

# Ethnobotany in relation to livelihood security in district Bastar of Chhattisgarh state with special reference to non-timber forest produces

Mithlesh Kumar Sinha<sup>1\*</sup>, V. K. Kanungo<sup>2</sup>, M. L. Naik<sup>3</sup>

<sup>1</sup>Department of Botany, Government Nagarjuna P.G. College of Science, Raipur, Chhattisgarh, India, <sup>2</sup>Department of Botany, Government Nagarjuna P.G. College of Science, Raipur, Chhattisgarh, India, <sup>3</sup>SOS. in Life Science, Pt. Ravi Shankar Shukla, University Raipur, Chhattisgarh, India

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**\*Address for  
correspondence:**

Mithlesh Kumar Sinha,  
Department of Botany,  
Government NPG College  
of Science, Raipur,  
Chhattisgarh, India.  
E-mail: Sinhamithlesh01@  
gmail.com

## ABSTRACT

In the present study, ethnobotany in relation to livelihood security in district Bastar of Chhattisgarh state with special reference to non-timber forest produces (NTFPs) were found to collect a variety of plant produces from forests, for their livelihood security. Those collected plant produces were NTFPs. In this research, total 44 plants producing NTFP were noted to be collected by tribals in 20 villages of Bastar district. Plant and plant produce collected by the tribals from the plants were seeds of 11 plants, fruits of 11, roots of 3, rhizomes of 4, flowers of 4, and secretory products from 3 plants, whereas 4 whole plants. Lakh and *Cocoons* were also collected by the tribals from the forest. Besides collection of NTFPs, 69 potential marketplaces in Bastar district where marketing of NTFPs was found maximum were also identified for the selling of plant produces.

**KEY WORDS:** Bastar, ethnobotany, medicinal plants, non-timber forest produces, tribal people

## INTRODUCTION

The present investigation entitled “ethnobotany in relation to livelihood security of district Bastar of Chhattisgarh state” is the task to investigate the existing traditional knowledge of local tribal communities, forest villagers inhabiting in the areas of district Bastar of Chhattisgarh state as well as the status of livelihood promotion through collection, conservation, and value additions of non-timber forest produces (NTFPs). NTFPs are playing a key role in the livelihood security of the tribal community, unfortunately due to lack of appropriate planning which is not utilized optimal, although availability of various produces is more than sufficient to cover the food and livelihood security.

Chhattisgarh has a rich and varied flora due to its diversified topography and variable climatic condition. 20-25 tribes are living isolated or in combination in four different zones such as Central, Eastern, Western, Northern, and Southern zones, respectively. The Gonds constitute the largest tribe among the other tribes of the state. District Bastar is located in the southern zone of Chhattisgarh. Gonds, Bhatara, Muriya, Mariya, and Halba are the main

tribes of Bastar, and they have unique identification in the country. Bastar is a tribal district where about 70% of the total population is tribals and which constitutes 26.76% of the total tribal population of the Chhattisgarh state. Each tribal group has their own culture, and each of them is following their own traditional living ways. These tribal groups are having different spoken languages, and they differ from each other in their costume, eating habits, customs, art, living ways, etc. Some of the tribals are still living in interior forests, and they do not like to come to the outer world and mingle with the modern civilization and are unaware of what is happening in the world. The selected villages under the study are as usual tribal villages in this district Bastar. The primary occupation being agriculture, the villagers are able to derive one paddy crop in a year which is the only crop because of lack of irrigational measures. In the lean agricultural months, the men folk are either engaged in illegitimate de-forestation or in working as laborers in the nearby urban settlements of Bastar district. The women are primarily engaged in collection and sales of NTFPs forest produce for the livelihood security. The women attend the weekly markets (Haats) regularly and are aware of the basic marketing

mechanisms which provide the basic premise for the entrepreneurial capacity building.

### NTFPS Collection and Marketing for Livelihood Security

The largely collected NTFPs for livelihood security were Mahua, Amla, Bhuileem, Satavari, Harrha, Baheda, Bel pulp, Bhelwa Beeja, Char guthali, Dhawai full, Ghotfar, Tikhur, Kahavachali, Karait, Karanji, Karukanda, Keokanda, Kosaphokla, Kumliful, Kosum, Nagarmotha, Phutu, Farasaful, Peng Beeja, Ramkanda, Saragilasa, Saragibija, Sahad, and Tori etc. (Tables 1-4).

