

## **ENHANCEMENT OF LIVELIHOOD ACTIVITIES THROUGH NON-TIMBER FOREST PRODUCTS: A STUDY IN JHARKHAND'S RANCHI AND SIMDEGA DISTRICTS**

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Non Timber Forest Produces (NTFPs) provide about 40 percent of total official forest revenues and 55 percent of forest-based employment in India and thereby act as a critical component for sustenance (Tewari & Campbell, 1995). Although Jharkhand is having a rich agricultural resource base its rural people still search for alternative livelihood opportunities. For smallholders, agriculture is passing through a difficult phase due to the increasing frequency of unseasonal and extreme weather events creating difficulties in managing risk, thereby leading to livelihood insecurity. NTFPs act as a subsidiary source of income for rural dwellers. This paper examines the collection, processing and marketing of NTFPs, and attempts to analyze the differences in rates obtained and the number of people involved in the NTFP business. Under the supervision of the first author, the second author undertook the empirical study in two of Jharkhand's districts using standard quantitative and qualitative social research methods and techniques. The findings reveal that rural women actively participate in carrying out various NTFP practices, and that there is a need for more awareness generating interventions among the rural people. Various gaps/problems have been identified to highlight potential remedial measures.

### **Introduction**

Non Timber Forest Products (NTFPs) is a term first coined by de Beer and McDermott (1989) in a groundbreaking publication on the economic value of NTFPs in South East Asia (Belcher, 2003). Non Timber Forest Produce includes "all biological materials other than timber, which are extracted from forests for human use" (de Beer & McDermott, 1989 as cited in Ahenkan & Boon, 2011, p. 3). Earlier, NTFP was termed as Minor Forest Produce (MFP). It is clear that NTFP collection was in earlier times of great importance to the forest dweller's economy. But later, due to deforestation, degradation and commercialisation, people were deprived of the produce on which they were dependent for their survival (Fernandes, Viegas, Menon, & Chandy, 1985). In order to correct the historic injustice done to the forest dwelling communities, the Forest Rights Act, 2006 was enacted which gives the people residing in villages total ownership

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rights over Non-Timber Forest Products, side by side with community rights to their forest (Bandi, 2015). As of now, NTFPs are drawing attention as a supplementary livelihood and means of income generation for communities living in and around forests. As attitudes regarding NTFPs improve at a rapid rate, the demand for NTFPs also grows (Rakshit, 2007). NTFPs play a key role in the life and economy of forest dwellers, fulfilling many needs like those of food, fodder, fibre, general household, medicine, ornamental, religious and aesthetic (Vidhyarthi & Gupta, 2001).

In India, out of the total land area of 329 million ha, only 77 million ha (22%) are classified as forests as against recommended forest coverage of 33%. Around 50 percent of forest revenues and 70 percent of forest based export income of the country comes from NTFPs (Tejaswi, 2008, p. 2). Twenty years ago, NTFPs were estimated to provide about 40 percent of India's total official forest revenues and 55 percent of forest-based employment. Nearly 500 million people living in and around forests in India were said to rely on NTFPs as a critical component of their sustenance (World Resources Institute, 1990, as cited in Tewari & Campbell, 1995). More recent estimates of the number of forest dwellers who depend on NTFPs for sustenance and as a supplement to their income range from 50 million (Tejaswi, 2008), to nearly 100 million (Panda, Mishra, & Thakur, 2010).

### **NTFPs in Jharkhand**

Jharkhand (*Jhar* = forest; *khand* = region) has a rich natural resource base. Forests play a central role in Jharkhand's social, cultural, economic and political systems. Livelihoods based upon the forest revolve around production, collection, processing and utilization/selling of various NTFPs throughout the year, coupled with seasonal subsistence agriculture in the forest fringe areas (Suryakumari, n. d.). Thus interventions to enhance livelihood activities for any of these communities has to begin with a thorough understanding of the types, amounts, availability and processing, storage and marketing linkages of the major NTFPs. Moreover, as the same NTFP might have different issues/constraints and market dynamics in different regions, it is important to analyse NTFP related activities not only at the national, state and regional level, but also at the micro-level, i.e. at community/village/cluster levels (Gharai & Chakrabarty, 2009).

