



E-ISSN: 2278-4136  
P-ISSN: 2349-8234  
JPP 2018; SP1: 925-928

**Bardani**

Department of Forestry, College  
of Agriculture Raipur, Indira  
Gandhi Krishi Vishwavidyalaya,  
Raipur, Chhattisgarh, India

**RK Prajapati**

Department of Forestry, College  
of Agriculture Raipur, Indira  
Gandhi Krishi Vishwavidyalaya,  
Raipur, Chhattisgarh, India

**Diwakar Prasad Nirala**

Department of Forest Products  
& Utilization, Birsa Agricultural  
University, Kanke, Ranchi,  
Jharkhand, India

## Sustainable uses of non-timber forest products among the tribes in bhoramdeo wild life sanctuary in Kawardha district of Chhatisgarh

**Bardani, RK Prajapati and Diwakar Prasad Nirala**

**Abstract**

This study assessed tribes households objective for gathering Non-Timber Forest Produce in Bhoramdeo Wild Life Sanctuary in Kawardha district of Chhatisgarh, with specific focus on identifying some species of Non-Timber Forest Produce present in the area. Tribes residing in and around Bhoramdeo Wild Life Sanctuary are progressively dependent on NTFPs for sustain their livelihood instead of utilizing it as a prospective income source and for their socio-economic development. Identifying reasons why they engaged in the gathering of the Non-Timber Forest Produce (NTFPs) as well as determining the relative importance of the identified reasons to the households. One hundred and twenty questionnaires were randomly administered on respondents from randomly selected fifty six respondents. The study identified some species of Non-Timber Forest Produce that were found in the study area. These include tendu leaf (*Diospyros melanoxylon*), char (*Buchanania lanzan*), mahul leaf (*Bauhinia vahlii*), chiraita (*Andrographis paniculata*) and a host of others. The relative importance of the given reasons was also determined and it was discovered that food security was the most important reason the tribes engaged in Non-Timber Forest Produce gathering while continuity objective was ranked least.

**Keywords:** Non-Timber Forest Produce, forest village, forest products, Tribes

**Introduction**

The use of Non-Timber Forest Produce is as old as human existence. In subsistence and rural economics, the role and contribution of NTFPs in the daily life and well fair of people are crucial because of their richness of variety as sources of food example fruits, nuts, honey, fibre, medicinal extracts, etc. Non-Timber Forest Products includes all goods of biological origin as well as services derived from forest or any land under similar use and exclude wood in all its form. NTFPs have called Minor Forest Products (MFPs) due to minor income/revenue that used to be generated up to the middle of the country. These products are derived from a variety of sources plants, animals and non-living components of the ecosystem (Aiyeloja and Ajewole, 2006) [8]. Non-Timber Forest Produce (NTFPs) is an integral part of development and survival of people living in and around forests and depending on them. Rural households across the world have various reasons for which they engage in Non-Timber Forest Products gathering and these differ from one person to another, from one household to another and from one region to another. However, the kind of objectives or goals set by these households depends on individual households' present, and in some cases future needs. According to Ellis (1993) [12], household objective could be under two broad categories, namely economic efficiency and social effectives. In the view of Clayton (1983) [10], the priority objectives of households are to ensure sufficient food production and cash. But apart from these two reasons, households generally have a number of secondary objectives for which they engage in the gathering of NTFPs, such as having security in their livelihood, having the opportunity to observe socio – cultural customs and obligations as well as having satisfactory amount of leisure time.

Non-Timber Forest Products may be used to make different products for domestic use or marketed through middlemen. They add to people's livelihood security, especially for rural dwellers, and may also have substantial cultural significance and value (Posey, 1999; Cocks and Weirsum, 2003) [11]. Tribes have immense knowledge of forest wealth conserved and protect large number species in forest. Tribes worship numerous plants as per their rituals, culture and religious believes. The local people have fairly good knowledge as to where and when to harvest and which, product to derives maximum benefits. Some Non-Timber Forest Products also provide raw material for small and large scale industrial processing, including for international traded commodities, such as food and beverages flavouring, perfumes and

**Correspondence****Bardani**

Department of Forestry, College  
of Agriculture Raipur, Indira  
Gandhi Krishi Vishwavidyalaya,  
Raipur, Chhattisgarh, India

medicine.