### Study Site

Bastar district of the Chhattisgarh state was selected as a study site for the present work. Bastar is one of the tribal districts of the state. Before splitting into three districts in the year 1999, it was one of the largest districts in India; the area of the district was even larger than the area of Kerala state and some other countries such as Belgium and Israel. Bastar district was divided into three districts namely Bastar, Kanker, and Dantewada. Later in the new state of Chhattisgarh, Bastar incorporated five districts, namely, Bastar, Kanker, Dantewada, Narainpur, and Bijapur. In the year 2007, Bastar became one of the districts among the five divided districts of old Bastar.



The district of Bastar is located in the southern part of Chhattisgarh state, situated at the height of 2000' M.

above plateau MSL. In Chhattisgarh, state Bastar district is surrounded by Kanker district in the north Maharashtra state in the West Dantewada district in the south and Orissa state in the east. The total forest area of the Bastar is 7112 km<sup>2</sup>, which is more than the 75% of total area of the district. Out of the total population, more than 70% are tribals such as Gonds, Abujhmaria, Dardamaria, Muriya, Doriya, Dhruva, Bhatra, and Halba. The largest and the most important river in the Bastar districts is the Indravati neither the river nor its tributaries dry in the hot session. As per 2001 census, the population of Bastar is 1302253, out of them 648068 are male and 654185 are female. The majority of population 1172265 lives in rural area.

### MATERIALS AND METHODS

Tribal people were interviewed during the visits for documentation of plants widely used for livelihood Security (Figure 1). The information of plants was collected under the heads of food, fodder and fuel and NTFPs. Local and nearby market were also surveyed for marketing of collected materials from the forest (Figure 2). Local vendors who purchases forest produces at the market

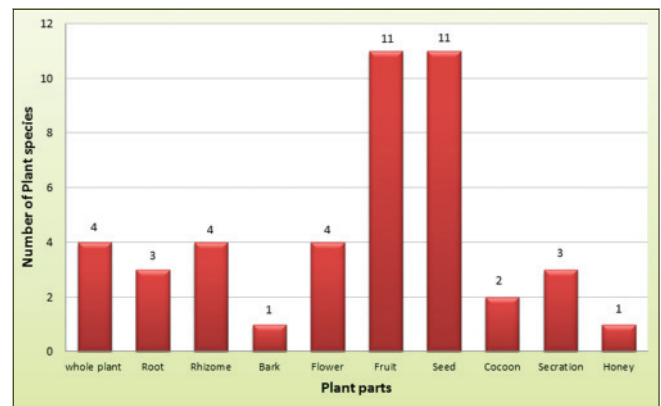


Figure 1: Plants used by tribals as non-timber forest product for livelihood security

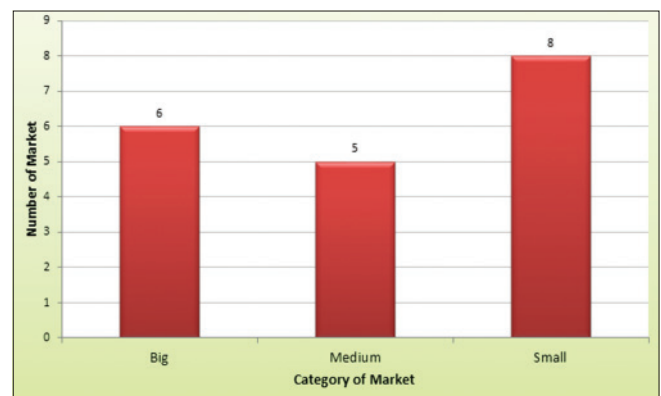


Figure 2: Category of non-timber forest produces market in study area for livelihood security

**Table 1: NTFPs of plant and animal origin collected by tribes of Bastar district for their livelihood security during the year 2006-2008**

