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SUSTAINING THE NON-TIMBER FOREST PRODUCTS (NTFPs) BASED RURAL LIVELIHOODS OF TRIBALS IN JHARKHAND: ISSUES AND CHALLENGES

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In much of Jharkhand, forests play a central role in economic, cultural and socio-political systems. The entire lives and livelihoods of many of the state's people revolve around forests and forestry. Non-Timber Forest Products (NTFPs) play an important role in supporting rural livelihoods and food security in Jharkhand. The present study tries to explore the spectrum of rural livelihood contributions of Non-Timber Forest Product (NTFP) through a sample of 50 respondents randomly selected from two villages in Bishunpur block, Gumla district. The main objective is to assess and analyse the contribution of NTFPs to rural livelihoods for both subsistence and commercial uses, and to identify factors influencing the level of engagement of households. The study is based on empirical fieldwork using both quantitative and qualitative data. A structured interview schedule was administered to the respondents. Comparing income and employment we find that all households collect NTFPs irrespective of their income contribution; but income contribution from crop cultivation is higher than that from NTFPs. To make NTFPs collection by tribals sustainable various issues and challenges need to be addressed.

Introduction

Forest sustains forest dwellers and maintains ecological and environmental equilibrium. Jana (2008) described how the forest is intimately connected with the culture and life of rural people and plays a vital role in their economy. Forest produce i.e., Non-Timber Forest Products (NTFPs) collection and marketing is a traditional and cultural activity in many regions of the world. People who live in reasonably remote areas traditionally depend on local forest products because they are more easily available and inexpensive. Forest supplies wood, poles and bamboo to rural people for building of houses and construction of plough etc. Various seeds, roots, flowers, fruits, mushrooms, etc. are collected by forest dwellers to supplement their meagre food supply.

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The economic significance of NTFPs lays in the fact that they are found in rural areas inhabited by tribal or indigenous peoples. The majority of tribal people, known as Adivasis in India, and classified as Scheduled Tribes by the Government of India, lead a hard life. Their tough physique suits the rugged terrain they inhabit, and forests have been their home for generations. The tribal communities could survive thousands of years with reasonable standard of health mainly because forests provided them with nutritious food, clean water, shelter, clothes, medicines and employment. Non-Timber Forest Products (NTFPs) play a vital role for India's tribal people. Shaanker et al. (2004) estimated that in India alone over 50 million people are dependent on NTFPs for their subsistence and cash livelihoods, which they earn from fuel wood, fodder, poles and the sale of a range of NTFPs. NTFPs can also be relied upon during drought and other adverse climatic conditions. In fact, according to the National Commission on Agriculture, various NTFPs have the potential to bring about an economic revolution in the lives of the tribal people. NTFPs contribute about 20% to 40% to the annual income of tribal people who are socially and economically deprived and having very less landholding. The majority of these NTFPs are collected and sold by women (Planning Commission, 2011).

Tribal people in India have enjoyed the right to collect NTFPs by tradition. In the beginning they used to collect NTFPs only for consumption, but later they came to sell them for cash income. The tribal areas in Chhotanagpur and Santhal Parganas are rich in NTFPs like Kendu leaf, Sal seeds, *Mahua, Kusum, Karanj, Palas, Harra, Bahera, Amla, Neem,* Honey, Wax, Gum etc. Much of the NTFPs are sold in raw form. In the forests of Chhotanagpur region medicinal plants, such as *Amla, Harra, Bahera,* and herbs such as *Satwar, Papuravi, Amarlata, Neem,* and *Bel,* are highly valued. Two especially important forest products in this region are Lac and Tassar, which provide employment to thousands of tribal people living within and around the forest. Hence the tribals and forests can be understood to be interdependent and interrelated.