There are reports to over 150 Non-Timber Forest Products of significance to international trade for example honey, gum Arabic, rattan, cork, forest nuts and mushrooms, essential oils. Often times, people have attributed the reason why rural households engage in NTFPs collection or gathering mainly to income generation. But apart from income or profit making, there are several other reasons for which these people engage in the collection of these products. In view of this, the study was set out to investigate why rural households residing in and around Borhamdeo Wild Life Sanctuary of Kawardha district engage in Non-Timber Forest Products gathers, with the following specific objectives being investigated:

1. To identify some species of NTFPs found in the study area.
2. To identify the reason why rural household in study area engage in NTFPs gathering.
3. To determine the relative importance of these goals to the households.

**Materials and methods**

The study was carried out in Borhamdeo Wild Life Sanctuary of Kawardha district, chhatisgarh. Borhamdeo Wild Life Sanctuary occupies a special position in the state of Chhatisgarh and tourism point of view. The study area located between 22° to 22° 10° east longitude and 80° to 80° 10° North longitude. There are mainly two dominated tribes namely *Gond* and *Baiga* are living in and Borhamdeo Wild Life Santiary. The entire area of Borhamdeo Wild Life Sanctuary is located in the Maikle Range of the Satpura hills. The whole part is hilly. The area is situated at the height of 600 to 894 meter from the sea level. The climate of the study area is dry humid tropical consist three major seasons viz. Rainy, winter and summer. Mixed forests are present near about entire area

of Borhamdeo Wild Life Sanctuary. The purposive selection of the village was done due to prevalence of NTFPs collection activities in the region.

The study was undertaken in nine villages (S1-S9; choura, chhapri, sakriachar, rajpura, kesda, bandha, diyabar, jhandi and thanwerjol). The adjoining areas of the nine villages had a large population dependent on the forest for NTFPs.

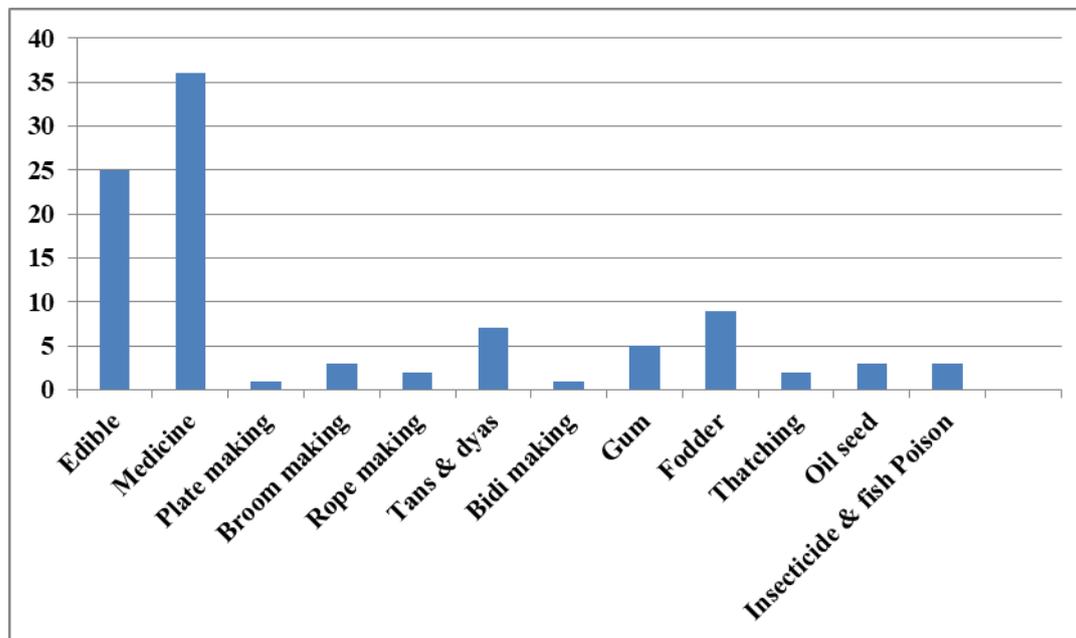
Data were purposively collected through interview schedule and questionnaires administrated on fifty eight randomly selected households heads from nine villages. The following set of question was formulated and posed to the community representatives on an individual basis, in each selected villages:

