous plants	Vitamins- C, calcium,etc.
Gums and Saps	Vitamin- C, carbohydrates, minerals, beta carotene
Invertebrates (insects, snails)	Vitamin-D, A, B, fats etc.
Vertebrates (fish, birds, mammals)	Vitamin- A, B, D, protein, fats etc.

Source:-Food and nutrition division (FAO 1994)

At a local level, several million households world-wide depend heavily on NWFP for subsistence and/or income. Some 80 percent of the population of the developing world use NWFP for health and nutritional needs. Women from

Tendu leaves

Chhattisgarh is a pioneer State of India, producing the best quality Tendu (Diosporas melonoxylon) leaves. The Tendu leaves are used as Beedi (cheap cigarette) wrappers. The production of Tendu leaves in Chhattisgarh is approximately 16.44 lacs standard bags annually, which is nearly 20% of the total Tendu leaves production of the country. One standard bag of Tendu leaves in Chhattisgarh comprises of 1000 bundles of 50 leaves each. The collection season is from third week of April to last week of May. The collection season starts earlier in the Southern part of the state in comparison to Northern part of the state.

poor households are generally those who rely more on NWFP for household use and NWFP also provide raw materials for large scale industrial processing. Some NWFP are also important export commodities. At present, at least 150 NWFP are significant in terms of international trade, including honey, gum arabic, rattan, bamboo, cork, nuts, mushrooms, resins, essential oils, and plant and animal parts for pharmaceutical products. NWFP have also attracted considerable global interest in recent years due to the increasing recognition of their contribution to environmental objectives, including the conservation of biological diversity. It is difficult to estimate the contribution of NWFPs national or regional economies as there is a lack of broad-based systems for tracking the combined value of the hundreds of products that make up various NWFP industries.

Minor Forest Produce in India

1. Edible plant products
2. Medicinal plants
3. Aromatic plants
4. Gums and resin exuding plants
5. Dyes and color yielding plants
6. Fiber and floss yielding plants
7. Jam yielding plants
8. Bamboos
9. Canes
10. Fodder & forage
11. Fuelwood
12. Charcoal briquette
13. Leaves for plates

The processing of Tendu leaves is depicted in (Fig. 1.) is from a Chhattisgarh village located in Surguja district- one of the tribal dominated areas of the state. Local villagers across India earn the major share of their livelihood through raising and selling off the NWFPs. It forms an important backbone of rural industry.

Minor Forest Produce are the one for which the trade monopoly lies with the state government or its authorized agent CG MFP Federation. The collection and sale of nationalized forest produce is done by C.G MFP Federation

only. The Federation sells the collected produce through tenders and auctions on behalf of the state govt. The state monopoly has been created to ensure payment of appropriate price to the rural collectors of forest produce. *Tendu* leaves, Sal seed, *Harra* and Gums (grade I & II) are the nationalized non-wood forest produce in the state.

Chhattisgarh Tendu Leaves (*Vyapar Viniyaman*) *Adhiniyam*, 1964 and the rules made there under regulate the trade of tendu leaves and Chhattisgarh *Vanopaj* (*Vyapar Viniyaman*) *Adhiniyam*, 1969 and the rules made there under regulate trade of Sal seed, *Harra* and Gums (grade I & II).

The Chhattisgarh Govt. took a major policy decision in 2004 to sell the leaves in advance to the purchaser that instead of selling go-downed leaves. However the collection of leaves and the payment of the collection wages to the pluckers will be done by the primary co-operative society only. Green

leaves will be handed over at the collection centre to the purchaser appointed in advance of collection. The purchaser will treat the leaves at collection centre, transport and store in his godowns or the godowns of Forest Department/Federation. The purchaser will make the payment of the purchase price in four equal installments. After implementation of this policy, in the first year 2004, Federation disposed 73% of total quantity in advance. In the collection year 2007, 2009, 2010, 2011 and 2012, 100% quantity has been sold in advance to the purchasers. The years 2014, 2015, 2016 and 2017 also saw good growth in selling percentages across the state. More over the average sale rates are also increasing every year. In nut shell the change in the trade of Tendu leaf policy has brought good results.

The NTFPs use is characterized by a diversity of institutional arrangements regarding access to the resources and markets at both local and national level. There is, however, great variation in the extent to which forest products are used from area to area and even between households within a community. Because of this variation, it is difficult to abstract generalizations about NTFPs use. The NTFPs can be classified into different categories, based on the purpose of use (for example, as food, fuel, medicine, house hold utensils and farm implements); the part of plants harvested (leaf, fruit, stem and roots) and level of use (self-supporting and commercial). Once viewed as the products of poor unlike that of the timber for the rich, NTFPs provide a green social security to billions of people in the form of food supplements, traditional medicines, fuel and fodder, low-cost building materials and source of employment and income generation. In some cases, the revenues earned from NTFPs are the only source of cash income, which increases the dependency of people on commercially interesting NTFPs resources^[4, 5].