Trade name	Botanical name	Vernacular name	Marketable part	Processing technique	Collection period	
					From	To
Aamguthali	<i>Mangifera indica</i> Linn.	Markaami	Seed	Fruits are chopped, and seeds are dried in sunlight	May	June
Aamchur	<i>Mangifera indica</i> Linn.	Markachur	Fruit	Fresh fruit are collect	May	June
Aithimudi (Marodphalli)	<i>Helicteres isora</i> Linn.	Aithimudi	Fruit	Fresh fruits are collected and dried in sunlight	December	January
Ajmoda	<i>Apium graveolens</i> Linn.	Ajmoda	Seed	Mature seeds are collected and dried	May	August
Aonla	<i>Embllica officinalis</i> Gaertn.	Awla	Fruit	Steam boiling of fruits, separation of pulp and dried in indirect sunlight	December	March
Baheda	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Tahaka	Fruit	Pulp is separated from seeds and dried in sunlight	March	May
Baibiding	<i>Embelia tsjeriam</i> cottam	Baibiding	Fruit	Seeds are collect and dried	May	January
Baiehandi	<i>Dioscorea daemona</i> Roxb.	Koliyapapad	Root	Roots are collected and cleaned with the hot water cut into pieces then dried	December	Jan
Banjeer (kalijeeri)	<i>Bunium persicum</i>	Banjeer (kali jeeri)	Seed	Seeds are then dried in sunlight and fried over the flame	December	February
Bantulsi	<i>Ocimum gratissimum</i>	Bantulsi	Whole plant	Fresh plants are collected clean with the water and dried in sunlight then chopped into pieces	February	March
Bel far	<i>Aegle marmelos</i> , Correa.	Mhaka far	Fruit	Mature fruit pulp is separate from seed then dried in sunlight, known as Belguda	March	June
Bhelwa beeja	<i>Semecarpus anacardium</i> Linn.	Bhelwa Beeja	Fruit	Seed are collected from plant dried in the sunlight	March	June
Char guthali	<i>Buchanania lanzan</i> , Roxb.	Erkaguthali	Seed	Seeds coat is removed, and seed kernel is used for Chironji	April	June
Charota	<i>Cassia tora</i> Linn.	Charota	Seed	Seeds coat is removed	November	February
Cherinar	<i>Cryptolepis buchanani</i>	Kevli	Plant	Flowers are collected and dried in sunlight	November	January
Dhawaiphool	<i>Woodfurdia fruticosa</i> , Salisb	Dhawaiphool	Flower	Flowers are collected and dried in the sunlight	February	March
Ghotfar	<i>Zizyphus xylopyrus</i> Willd.	Ghotfar	Fruit	Fruit collected and dried	March	May
Emliaati	<i>Tamarindus indica</i> Linn.	Eta phool	Fruit	Seeds are removed, and pulp is separated is known as Emliaati	March	May
Emlibeeja	<i>Tamarindus indica</i> Linn.	Emlibeeja	Seed	Emlibija is collected from the mature fruits; seeds are separated from the pulp	March	May
Bhuileem	<i>Andrographis paniculata</i> , Burm.f.	Bhuileem	Whole plant	Fresh plants are collected and cleaned with water, chopped into large pieces then dried in the sunlight	October	November
Kahuachal	<i>Terminalia arjuna</i> Roxb.	Kahuchali	Bark	Bark is collected from the big tree in patches and cuts into small pieces. Then dried in the sunlight	January	April
Karait	<i>Verbena officinalis</i>	Karait	Seed	Seed are separate from fruit and dried	January	March
Karanj	<i>Pongamia pinnata</i> Linn.	Karanjibija	Seed	Pods du dried then seeds are removed	December	January
Karukanda	<i>Dioscorea oppositifolia</i>	Karukanda	Rhizome	Rhizomes are collected from soil and cleaned with water then the upper surface is removed and dried in the sunlight	September	October
Keokanda	<i>Costus speciosus</i> Retz.	Keokanda	Rhizome	Rhizomes are collected from the soil and cleaned with water then upper surface is removed and dried in the sunlight	November	December
Kosa	<i>Cocoon</i>	Kosa	<i>Cocoon</i>	<i>Cocoons</i> are boiled in water; then, Kosa fibers are extracted by rupturing the cocoon	December	January
Kosaphokla	<i>Cocoon</i>	Kosaphokla	<i>Cocoon</i>	Kosaphokla is collected from the forest and directly sold in the market	December	January
Kumhiphool	<i>Careya arborea</i>	Kumhiphool	Flower	Flowers are collected from the forest then dried in shed and sold in market	February	March
Kusum	<i>Schleichera oleosa</i> Willd.	Kusum	Seed	Seeds are separated from the fruit and dried in direct sunlight	May	July
Lac	<i>Laccifer lacca</i>	Lac	Secration	Lac is collected from twigs of Kosam	December	January
Mahuaphul	<i>Madhuca latifolia</i> Roxb.	Mahuaphul	Flower	Flower are collected in the morning, five to ten days regularly dried in the sunlight, then packed in the gunny bags and stored in shed or cool place for long time	March	May
Manharphal	<i>Randia dumetorum</i> Lamk.	Thelkaphal	Fruit	Directly seeds are dried in the sunlight	March	May
Modgalasa	<i>Lannea grandis</i> (Dennst) Engler	Modgalasa	Secretion	Cut is made over mature part of the Modga, and gum secretion is collected and dried	March	May