Tribals and Forest

While forests have maintained the existence of tribal people for centuries, it can also be said that tribals have traditionally protected the forest. In this way, there has been a symbiotic relationship between forests and tribals. As long as the forest was in the possession of tribal people there was sufficient forest cover. But as soon as the tribals were forced to become forest labourers by forest department/ mafias, deforestation started and as a result forest cover decreased. This has placed a question mark on the survival of many tribals whose

primary means of livelihood is the collection of NTFPs, even today. It is commonly understood that the collection of NTFPs is still the main activity of the majority of tribals in India. Tribal culture and forests are intimately interrelated and intermingled. The forest has played a significant role in shaping the social, economic, religious, political and cultural systems of tribal societies and there exists an emotional attachment between tribals and the forest landscape (Mearns & Sinha, 1998). The tribal–forest interface, however, is not limited to locating a forest as a tribal habitat. The core issue which concerns their relationship with the forest for their physical and cultural survival, referred as "symbiotic" in the Forest Right Act 2006, must be explored.

Forests Rights Act (2006)

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, known as the Forest Rights Act (FRA), was passed in 2006. It allows those who live in forested areas, and those who earn their livelihood from forested areas, to claim legal rights to the forested land that they use. The FRA gives three key rights to members of Scheduled Tribes (STs) and others who traditionally live in and off forests:

1. **Rights to the forest land that they live on and cultivate**, as long as they have been doing so since before 13 December 2005,
2. **Rights to own, access and use grazing grounds, water bodies and minor forest produce** in forest areas,
3. **Rights to protect, regenerate and conserve community forest resources** including wildlife and biodiversity (GoI, 2006).

In Jharkhand the implementation of the Act after its enactment was delayed. It was only after immense public pressure that the government initiated the implementation process (AJAM, 2015). There are several communities in Jharkhand that are not in the Scheduled Tribe list but they are tribal people. There have been evictions and other traditional forest dwellers have been victimized. Therefore it is the need of the hour to effectively implement the Act and build the capacity of tribals to manage their agriculture and forest with innovations and congruence with their culture and habitations (Choudhary, 2009).

In South Chhotanagpur of Jharkhand, the forest is a vital asset in everyday life and is providing food security to the rural population. Recently, the market for commercial NTFPs creating income-generating opportunities for rural people has received increasing research and development attention. However, knowledge about

forest, people and market relations are still limited and this is a problem for current development and conservation efforts.

The Study Area

Gumla district lies to the southwest of Jharkhand's capital Ranchi, bordering the districts of Simdega, Khunti, Ranchi, Lohardaga, Latehar, and sharing its western border with Chhattisgarh. Gumla is one of Jharkhand's beautiful hilly districts with many rivers and streams. The forest cover of the district is 1.35 lakh hectares, which is around 27 per cent of the total area of the district (Source: Forest Office, Gumla).

Bishunpur block, the northernmost block of Gumla district, is situated at about 70 km from the district headquarter Gumla. Ghaghra Block surrounds it to its east, Latehar district to its northwest, Lohardaga to its southwest and Chainpur block to its south. The main tribal communities in the block are Oraon, Asur, Brijiya, Korwa and Birhor. According to official statistics, the tribals of this block have high levels of illiteracy, poverty, and malnutrition. They have their own ways of life, traditions, cultural identities and customary modes of living closely intertwined with nature (Source: Block Office, Bishunpur).

Objectives of the Study

The present study tries to explore the livelihood contribution of Non-Timber Forest Products (NTFPs) to the tribals of Bishunpur block in Gumla district. The specific objectives are:

1. To understand the socio-economic conditions of rural households.
2. To estimate the contribution of NTFPs to rural household income and employment.
3. To study the economics of NTFPs collection.

Research Methods

Two villages, namely Banalat and Nirasi, of Nirasi panchayat were selected based on their proximity gradient from the forest. A sample of 50 respondents was taken by random selection of 25 respondents each from the two villages. The study is based on empirical fieldwork using both quantitative and qualitative data, both from primary and secondary sources. For primary data collection, methods included Participatory Rural Appraisal (PRA), key informant interviews, Focus Group Discussions (FGD), participant observation, and household

survey. Secondary data such as annual reports at the district level, and published government documents by the Ministry of Forest and Environment, Government of India were collected and analysed.