- (a) What are the most preferred edible NTFPs?
- (b) What are the most preferred medicinal NTFPs?
- (c) Which indigenous edible and medicinal NTFPs are threatened?

**Result and discussion**

Several NTFPs were found to be extracted in the selected villages. Nine major categories of Non-Timber Forest Products were recorded during survey at the present investigation which includes different forms of oil, food, gum, resin, broom, leaves (sal, tendu, mahul), grass. Table-1 shows the some major NTFPs identified in the study area. Survey reveals that among the different grass resources most popularized use of grass resources includes use as roof thatching, rope and fodder. Among the different NTFPs wax, honey, gum, food items such as leaves used as food material. From table 1, it observed that edible and medicine is the most collected of all the species. This is in agreement with an earlier report by Andel (2006) [9] and Jimoh and Haruna (2007) [13] that NTFPs are used as food and medicine by rural people.

**Table 1:** Utilization pattern of some major NTFPs identified in Borhamdeo Wild Life Sanctuary.



It was observed from the study area that there are several uses to which tribes put NTFPs. These include the use of NTFPs as food, medicine, local construction materials and rafts and so on. Table-2 shows some NTFPs that are commonly found in the study area and what they are being used for, by the people

of the area. These are identified by the respondents as the most commonly collected and most often used species. The most common collected NTFPs in the study area are leaves, mushroom, bush, fruits and nuts.

**Table 2:** Identified NTFPs (Trees) in around Bhoramdeo wild Life Sanctuary.

S.N.	Local Name	Botanical Name	Family	Part used	Use (s)
1.	Char	<i>Buchanania lanzan</i>	Anacardiaceae	Fruit	Food, fodder
2.	Anola	<i>Embelica officinalis</i>	Euphorbiaceae	fruit	Food, medicine
3.	Mahuva	<i>Madhuca indica</i>	Sapotaceae	Flower, fruit & seed	Food, medicine
4.	Kusum	<i>Schleichera oleosa</i>	Sapotaceae	seed	Oil
5.	Bhelwa	<i>Semecarpus anacardium</i>	Anacardiaceae	Fruit	Food
6.	Sal	<i>Shorea robusta</i>	Dipterocarpaceae	seed	Food
7.	Imli	<i>Tamarindus indica</i>	Caesalpiniaceae	Fruit	Food, medicine
8.	Bahera	<i>Terminalia bellirica</i>	Combretaceae	Fruit	Medicine
9.	Tendu	<i>Diospyros melanoxylon</i>	Ebenaceae	Leaf, fruit	Food, bidi making
10.	Bel	<i>Agel marmelos</i>	Rutaceae	Fruit	Food, medicine
11.	Jamun	<i>Syzygium cumini</i>	Martaceae	Fruit	Food, medicine
12.	Kachnar	<i>Bauhinia variegata</i>	Casalpiniaceae	Pod, new leaf	Food, medicine
13.	Hrra	<i>Terminalia cheula</i>	Combretaceae	Fruit	Medicine
14.	Amta	<i>Bauhinia malabarica</i>	Casalpiniaceae	Leaf, bark	Food, medicine
15.	Bhak tendu	<i>Diospyros montana</i>	Ebenaceae	Fruit	Medicine
16.	Dhawra	<i>Anogeissus latifolis</i>	Combretaceae	Bark	Gum
17.	Saja	<i>Terminalia tomentosa</i>	Combretaceae	Bark	Gum, dye
18.	Tinsa	<i>Ougeinia ojeinensis</i>	Legiminoceae	Bark	Tanin
19.	Asta	<i>Bauhinia racemosa</i>	Legiminoceae	Bark	Tanin
20.	Haldu	<i>Adina cordifolia</i>	Rubiaceae	Leaf, bark	Tannin, medicine
21.	Babool	<i>Acacia nilotica</i>	Mimosaceae	Leaf, bark	Fodder, gum