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Table 1: (Continued)

Trade name	Botanical name	Vernacular name	Marketable part	Processing technique	Collection period	
					From	To
Phutu	<i>Mushroom</i>	Phutu	Whole plant	Phutu is collected during rainy session, after cleaning phutu chopped into small pieces and dried the sunlight	July	September
Nagar motha	<i>Cyperus rotundus</i> Linn.	Nagar motha	Rhizome	Rhizome is burnt along with fibers and cleaned	January	February
Farashaphool	<i>Butea monosperma</i> Lam.	Farashaphool	Flower	Farashaphool is collected from tree and dried in the shed	February	March
Peng beeja	<i>Celastrus paniculata</i> Willd.	Peng Beeja	Seed	Seeds are dried and sold in the market	October	November
Ram kanda/ Musli	<i>Chlorophytum tuberosum</i> Baker.	Ram Kanda/ Musli	Root	Collected tubers are cleaned and dried	September	December
Satawari Kanda	<i>Asparagus racemosus</i> , wild.	Chedavari	Root	Midrib of tubers is removed and dried in sunlight	November	December
Sragilasa	<i>Shorea robusta</i> Gaertn.	Saragilasa	Secretion	Gum is collected from the cut part of the plant and dried in the sunlight known as dhoop	March	May
Shahad	<i>Shahad</i>	Shahad	Shahad	Shahad is directly collected by cutting Honey hives into smaller pieces then filter it and stored the in dry place	October	May
Tenduphar	<i>Diospyros melanoxylon</i> Roxb.	Tenduphar	Fruit	Mature fruits are collected and dried in sunlight	April	June
Tikhurkanda	<i>Curcuma angustifolia</i>	Tikhurkanda	Rhizome	Rhizomes are collected and cut it into small pieces and grind, Five to Ten-time rinsed in water, then dried in sunlight white solid powder is obtained as known as Tikhur	November	January
Tori	<i>Madhuca latifolia</i> Roxb.	Tori	Seed	Seeds are removed from pulp and dried in sunlight	May	June

NTFPs: Non-timber forest produces

Table 2: List of weekly NTFPs market in district Bastar, investigated during the year 2006-2008

Name of the market	Market day	Category	Dependent villages	Number of NTFPs is sold in the market	Number of traders kochiyas
Bhanpuri	Monday	Big	27	19	12
Bastar	Monday	Big	21	10	16
Sonarpal	Saturday	Big	16	18	15
Mundagaon	Friday	Big	15	18	12
Nanadpura	Thursday	Big	14	17	16
Kesharpal	Friday	Big	21	18	15
Pakhnakongera	Sunday	Medium	11	12	13
Rotma	Saturday	Medium	10	14	13
Bamhani	Sunday	Medium	18	15	5
Kondagaon	Daily	Medium	16	13	3
Mardapal	Tuesday	Medium	11	12	7
Ratenga	Sunday	Small	9	6	3
Mandlapal	Monday	Small	6	12	5
Balenga	Thursday	Small	5	15	5
Bakavand	Sunday	Small	4	10	4
Ghotiya	Wednesday	Small	4	20	5
Dubeumargaon	Sunday	Small	2	10	7
Bakel	Monday	Small	1	20	6
Kungarpal	Sunday	Small	1	12	5

NTFPs: Non-timber forest produces

were surveyed. The market assessment was also done for per season total collection of NTFPs material, demand and the cost of the material in rupees. Information was also collected about the income from forest produce. Weekly markets were also visited during the survey to authenticate

the data provided by the villagers and Kochiya. Informants, market, and products were photographed during the visit.

### Identification and use of Medicinal Plants

Plant samples and plant parts collected during the survey were preserved as herbarium specimens and voucher specimen. The plant samples were identified with the help of published, authentic literature. The Flora of British India, Vol. I-VII by Hooker (1872, 1897), Cooke (1967), Panigrahi and Murti (1989), and Gamble (1935) have been consulted for the identification of plant sample. Some photographs were also taken during the field survey of the plants, plants parts, tribal's lifestyle, their plant related activities and collection of NTFPs in the forests of Bastar district. Besides that, some indigenous technology and equipment were also recorded in the field. In prepared herbarium, plants were arranged as per botanical name followed by their family and their habit.

### RESULT AND DISCUSSION

Tribals of Bastar district were found to collect a variety of plant produces from forests, for their livelihood security. Those collected plant produces were NTFPs. In the present study, 44 plants producing NTFP were noted to be collected by tribals in 20 villages of Bastar district.