Results and Discussion

Description of Studied Villages

The demographic profile of the two study villages is shown in Table 1. According to the 2011 Census (GOI, 2011), Village Banalat has 217 households and a population of 1156. Village Nirasi has 282 households with a total population of 1370. 83% of the population are Scheduled Tribes in Banalat village whereas 92% population are Scheduled Tribes in Nirasi village. These villages are not electrified. However, the forest department provided solar lamps to these villages though only a few lamps are functional at present. There are no means of telecommunication since these villages are remote. The only means of transportation are bicycle and motorcycle. Very few educational and health services are available in the villages. In Banalat, there is one government primary school and one private high school, while in Nirasi village only one primary school is functioning. Only in Banalat are there a health sub-centre and the service of auxiliary nurse midwifes (ANMs) and Sahiya. The literacy rate of Banalat and Nirasi villages are 43% and 41% respectively, which is much lower than the overall literacy of Jharkhand i.e., 67.6% (GOI, 2011).

Table 1: Demographic profile of studied villages

Demographic parameters	*Banalat*	*Nirasi*
Total number of households	217	282
Total village population	1156	1370
Total male population	589	687
Total female population	567	683
Total SC population	72	46
Total ST population	956	1254
Male literate	307	347
Female literate	199	211
Total literate	506	558
Male illiterate	282	340
Female illiterate	368	472
Total illiterate	650	812
Total male work force	305	383
Total female workforce	302	360
Total workforce	607	743
Total male main work population (Agriculture)	43	374
Total female main work population	28	350
Total main work population	71	724
Total casual labour male population	21	371
Total casual labour female population	20	347
Total casual labour population	41	718

(Source: GOI, 2011)

Tribal Communities in the Study Area

Gumla district has a high cultural diversity in terms of its tribal population. In Nirasi panchayat of Bishunpur block, the major tribal communities, according to survey data and as shown in Table 2, are Oraon (65%), Kherwar (12%), Mahli (8%), Bhokta (5%), Lohra (5%), and Asur (5%). These communities are dwelling in the interior parts of the forests, depending on NTFPs for their subsistence. Asur is one of the Particularly Vulnerable Tribal Groups (PVTGs). The Oraon tribe is numerically dominant in the district contributing 60 to 70% of the total tribal population (GOI, 2011). The Oraon have a relatively better socio-economic status than the other communities. Tribal households cultivate paddy, maize, and pulses like urad, and rahar on their land. They utilize NTFPs as per their needs. The Oraon use items like mats, cots, wooden stools, baskets, cups and plates, which are made from forest products. The communities are also skilled in fishing and agriculture.

Table 2: Community-wise distribution of respondents

Community	No. of respondents	%
Oraon	32	65
Kherwar	06	12
Mahli	04	08
Bhokta	03	05
Lohra	03	06
Asur	02	04
Total	**50**	**100**

Source: Fieldwork data (February 2015)

Socio-economic Analysis of NTFP Collectors

The socio-economic characteristics of individuals involved in NTFPs activities (gathering, processing and marketing) was analysed using descriptive statistics. The analysis consists of sex, age, level of education, household size, income level, etc. The results indicate that 71% of users are female. This shows the dominance of women in NTFPs activities as shown in Table 3. The individuals whose age falls below 30 years constitute the major users (54%) and the age group between 31-50 comprises 32% of users. The age group above 50 years has just 14% of users. On the whole, 86% of users fall into the economically active age group of 20–50 years showing that the majority of NTFPs users are in the physically active age group. The majority (73%) of NTFPs users were married. The NTFPs users have an average family size of 5.5. The users with no formal education constitute 32% while those with primary education represent 62%.

Thus 94% of NTFP users have below secondary school level education, while just 6% have a secondary and tertiary education level. This scenario of low literacy greatly impairs the adaptability of the inputs used and has a negative impact on the productivity of NTFPs users.