In Jharkhand, the first government regulation in NTFP trade was the Bihar Timber and other Forest Produce Transit Rules, 1973. These Rules emphasized the fact that no person could export or import timber, firewood, charcoal, *kattha* (widely consumed as an

applicant to *paan*, there are different varieties of this tree such as *Acacia Sundra*, *Acacia Catechuoides* and *Acacia Catechu* and other specified NTFPs, without a written permit issued by a competent Forest Officer containing prescribed particulars (Banajata, n. d.). This regulation laid down the rules for the transportation of various NTFPs including the documents required to transport the products. It also talked about the various permits required for the transportation of NTFPs from godown to local market or out of state, or from forest to godown, etc. The policies on NTFPs management and trade in Jharkhand also gave a number of rights and concessions to forest dwellers to access their forest resources (Banajata, n. d.).

The forest resources play a vital role in the livelihoods of the rural people through NTFP based self-employment. NTFPs like sal leaf, lac, fuel wood, fodder, *neem* tooth brush, *mahua* flower, *chironji*, mango, *mahua* seed, tamarind, *ber*, *jamun*, bamboo corn, *kachnar* flower, *koinar* tender leaf, *kusum* seed, *chiraita*, *toont*, *tendu* fruit, jackfruit are an integral part of day-to-day livelihood activities and traditional lifestyles. There is enormous scope to improve livelihoods through proper storage and value addition to NTFPs, domestication and commercialization of NTFPs, refinement and an organized marketing system, indigenous technologies, institutional support in training and skill development, appropriate extension and communication networks, and exploring new forest resources based livelihood avenues through wood and NTFPs based secondary employments (Islam, Quli, Rai, & Sofi, 2013).

A study on NTFPs by Islam, Quli, Rai, and Sofi (2013), in Bundu block of Ranchi district, documents the livelihood contributions of forest resources to tribal communities. The average size of forest based direct paid employment among the sample population was 20 man-days per household per annum and the mean annual income earned from these activities was 2,200 Rupees per household. The NTFP related activities in the forest fringe areas vary from household to villages. Islam, Quli, Rai, and Sofi (2013) reveal that in the sampled villages the percentage of households involved in collection of NTFPs ranged from two percent to 100 percent, whereas the percentage of households involved in NTFPs marketing varied from two percent to 80 percent. NTFPs varied in terms of abundance depending upon the season and moreover, it was observed that collection of these NTFPs varied with the seasonal occupation of the local people. The overall income found among the surveyed population was about 7,000 Rupees per annum, while direct/secondary/self employment was found to be 108 man-days per household per annum. Agriculture complementing the livelihood activities of the people constituted a major share (36 percent) of total household annual income, while

forest resources provided 25 percent, labour 10 percent, livestock 9 percent, business/shop 9 percent, services 7 percent, and others at 5 percent (Islam, Rai, & Sofi, 2013).

Both Bero block of Ranchi and Thethaitangar block of Simdega have vast natural resources, endowed with minerals, forests and water bodies, and have rich sources of NTFPs. All the three sectors namely government, non government (NGO) and corporations provide interventions through various schemes and programmes for bringing a change in terms of the various practices related to NTFP collection and livelihood promotion among the forest and fringe dwellers. A study on NTFP related livelihood dependency in Simdega district of Jharkhand revealed that the four major NTFPs of this area were *mahua*, lac, *karanj* and *chironjee*. On an average, 24 percent of total household income in the villages comes from collection, value addition and sale of NTFPs (Gharai & Chakrabarti, 2009). Bero block on the other hand comprises almost entirely of poor tribal people for whom agriculture is a major provider of sustenance and income. In the 1960s, a local leader, Simon Oraon, set a movement against forest degradation in motion. At a meeting attended by the people of 20 neighbouring villages, it was decided that the village of Hariharpur-Jamtoli would form three local forest protection committees – Khaksitoli, Jamtoli and Berotoli. The self-initiated committees involved themselves in other activities too, like building of roads and irrigation structures. The socio-economic condition of villagers improved with an increase in the availability of NTFPs (Bhattacharya & Mitra, 2002).

### **Objectives**

The present study is an attempt to understand the processes, achievements and challenges in bringing about changes in the livelihoods of the rural poor through NTFPs. The review of literature suggests the need for an holistic understanding of the dynamics of forest resources and their contribution to sustainable livelihoods. The objectives of this study are to explore the collection and processing of NTFPs; to study the productivity and profitability of NTFPs in Bero block and Thethaitangar block of Ranchi and Simdega districts respectively; and, to identify the gaps/problems in the collection, production and marketing processes, to suggest remedial measures.