**Identified NTFPs (Shrubs) in around Bhoramdeo wild Life Sanctuary.**

S. N.	Local Name	Botanical Name	Family	Part used	Use (s)
1.	Manhar	<i>Catunaregam spinosa</i>	Rubiaceae	Fruit, root	edible, fish poison
2.	Makoi	<i>Zizyphus oenoplea</i>	Rhamnaceae	Fruit	Edible
3.	Gursakri	<i>Grewia hirsute</i>	Tiliaceae	Fruit	Edible
4.	Vantulsi	<i>Ocimum basilicum</i>	Lamiaceae	Seed, leaf	Medicine
5.	Datura	<i>Datura metel</i>	Solanaceae	Leaf, flower	Medicine
6.	Baroli	<i>Indigofera cassioides</i>	Fabaceae	Pod	Edible, snake bite
7.	Ainhi	<i>Helicteres isora</i>	Sterculiaceae	Fruit, twig	Edible, medicine
8.	Dhawai	<i>Woodfordia floribunda</i>	Lythraceae	Flower	Dye
9.	Aak	<i>Calotropis procera</i>	Asclepiadaceae	Flower, leaf latex	Medicine
10.	Bursi	<i>Jasminum multiflora</i>	Oleaceae	Root	Snake bite
11.	Dudhi	<i>Wrightia tinctoria</i>	Apocynaceae	Bark	Medicine
12.	Karonda	<i>Carissa carandas</i>	Apocynaceae	Fruit	Food
13.	Jangli chameli	<i>Jasminum arborescens</i>	Oleaceae	Leaf	Edible, medicine
14.	Chhindi	<i>Phoenix acaulis</i>	Arecaceae	Leaf, fruit	Medicine
15.	Ber	<i>Zizyphus mauritiana</i>	Rhamnaceae	fruit	Edible, fodder

**Identified NTFPs (Herbs) in around Bhoramdeo wild Life Sanctuary.**

S. N.	Local Name	Botanical Name	Family	Part used	Use (s)
1.	Tulsa	<i>Ocimum canum</i>	Lamiaceae	Fruit, root	Edible, medicine
2.	Charota	<i>Cassia tora</i>	Caesalpiniaceae	Seed, leaf	
3.	Banjanti	<i>Glossogyne bidens</i>	Verbenaceae	Leaf	Medicine
4.	Khajuri	<i>Phoenix aculis</i>	Arecaceae	Leaf	Broom making
5.	Koriea	<i>Holarrhena pubescens</i>	Apocynaceae	Bark	Medicine
6.	Chiraita	<i>Andrographis paniculata</i>	Acanthaceae	Whole plant	Medicine
7.	Chhir	<i>Imperata cylindrica</i>	Poaceae	Root, seed, spike	Broom making, medicine
8.	Choti- dhudhi	<i>Euphorbia thymifolia</i>	Euphorbiaceae	Whole plant	Medicine