Table 3: Socioeconomic profile of the NTFP collectors

S/No.	Variable	Category	Frequency	%
1.	Age	< 30	100	54
		31-50	60	32
		> 50	25	14
2.	Sex	Male	53	29
		Female	132	71
3.	Marital Status	Unmarried	50	27
		Married	135	73
4.	Educational Status	No formal education Primary	60	32
		Secondary/Tertiary	115	62
			10	06
5.	Size of the family	Size of the family (average)	5.5	..
		a. Adult males	1.20	..
		b. Adult females	1.00	..
		c. Children	3.30	..
6.	Monthly Income **(Family-wise)**	< 5,0005,000-9,999	10	..
		10,000-14,999	25	..
		15,000-19,999	06	..
		>20,000	04	..
			Nil	..
7.	Religion	Hindu		
		Christian		
		Muslim		
		Sarna	185	100
		Others		
8.	Proximity	Within Forest	185	**100**
		1-5		
		6-10		
		11-15		
9.	Source of NTFPs	Community Forest (CF)	167	90
		Forest Reserves (FR)	18	10
		Both (CF & FR)	..	..
10.	NTFP (years of experience in collection)	< 10	95	51
		10-20	30	16
		21-30	35	19
		31-40	25	14
		>40		
11.	Seasonality	Rainy	185	100
		Summer	Nil	..
		Winter	100	54
12.	Monthly Expenditure **(Family-wise)**	<1000	35	..
		1,000-4,999	06	..
		5,000-14,999	04	..
		>15,000	Nil	..

Source: Fieldwork data (February 2015)

It is evident from Table 3 that the majority of people gather NTFPs from community forest (90%) while just 10% gather them from forest reserves.

NTFPs Collectors' Involvement in Different Occupations

The tribals meet their food and income needs from collection of Non-Timber Forest Products, wage earning, agriculture, livestock rearing and services and allied activities. Table 4 indicates that all tribal households are involved in NTFPs collection. During seasonal collection, males, females and children collect the NTFPs for their livelihood substance. Since the collection season for different items is spread over the whole year, the NTFPs collection activities provide employment almost throughout the year. In addition, the 92% of the surveyed tribal households depend on agriculture, 64% on livestock rearing, 36% on wage earnings followed by just 8% on services and allied activities. Summing up, NTFPs collection is the most important activity in terms of labour contribution.

Table 4: Percentage of NTFPs collectors in different occupations

Activities/ Number of Respondents	NTFPs Collection	Agriculture	Livestock Rearing	Wage Earning	Services and Allied Activities
14 (28%)	"	"	X	"	X
22 (44%)	"	"	"	X	X
4 (8%)	"	X	X	"	"
10 (20%)	"	"	"	X	X
50 (100%)	**100%**	**92%**	**64%**	**36%**	**8%**

Source: Fieldwork data (February 2015)

Income Derived from Agriculture

Agriculture as an income generating activity provides relatively more income (averaging 7,957 Rupees per household, n=50) than NTFPs collection, wage labour, livestock rearing, and services and allied activities. The average household income from agriculture is 7,786 Rupees for Banalat village and 8,128 Rupees for Nirasi village. The majority of the cultivators grow paddy, maize, and vegetables on their land both for home consumption and sale.

Table 5: Income from Agriculture (in Indian Rupees)

Particulars	Study Villages		Total
	Banalat	Nirasi	
Number of Households	25 (50%)	25 (50%)	50 (100%)
Income from Agriculture (total of sample households)	194,655 (48.9%)	203,189 (51.1%)	397,844 (100%)
Average income per household	**7,786**	**8,128**	

Source: Fieldwork data (February 2015)

Income derived from NTFPs

Occupational contribution from NTFPs is an important source of livelihood for households in the study area as shown in Figure 1. Collection of NTFPs becomes the primary activity during the lean season of the year. Thus households depend on NTFPs not only for their sustenance but also to earn cash income.