### **Research Methodology**

Sampling was done in four stages. In the first stage one block in both Ranchi and Simdega was selected purposively i.e. Bero and Thethaitangar respectively. In the second stage three panchayats in

each of the blocks were selected randomly. In the third stage eight villages in Bero and six in Thetaitangar were taken as the study's sample villages. The villages in Bero block were Jariya, Katharmali, Muramu, Haranji, Hutar, Bertoli, Nehalu and J. J. Toli, while the villages in Thetaitangar were Thetaitangar, Alsanga, Traboga, Kurumdegi, Charmunda and Gamharjharria. In the fourth stage a total of 125 respondents were selected, including 65 respondents from Bero and 60 respondents from Thetaitangar.

Under the supervision of the first author, fieldwork was conducted in the 14 villages by the second author. Qualitative and quantitative data were collected from both primary and secondary sources. An interview schedule was prepared to gather information on the production, processing, marketing and the rates of various NTFPs. Other methods such as case study (14 in number - one from each sampled village), observation, and focussed group discussion (FGD) were also used. The data was used for the second author's dissertation, of which this article discusses just some of the findings.

## Results

The National Rural Livelihood Mission (NRLM) of the Ministry of Rural Development acknowledges the need for a special intervention to promote NTFP collectives to increase the income of tribal NTFP collectors (GOI, 2015). In Thetaitangar block, data was collected for 60 households for a one-year period to gauge the number of individuals engaged with NTFPs collection. Approximately 32 of 60 respondents (53 percent) were involved in *lac* cultivation throughout the year, i.e. June 2014 – May 2015. The host plant for *lac* such as *kusum*, *palas*, *ber*, *simialata* are in abundance so the women folk engage themselves more in *lac* cultivation as compared to other NTFPs. Of the 60 respondents, the number collecting and processing *mahua* and *chiranji* (tiny almond flavoured dried seeds of a bush called *Buchanania lanzan*) were 28 (47 percent) and 15 (25 percent), respectively, for just 2-3 months of the year.

Data was collected from the same 60 households from Thetaitangar to compare production of NTFPs in the present with that of three years ago. NTFP collection/production was found to be less in the past as compared to the present. Production of NTFPs, especially *lac* whose total production by the sample households has shown a jump from 1200 kg to 2200 kg, has increased and is carried out by maximum villagers due to its high demand in the market. Production of *mahua* has slightly increased from about 2900 kg to 3300 kg, and *chiranjee* shows an increment from 600 kg to 1100 kg. Previously, the majority of farmers despite having resources did not

have an idea regarding the various usages of NTFPs. Interventions by various NGOs and government agencies have raised the awareness level of the people, resulting in increased production.

The rate of various NTFP products has fluctuated over the three year period. The price was higher three years ago for both lac and *chiranjee* as compared to the current price. Lac fetched a rate of 230 Rupees/kg in 2011-12, as compared to 150 Rupees/kg in 2014-15; whereas *chiranjee* fetched a rate of 120 Rupees/kg as compared to just 60 Rupees/kg in 2014-15. Only *mahua*'s rate has increased over this period, from 15 to 25 Rupees/kg. The rates of NTFPs are influenced by international prices according to their high or low export value. This results in the fluctuation of market rates. Moreover, as middlemen play an important role in marketing of the NTFPs there is a lot of corruption and exploitation.

NTFPs act as an important component of income generation for the village, supplementing the basic income. As we have seen in the study conducted by Gharai and Chakraborty (2009), NTFPs serve to improve the living standards of rural dwellers, especially in Thetaitangar block of Simdega, where survey data shows 24% of total household income comes from collection, value addition and sale of NTFPs. The study findings reveal that there is a huge scope for NTFPs in the forest fringe areas in Ranchi and Simdega districts. Income generation can be supplemented through the preparation of various value added products from the NTFPs, which would enhance the standard of living for the rural people. This is in congruence with the findings of the study conducted in Bero where various institutional arrangements were made for the protection of local forests (Bhattacharya & Mitra, 2002).

This study found that after several awareness generation programmes and different training sessions given by various non-governmental organisations, the local people of Bero and Thetaitangar increased their production of NTFPs. Products from lac cultivation and *mahua* production are now on demand. Moreover, *kendu* leaves are used for the preparation of plates and bowls. Women in Thetaitangar block of Simdega busy themselves in the preparation of such leaf utensils, which are used during celebrations in the village. Some of the women sell these in the local *haats* (markets) and *mandis* (whole sale markets). However, these opportunities have not been successfully explored due to a lack of government initiatives and other facilities of market linkages. Therefore, strong attention needs to be given to the NTFP sector by building community institutions of NTFP collectors, thereby creating social capital for a new business model around NTFP including the development of market linkages.