**Identified NTFPs (Climbers) in around Bhoramdeo wild Life Sanctuary.**

S. N.	Local Name	Botanical Name	Family	Part used	Use (s)
1.	Paibel	<i>Combretum roxburghii</i>	Combretaceae	Twig	Rope making
2.	Mahul	<i>Bauhinia vahli</i>	Caesalpiniaceae	Leaf	Plate making
3.	Ramdatun	<i>Smilax zeylanica</i>	Smilacaceae	Twig, leaf	Brush making, edible
4.	Kenwanch	<i>Mucuna pruriens</i>	Fabaceae	Pod, seed	Edible, medicine
5.	Lalbel	<i>Ventilago denticulate</i>	Rahmnaceae	Root, bark	Medicine
6.	Nagbel	<i>Crypto buchanaei</i>	Asclepiadaceae	Twig	Fibre
7.	Bodla	<i>Butea superba</i>	Fabaceae	Leaf	Fodder
8.	Sataver	<i>Asparagus racemosus</i>	Liliaceae	Root	Medicine

**Identified NTFPs (Grasses) in around Boramdeo wild Life Sanctuary.**

S. N.	Local Name	Botanical Name	Family	Part used	Use (s)
1.	Munsel	<i>Iseilema nervosum</i>	Rubiaceae	Leaf	Medicine
2.	Kans	<i>Saccharum spontanneum</i>	Poaceae	Spike, leaf	Thatching
3.	Sukul	<i>Heteropogon contotus</i>	Cyperaceae	Whole plant	Fodder
4.	Phulbahari	<i>Thysanolaena maxima</i>	Cyperaceae	Panicle	Broom making
5.	Bhurbhusi	<i>Eragrostis tenella</i>	Poaceae	Leaf	Fodder
6.	Bamboo	<i>Dendrocalamus strictus</i>	Poaceae	Culm	Mats making, thatching

Various NTFPs species (25) have medicinal value for the treatment of various ailments including diarrhoea, cut/wounds, stomach aches and others. The root roots, seeds, bark, resin, leaves are used. Aber and Lameed (2008) <sup>[1]</sup> reported that the African giant land snails used to cure whooping cough, anaemia, ulcer, asthma, aphrodisiac and hypertension.

**Conclusion**

This study has shown that there are several reasons for tribes engage in NTFPs collection in study area. Some of these reasons include their desire to provide food for their families especially during lean harvest period, during which NTFPs serve as 'safety-net' for the tribes. Other reasons given were income generation which enables them to get money to purchase food they cannot produce. It is hereby recommended that there is the need for forest policies to include the production of NTFPs to allow for the production of bush, honey, bamboo, traditional medicine and other forest food to better the lot of rural people who largely depend on these produce from the forest for their survival.

**References**

1. Aber SA, Lameed GA. The medicinal utilization of snails in some selected states in Nigeria. *In: Onykwelu, J.C., Adekunle, V.A.J. and Oke, D.O. (eds). Proceedings of the 1<sup>st</sup> National Conference of the Forest and Forest Products Society of Nigeria (FFPN) held at the Federal University of technology, Akure, Ondo state. 2008, 233-237.*
2. Aiyelaja AA, Ajewole OI. Non Timber Forest Products' marketing in Nigeria: A case study of Osun state. *Educa. Rev.* 2006; 1:52-58.
3. Andel TV. Non Timber Forest Products the value of wild plants. Agromisa publication and CTA, the Netherlands, 2006.
4. Clayton E. Agriculture, Poverty and Freedom in Developing Countries, Macmillan Press, London, 1983.
5. Cock ML, Weirsum KF, The significance of plant diversity to rural households in the eastern Cape Province of South African Forests, *Trees Livelihoods*, 2003; 13:39.
6. Ellis F. Peasant Economics: Farm Households and agrarian Development. 2<sup>nd</sup> Edition (Cambridge: Cambridge University) press, 1993.
7. Jimoh SO, Haruna EA. Contribution of Non Timber Forest Products to household food security and income around Onigabari Forest Reserve. Oyo State, Nigeria. *J. Environ. Ext*, 2007, 28-33.
8. Posey DA. Cultural and Spiritual Values of Biodiversity. UNEP, Nairobi, 1999.