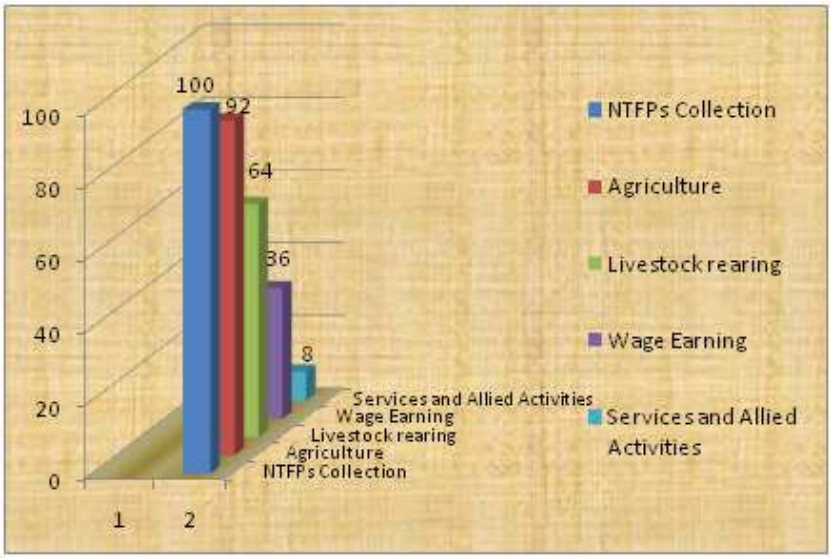

Figure 1: Showing occupational distributions of respondents

Table 6: Income from NTFPs (in Indian Rupees)

Particulars	Study Villages		Total
	Banalat	Nirasi	
No. of Households	25 (50%)	25 (50%)	50 (100%)
Income from NTFPs (total of sample households)	159,561 (50.95%)	153,563 (49.04%)	313,125 (100%)
Average income per household	**6,382**	**6,143**	

Source: Fieldwork data (February 2015)

Non-Timber Forest Products are the next major alternative source of income after agriculture in the study area (Table 6). The income generated from NTFPs, on average per household, was 6,382 Rupees for Banalat village and 6,144 Rupees for Nirasi village. Without a doubt it can be said that NTFPs play a critical role in providing subsistence and cash income to villagers.

Studies from all tropical regions indicate that it is often the poorest households in rural communities that are most directly dependent on NTFPs (de Beer & McDermott, 1989). But in the present study the local people were found to be less aware about the market value of many products, and were thereby unable to generate significant income from NTFPs though they offer huge opportunities. Therefore, NTFPs can be considered a potential business opportunity to improve the economy of tribal areas and beyond.

Income Composition of NTFP Collectors

NTFPs contribute to the livelihoods of a large proportion of the poor living in the forests of most tropical countries (Arnold & Ruíz Pérez, 2001). NTFP incomes vary across tribal households. Households collect several different NTFPs, however only a few of these contribute significantly to the total household income. In the study area, Mahua, Sal leaves and Tamarind together account for more than 70% of the annual NTFPs income as shown in Figure 2. It was found that Mahua (36%) contributed the most to the NTFPs cash income, followed by Kendu leaves (12%), Amla (12%), Rugra (3%), and Satwaar Zaar (1%) respectively.

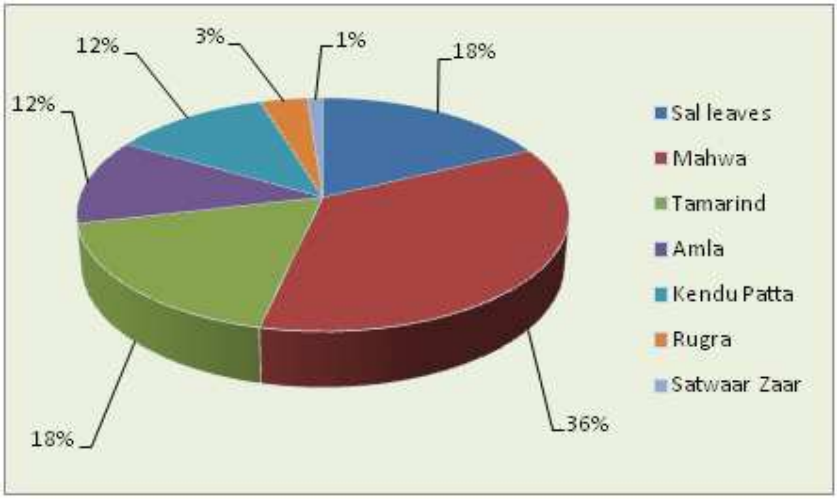

Figure 2: Percentage income contribution from sale of different sources of NTFPs

Source: Fieldwork (February, 2015)

Seasonality of NTFP Collection and Trading

Season-wise women's involvement in the collection, processing and trading of NTFPs (Figure 3) is more than that of men and children. All processing work is done at the house, and hence it is women who dominate this activity. It is invariably the men of the household who sell a major quantity of the product, although women also sell small quantities.