The area of study has an immense potential for lac cultivation due to the natural availability of host plants like *palas*, *ber*, and *kusum*. In recent years cultivation of *lac* was affected due to drought, pest attack and non-availability of *lac* plant. After various awareness generation activities, a large number of people are now encouraged to improve the production of these NTFPs. However some women find it difficult to procure lac from the trees such as *kusum* and *ber* because of the height of the trees. For drudgery reduction of these women, trees that are short in height such as *simialata* can be planted to carry out lac cultivation.

### Case Study 1

29-year old Bimla Toppo lives in Hutar village of Bero block in Ranchi. She lives in a joint family consisting of her father-in-law Bhukha Bhagat, mother-in-law Eitwali Bhagat, husband Sukhdev Bhagat and a son Shubham. The main occupation of the family revolves around agriculture. Her husband who is a 3<sup>rd</sup> standard pass is engaged in wheat and rice production. Bimla Toppo is educated up to 5<sup>th</sup> standard and for this reason was elected as book-keeper in a self help group (SHG) named *Chala Mahila Kisan Samuh*. As an important member of the SHG, she has attended several meetings given by different non-government and Corporate Social Responsibility (CSR) organizations.

Bimla has attended several training on SRI (System of Rice Intensification), SWI (System of Wheat Intensification), SMI (System of Millet Intensification), Pulse Intensification, Vermin compost, *lac* and *madua* cultivation, delivered by experienced resource persons of different organizations. In this way she came to know about the concept of Non Timber Forest Products (NTFPs) and the different value added products that can be generated from them. According to Bimla, NTFPs act as a supplementary source of income for their family. She is motivated by the training on the advance techniques of cultivating NTFPs and attended them all. For exposure visits she went to different areas including Ranchi and Gumla.

Bimla is now cultivating lac and *mahua* using modern techniques. For lac cultivation she planted a small number of the short *simialata* plants so that it is easy for her to fetch the lac. Last year her lac production was 4kg, which she sold in the nearby market of Bero at 200 Rupees per kg. She keeps a note to understand how the price of the lac fluctuates depending on the market demand. On the other hand, using different advanced techniques her *madua* production rose to 180 kg as compared to a previous

output of just 60 kg. She explained with great satisfaction that her input requirement of seed for *mahua* has also reduced. With an input of just 2 kg she managed to obtain a yield of 180 kg. However in the early days even with an input of 12-13 kg, production was low.

Bimla is happy that the NTFPs have successfully helped her to improve her family's standard of living. In the future she wants to receive training on the preparation of various value added products such as jam, pickle, and squash from *ber* and mango. Bimla Toppo now actively cultivates lac and is also motivating other members of the village to do the same.

## Case Study 2

Due to inaccessible and under-developed market linkages, despite the vast availability of NTFP resources in Bero block, the majority is still untapped. 26-years old Etwa Lohrain is a resident of Bertoli village. He is engaged in the seasonal production of paddy and wheat. Having a little knowledge about the NTFP sector, he provided information regarding the under-utilization and wastage of *ber* fruit in his village. A large number of *ber* trees, he says, either dry up or are cut down for wood purposes. This lack of awareness leads to the wastage of the *ber* fruits, which could serve as an important source for the preparation of various NTFPs. Only a few families in the village who possess their own trees sell the *ber* fruit in dried form in tin boxes each having a capacity of 15 litres. The cost per tin box is estimated to be only 60 Rupees whereas ripened *ber* is sold at 10 Rupees per kg and hence the income from the raw *ber* is quite low. This is mainly due to under-developed market linkages. People of the village do not have access to big supermarkets or even the weekly markets at the nearby block. They sell their products only in the nearby *mandis* and *haats*. Etwa also mentioned that the presence of several middlemen tends to decrease the price of fruit. Therefore, despite having huge resources, Etwa and his villagers are unable to utilize these resources to the maximum level.

The wife of Etwa Lohrain, 20-year old Usha Devi, made a proposal that if the women folk of the village could receive training on the preparation of various value added products of *ber*, such as pickles, jam or squash, then the fruit would help in supplementing their income. Packaging and marketing of these products would maximize their profit generation and hence minimize the interventions of middlemen.



## Discussion

Both of the case studies show that there is a vast scope for NTFPs to improve the standard of living of the rural people. NTFPs are a readily available natural resource, and thus contribute by increasing income levels with minimum levels of input. Sustainable use of these forest resources will help in generating employment opportunities thereby acting as a mode of self-sustenance.