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In Indian context, NTFPs are associated with socio-economic and cultural life of forest dependent communities inhabiting in wide ecological and geo-climatic conditions in different concentrations throughout the country^{24,25}. Tribal livelihood systems vary considerably between different regions as also among the various ethnic groups, depending on ecological, historical and cultural factors. These tribal communities largely occupy the forest regions since time immemorial, living in isolation from the mainstream life, maintaining harmony and a symbiotic relation with nature. The NTFPs also serve as a vital livelihood safety net in times of hardship. Collection of NTFPs by communities primarily for meeting their subsistence needs it varies from state to state ranging from 5.4-55% in the country. In Manipur alone, a North-Eastern state of India, nearly 90% of the population depends on forest products as a major source and some 250000 women are employed in collecting forest products. In Bastar district of Chhattisgarh, about 75% of forest dependent people supplement their food by tubers, flowers and fruits all the year round. As per Government of India report, at least 35 million man-days of employment were generated in the NTFPs trading which includes collection and processing of economically valuable NTFPs species. Studies have revealed that NTFPs provide substantial inputs to the livelihoods of forest dependent population, many of whom have limited non-agricultural income opportunities. It is estimated that 275 million poor rural people in India i.e., 27% of the total population, depend on NTFPs for at least part of their subsistence and cash livelihoods. This dependency is particularly intense for half of India's 89 million tribal people, the most disadvantaged section of society, who live in forest fringe areas. About 70% of the NTFP collection in India takes place in the tribal belt of the country, whereas, 55% of employment in forestry sector is attributed to NTFP sector. While NTFP collection is a major source of income and employment for forest dwellers, it holds multi-fold impact on economy through downstream processing and trading activities²⁷. However, tenure security, lack of processing skills and narrow market access are the limiting factors restraining the generation of greater benefits from these resources. Nevertheless, on account of upsurge in demand for natural products, NTFPs acquired huge commercial value in trade and industries. 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. Moreover, in this era of the globalization, the

marketing and pricing of the NTFPs are being determined as never before, by millions of unseen hands, from those of forest collectors to that of food and drug companies sitting in faraway places^[5]. In Chhattisgarh, where 11,185 villages out of a total of 19,720 villages are forest fringed, the importance of NTFPs in the livelihood security of the rural population has led the state government to declare seven NTFPs such as tendu leaves, sal seed, *harra*, gum (khair, dhawra, kullu and babool) as nationalized and establish the CGMFP Federation with an objective to promote trade and development of these minor forest produces (MFPs) in the interest of MFP collectors, mostly tribals. The remaining other MFPs were left free for trade because their distribution and production varied with respect to time and space. As a result, villagers would get assured minimum prices for nationalized NTFPs, but low collection prices and often exploitation by middlemen for the non-nationalized NTFPs due to inadequate market facility development in the remote rural areas. The tribal population of the State is 78.22 lakhs, which is 30.62 per cent of total population (Anonymous, 2011). However, the sectors not free from several complications as observed during our study.

The following issues were identified during our present investigation of selected study sites of Surguja District in Chhattisgarh:

- Lack of market information on price, quality and quantity demanded, market to sell the product, and the market chain is majorly lacking in our study area.
- Limited species-specific information such as availability, distribution, productivity, and regeneration potentials,
- Lack of infrastructure for storage, value addition and grading of products.
- Threats to NWFPs from over-grazing and agricultural pressures.
- Lack of clear policy on collection, trade permits and taxation, and
- Lack of capacity building with the communities for the better management of NWFPs.
- Lack of adequate knowledge about the use potential of NWFPs
- Mass scale deforestation and unsustainable harvesting is also taking a major toll on NWFP cultivation on a mass scale.

The results comprehensively indicate that NTFP is an alternative source of income generation for forest dependent communities and do ensure sustainability in annual income generation for the families. However, existing problems are acting as major roadblocks in realizing the holistic potential of this sector in Chhattisgarh. It is also to be mentioned that the scope of NTFP development is immense and its market share is to be increased in coming times in Chhattisgarh. It is needless to say that changing climatic scenario, agricultural variations, growth disparities in economy and livelihood

development is taking its toll on the poorest of communities inhabiting across the world. It is high time that alternative income sources are to be generated to ensure a balance in family income generation and in-turn on food security.

NTFP can play a pivotal role in ensuring such collateral development, if proper training on NTFP collection and marketing is taken care of by local governments. Chhattisgarh Government is already playing a leadership role to ensure such sustainability among majority of people; mostly tribal populations and forest fringe communities. Most NWFP research is site specific and sectoral, thus reducing its potential value for policy analysis and development actions. The main challenge for future research is to develop general frameworks within which to structure dispersed studies and to transform them into useful policy- and actionguiding instruments^[6]. Our current study takes the responsibility of showing an effective roadmap in such crucial scenario; thus acting as a blueprint for both academicians and policymakers in understanding the role of NTFP as an alternative income source among the communities living in the region.

References:

- [1]. Pandey, A. K., Tripathi, Y. C., Kumar, A. (2016). Non Timber Forest Products (NTFPs) for Sustained Livelihood: Challenges and Strategies. *Research Journal of Forestry*. 10(1): 1-7. DOI: 10.3923/rjf.2016.1.7.
- [2]. FAO.(1994). Bamboo in Asia and the Pacific. *Proc. 4th international bamboo workshop on bamboo in Asia - Pacific Region*, held Chiangmai, Thailand. Bangkok, FAO-RAPA.
- [3]. Painkra, M., Dutta, J. and Ranga, M.M. (2017). Status Survey of Non Wood Forest Products in Surguja district of Chhattisgarh: India. *eJAFE*. Vol 5(2): 20-27.
- [4]. Shackleton R.T., Matre, D. C. L., Wilgen, B. W. V., Richardson D.M. (2015). Use of non-timber forest products from invasive alien *Prosopis* species (mesquite) and native trees in South Africa: implications for management. Vol2:16
- [5]. Ruiz Perez, M. (1995). A conceptual framework for CIFOR's research on non-wood forest products. CIFOR Working Paper no. 6. 18p. DOI: 10.17528/cifor/000066.
- [6]. **Weblink:** <https://www.cgmfpfed.org/new/>

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