Name of NTFP	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mahua flower			C PT	C PT	T	T						
Mahua seed						C PT	C PT	T	T			
Kendu leaves				C PT	C PT							
Rugra White										C PT		
Rugra Black										C PT		
Karanj			C	C	C	PT	T	T	T	T	T	T
Satwaar Zaar (Processed)				T	T							C
Tamarind		C PT	C PT	T								
Sal leaves	C T	C T			C T	C T	C T	C T	C T	C T	C T	C T
Amla	C T	C T		PT	PT	T	T	T	T	T	T	T
Dori							C	T	T	T	T	

Figure 3: Seasonality of NTFP collection, processing and trading (C = collection season, PT = peak trading season, T = trading season)
Source: Fieldwork data (February, 2015)

Composition of NTFP Employment Pattern

Of all the NTFPs, Mahua is the major employment source contributing 26% (30 days/household) to the total NTFPs employment (Table 7). The collection of Mahua is a labour intensive activity and time consuming process. Sal leaves collection is the next most important employment generating activity providing 24% (28 days/household) to the total NTFPs employment. The collection of Kendu leaves, Rugra, Amla, Satwaar Zaar, and Tamarind contribute 18%, 12%, 9%, 3%, and 3% respectively to the total NTFPs employment. Thus, based on

the employment generating capacity, Mahua and Sal leaves can be considered as the major employment share in the study area. Altogether, the collection of all the available NTFPs generated 115 days of employment per NTFPs collector household.

Table 7: Contribution of NTFPs in employment generation

NTFPs	Season	Employment generated (days/HH/year)	Quantity sold
Mahua	March – May	30 (26.09)	200Kg (after drying)
Tamarind	March – April	03 (02.61)	100kg (after processing)
Sal leaves	March – June & Nov - January	28 (24.35)	20 bundal (1bundal=1000 leaves)
Amla	January – February	10 (08.70)	150Kg
Kendu leaves	April – May	21 (18.26)	1,00,000 leaves
Rugra White	July – August	14 (12.17)	20Kg
Rugra Black			5kg
Karanj	April – May	05 (04.34)	25Kg
Satwaar Zaar	December – January	04 (03.48)	3Kg
Total		**115 (100)**	

Source: Fieldwork data (February, 2015)

Economic Value of NTFPs

The economics of NTFPs includes the costs and returns involved in their collection and marketing. The opportunity cost of labour is then estimated considering the average labour man-days involved in NTFPs collection (Tejaswi, 2008). Fernandez-Cornejo (2007) explained that opportunity cost is an important economic concept that measures the economic cost of an action or decision in terms of what is given up to carry out that action. For example, the opportunity cost of labour for the tribal is often measured using wage rate in off-season (140 Rupees/day). The cost of time spent for NTFPs collection is imputed from the opportunity wage rate prevailing in the study area. The gross income per household derived from the sale of products is calculated by considering difference between total quantity collected and sold. The costs and returns of different NTFPs obtained during collection season is shown in Table 8. The total opportunity cost of labour amounts to 16,100 Rupees of which Mahua was highest (4,200

Rupees), followed by Sal leaves (3,920 Rupees), Kendu leaves (2,940 Rupees), Rugra (1,960 Rupees) and so on. This was mainly due to a higher number of days spent for collection. Table 8 shows household income from NTFPs collection. The gross income per household was 25,500 Rupees. Net returns from NTFPs are calculated using a simple concept, as the difference between gross returns and costs, excluding the opportunity costs of labour and transportation costs. Therefore, a total net return from NTFPs was 7,230 Rupees. Out of this, the most important product in the category on the basis of net returns generated was Amla, which contributed the highest net return (4,570 Rupees) due to its medicinal use and the presence of women Self Help Group outlets. On the other hand, as shown in Table 8 the net return from Rugra was negative (Tejaswi, 2008).