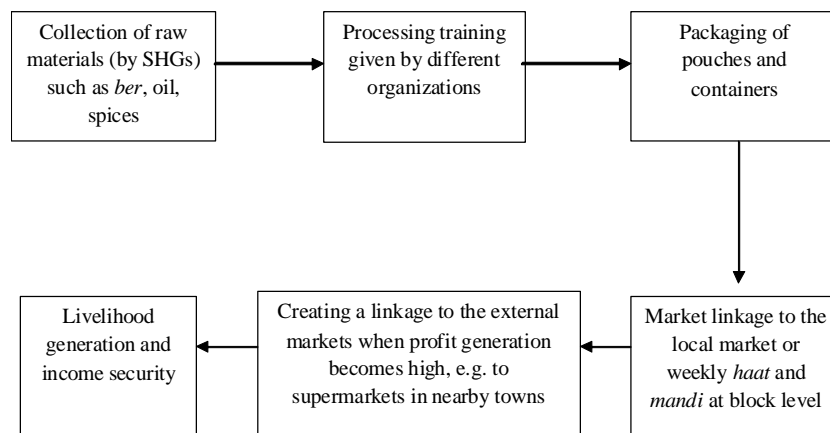
Due to various awareness generation activities, women's participation in NTFPs collection and processing has marginally increased. As a result, their subsidiary income has increased contributing to their food and nutrition security. The women of Bero block show a keen interest in preparing various value addition edibles such as jam and pickles from various non-timber forest products. To this end they requested their need for trainings on such preparations. Simdega district has a dense forest cover than Ranchi, so NTFP collection assumes more importance in the lives of its forest fringe communities. However, Simdega's people face the problem of improper market linkage facilities. Intermediaries play a major role, which results in price fluctuation of various NTFP products and low profit for the NTFP collectors.

In all the fourteen villages visited during the study, various trainings had been given on the NTFP sector as previously, awareness levels regarding value addition techniques among NTFP collectors was quite low. The only product that had been in large demand was liquor from the *mahua* flower, which is a popular and well-known product in Jharkhand.

Generally, NTFPs are collected and sold by women when in season. Villagers have traditionally put little effort in to value addition or storage of the NTFPs for future use or sale. Moreover, due to a lack of awareness, most of the NTFPs collected are consumed within the household or are exchanged (bartered) for other goods within the neighbouring villages. Data collected during fieldwork reveals that the commercialization of such products is not in tune with the existing cultural orientation of the communities studied. The study conducted by Gharai and Chakrabarti (2009) finds the same. Field data shows that for earning their livelihoods, villagers generally rely on agriculture and agriculture related activities, and seasonal labour and migration to regional industrial areas for work. In the study area, NTFP collection was perceived more as a cultural need and for supplementing income during the product's peak seasons. The villagers perceived that the contributing factors for their lack of interest in taking a leap into the business of NTFP, relate to transportation of NTFPs, price fixing by small traders and

businessmen, and lack of facilities for storage and processing. Therefore, the above issues should be taken into consideration during the planning and formulation of any NTFP related interventions.

In the case of Bertoli, as discussed in the second case study, a mechanism for a business model can be developed starting from the collection of raw *ber* to marketing the finished product. This will help in supplementing basic incomes or can act as a primary source of income. This flow chart depicts the enhancement of livelihood activities through NTFPs:



### Conclusion

NTFPs such as *mahua*, *chiranjee*, *kendu* leaves, and lac generate a good source of income but do not require large capital. Promotion of scientific NTFP cultivation could improve this source of income generation for villagers. There is a vast scope for value addition in both the blocks, where *lac* and *mahua* are generated in large quantity. Value added food products like jam, jelly, and pickle from *karanj* can add new and delicious food items to food baskets, which would be beneficial for growing children and older persons due to its organic nature and palatability. These value added products will not only act as good quality food products but will also provide employment opportunities and income generation. Due to a lack of knowledge regarding improved collection practices and value addition, primary collectors are currently unable to earn much from NTFPs.

Therefore, revitalization of the process of forming new collectives/groups or strengthening existing ones can be pursued. Producers' companies or cooperatives aggregating their produces and developing market linkages with local and external markets thereby creating suitable value chains should be promoted.

Non-timber forest products must be used in a sustainable and systematic way. Capacity development of village-level/based organizations to build their understanding of the economic value of NTFPs should be attempted. The government should encourage local storage and processing by the forest dwellers themselves, and directly bring large buyers in touch with the gatherers, in order to reduce the layers of intermediaries (Saxena, 2003). In this way, NTFPs could serve to increase the income of villagers, which would help ensure their livelihood security.

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