Table 8: Economics of NTFPs collectors (HH/year)

NTFPs	Quantity sold (Kg)	Price/kg (INR/kg)	Gross returns (INR)	Transport-ation cost (INR)	Labour mandays	Opportunity cost of labour* (INR)	Net Return (INR)
Mahua	200Kg (after drying)	30/Kg	6000	30	30	4200	1770
Tamarind	100kg (after processing)	25/Kg	2500	30	03	420	2050
Sal leaves	20 bundal (1bundal= 1000 leaves)	200/1000 Leaves	4000	30	28	3920	50
Amla	150Kg	40/Kg	6000	30	10	1400	4570
Kendu Pattaleaves	1,00,000 Leaves	100/2500	4000	30	21	2940	1030
Rug-ra White	20Kg	60/Kg	1200	30	14	1960	-760
Black	5Kg	150/kg	750				-1210
Karenj	30Kg	25/Kg	750	30	05	700	20
Satwaar Zaar (Processed)	3Kg	100/Kg	300	30	04	560	-290
Total			**25,500**	**240**	**115**	**16,100**	**7230**

Source: Fieldwork data (February, 2015)

*Note: *Off seasonal wage rates were considered (INR 140/Day)*
Exchange price of Karenj, 3Kg of Karenj = 1Kg Karenj Oil
Processing of Satwaar Zaar, Steaming followed by Drying

The details of the NTFPs available in the study area, such as local name, botanical name, period of availability, method of collection and their end use, are given in Table 9.

Table 9: Details of NTFPs in the Study Area

Local name	Botanical name	Period of availability	Method of collection	End use
Imli	Tamarindus indica	January – April	Taken off trees	To make things lime/paste
Bansh	Babusa spp.	January – December	Cutting	Household use
Sakhwa	Shorea robusta	January – December	Plucking of leaf from branches of tree	Making leaf plate
Karenj	Pongamia pinnata	March – May	Plucking of fruits	Extraction of oil
Satwaar Zaar	Asparagus racemosus	December	Taking out roots	Medicine
Kendu patta	Diospyros melanoxylon	April	Plucking of leaves	Tobacco
Amla	Emblica officinalis	January – February	Plucking of fruits	Pickle, medicine
Mahua	Madhuca indica	April – June	Picking flowers from ground	Wine, medicine
Dori	Madhuca indica	August – September	Picking fruits from ground	Extraction of oil

Source: Fieldwork data (February, 2015)

Contribution of NTFPs

NTFPs have both subsistence and commercial uses. A study conducted by Mahapatra and Tewari (2005) in the dry deciduous forests of India reveals that forests in India produce different varieties of NTFPs that contribute towards the subsistence livelihoods of rural people. Households spend a part of their income on the education of their children; which is a basic need. Varieties of green leaves are used in addition to vegetables as food, thus making a substantial contribution to the subsistence livelihood of Bishunpur block's tribal people. Women collect most of the seasonal fruits and vegetables although men also contribute towards their collection, and processing. Moreover, besides seasonal fruits and vegetables, honey plays an important role. As Banalat and Nirasi villages are within the forest and no medical facilities are available within the village or nearby areas, they rely very much on the forest and its produce for solving their minor health problems. Honey is used for medicinal purposes such as the treatment of cold and coughs. Both men and women collect it as it is easy to harvest.

The commercialization of NTFPs is the process of increasing the value of these products through trade so as to improve income and employment opportunities. Measuring the risks involved in the commercialisation of non-timber forest products, Belcher and Schreckenberg (2007) found that NTFPs are often the last source of cash income for people in remote areas. Neuman and Hirsch (2000) showed that commercialization of NTFPs have prospective as combination of environmental development and provision of economic benefits to rural people. Arnold and Ruíz Pérez (1996) suggested that

NTFPs enhance economic development and help in poverty reduction with the conservation of ecosystem. Tamarind, Sal leaves, Mahua, Amla, Kendu leaves, Karanj, Satwaar Zaar, Mushroom, etc. are important sources of cash income. Mahua is often considered synonymous with alcohol in the context of tribal life and culture. However in Bishunpur block of Gumla, it is observed that a grass-roots organization was successful in discovering and promoting other uses of the Mahua collected by tribal communities. Drying of Mahua flowers is done at the village level, where the NGO Vanwasi Kalyan Kendra have installed three machines for this purpose. This NGO was instrumental in motivating the tribals to sell their collections to local wheat mill owners, who ground the Mahua into powder, which is then taken to bakeries to make Mahua flavoured biscuits. These biscuits are packaged by the organization and sold at fairs. Most collectors have been organized into self-help groups of both men and women and are encouraged to take care of their own accounts.

Conservation of Forest

Earlier forest dwellers' dependence on the forest was total; they used to get everything from food, fuel, housing and medicine to recreation and social, religious and cultural identity from the forest. There was a symbiotic relationship between the forests and the forest dwellers that ensured the fulfilment of their daily needs and the protection of the environment. This link has slowly weakened. Gradually, a Van Suraksha Samiti (VSS) was formed under Participatory Forest Management (PFM) to take decisions and ensure protection pertaining to the forests. At least one member of every household in the village is registered as a member of the VSS. Voluntary participation of the villagers is not as labourers serving departmental interests but as partners in the larger interest of the community itself. No one is allowed to carry out any activity related to forest use without permission from the VSS, which works under the Gram Sabha. The community members can harvest timber for house construction or to make agricultural implements, but only after informing the Gram Sabha and getting its approval.

Issues and Challenges

1. Government Policy

- The regulations and restrictions imposed by the government, like issue of transport permits, licenses, registration etc., in absence of a strong monitoring and implementing system, only creates chaos, corruption and a strong and prosperous illegal system of trade (Banajata, n.d.).

2. At the Primary Collectors' Level

- The Naxalite movement in the interiors is a great problem for the primary collectors because they are the ones who are directly affected.
- Technical know-how regarding processing, storage, about the market and its functioning, role in the value chain, government policies, rules and regulations, and value addition are the major issues at the primary collector's level.
- Lack of proper storage facility allows for low quality of the product, which in turn amounts to low returns.
- Most of the NTFPs move out of the villages in raw form and villagers have little to no involvement in value addition, such as drying, grading, packaging or proper weighing (Banajata, n.d.).

Further Challenges

- Due to lack of proper infrastructure such as roads, transportation facilities and storage facility, the primary collectors as well as the traders have to forgo a part of their payment.
- There is a looming fear of the Naxalites in the minds of everyone involved in the trade, including the government officials.
- There is a lack of proper documentation of the records, as there is no control over the trade of any product.
- Staffing of the forest department is insufficient, especially at the lower level, to effectively monitor the situation on the ground (Banajata, n.d.).

Recommendations

- The effective management of the entire NTFPs collection process is a key factor for the successful commercialization of NTFPs in the local market. LAMPS, a field level collection agency, has to be strengthened.
- Processing and marketing of NTFPs, encouraging domestication of NTFPs, facilities to financial assist NTFP collectors, and conservation of forest and ecology.
- More academic and development research on NTFPs is needed to help frame policy for the production, harvesting, domestication and marketing of NTFPs.
- Better management of NTFPs collection and processing will help increase self-employment and income-generating opportunities, ensure food security and enhance the socio-economic conditions of NTFP collectors, their families and communities.

Conclusion

Tribal culture and forests are intimately interrelated. The forest played a significant role in shaping the social, economic, religious, political and cultural systems of tribal societies and there exists an emotional attachment between tribals and the forest landscape. The forest supplies wood, poles and bamboo for building of houses and ploughs etc., besides providing food to supplement meagre supplies. Non-timber forest products (NTFPs) play a vital role for India's tribal people, millions of who are dependent on NTFPs for their subsistence and cash incomes. NTFPs provide critical subsistence during the lean seasons, especially for Particularly Vulnerable Tribal Group (PVTGs). Overall, NTFPs contribute about 20% to 40% of the annual income to the otherwise socially and economically deprived tribal communities.

The majority of people gather NTFPs from community forest (90%) while just 10% source these products from forest reserves. The tribals meet their food and income needs from a combination of collection of NTFPs, wage earning, agriculture, livestock rearing, and services and allied activities. All tribal households are involved in NTFPs collection. Overall, NTFPs collection is the most important activity in terms of labour contribution. NTFPs collection provides employment almost throughout the year. The most common activities are collection of fuel wood, honey, Mahua, Amla, Satawar root, Dori, mushroom, Kusum, Sal leaves, leafy vegetable and bamboo. The poor households earn an income by selling honey, Mahua, fuel wood, Sal leaves, bamboo etc. About 80% of the respondents of this study feel that there is a need for training to process and market NTFPs. Since the forest area is being depleted and reduced in size, respondents suggest planting more trees.

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