Table 3: List of potentially rich villages and marketplace for NTFPs in Bastar district, for livelihood security, investigated during the year 2006-2008

Local name of the plant	Botanical name	Marketable part	Potentially rich village	Potential market places
Aamguthali	<i>Mangifera indica</i> Linn.	Seed	Jhhatiban, Paisara, Hirri, Bhumka, Shankarpur, Badedongar Platpara, Pandeypara	Kondagaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpa, Bakawand
Aonla	<i>Embllica officinalis</i> Gaertn.	Fruit	Mundagaon, Mandlapal, Chichadi, Pharasagura, Bakel	Keshkal, Bahigaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpal, Bakawand
Bahera	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Fruitw	Bodra, Bhaigsaon, Rotma, Nadisagar, Madhota, Bakel, Usri, Balenga	Keshlur, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Karpavand
Baibirang	<i>Embelia tsjeriam</i> cottem	Fruit	Kumhli, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Kondagaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpal, Bakawand
Charghuthali	<i>Buchanania lanzan</i> , Roxb.	Seed	Kumhli, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Kondagaon, Pharasgaon, Jagdalpur, Bahigaon, Bakawand
Charota	<i>Cassia tora</i> , Linn.	Seed	Bakel, Usri, Pathri, Mandlapal, Sudhapal, Baniyagaon, Nadisagar, Bhond, Lamker	Keshkal, Dhanora, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpal, Bakawand
Dhawaiphool	<i>Woodfurdia fruticosa</i> , Salisb	Flower	Bamhani, Ptelpara, Chichpolang, Chargaon Sambalpur	Kondagaon, Pharasgaon, Jagdalpur
Emli	<i>Tamarindus indica</i> Linn.	Fruit, Seed	Mundagaon, Bodra, Rajpur, Bodanpal, Sudhapal Pathri	Keshkal Kondagaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar
Kalmegh	<i>Andrographis paniculata</i> , Burm.f.	Whole plant	Chichpolang, Alnar Alor, Badedongar, Chichdongari, Kachora	Kondagaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar
Karanj	<i>Pongamia pinnata</i> Linn.	Seed	Chichpolang, Alnar Alor Badedongar, Chichdongari, Kachora	Makri, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Bakawand
Kurnhiphool	<i>Careya arborea</i>	Flower	Kungarpal, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpal
Kusum	<i>Schleichera oleosa</i> Willd.	Seed	Semalnaar, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Kondagaon
Lac	<i>Laccifer lacca</i>	Insect secretion	Bamni, Mungapadar, Sambalpur, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Pharasgaon, Kondagaon
Mahua	<i>Madhuca latifolia</i> Roxb	flower, seed	Kumhli, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Kondagaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpal
Modgalasa	<i>Lannea grandis</i> (Dennst) Engler	Plant secretion	Kungarpal, Mungapadar, Echhapur, Baniyagaon, Shivni, Karmari, Sorgaon, Jamgaon, Salemeta	Kesharpal, Bakawand
Mushroom/ Phutu	<i>Fungi</i>	Entire plant	Sambalpur, Masora, Chichpolang	Kondagaon, Jagdalpur, Kumhrawand
Nagarmotha	<i>Cyperus rotundus</i> Linn.	Root	Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Kondagaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpal
Tori	<i>Cyperus rotundus</i> Linn.	Fruit	Sambalpur, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Kondagaon, Pharasgaon, Bhanpuri, Bastar, Kesharpal
Kosa	Cocoon	Insect Cocoon	Badedongar, Echhapur, Baniyagaon, Shivni, Karmari, Murkuchi, Sorgaon, Jamgaon, Salemeta	Kondagaon, Pharasgaon, Jagdalpur, Bhanpuri, Bastar, Kesharpal

NTFPs: Non-timber forest produces

Plant and plant produce collected by the tribals from the plants were seeds of 11 plants, fruits of 11, roots of 3, Rhizomes of 4, flowers of 4, and secretory products from 3 plants, whereas 4 whole plants. Lakh and *Cocoons* were also collected by the tribals from the forest. Collection of NTFP from the forest was found to be another source of livelihood for the tribals of Bastar. There were 44 NTFP was found to be collected by the tribals of 20 villages in

Bastar district during the present study. Seeds, fruits, roots, rhizomes, flowers, secretion from plants, and whole plant collection were found to be done from the forest. The majority of the collection was noticed during the summer months while no collection was observed during the rainy months. As the nature of collected NTFPs were different, hence different methods of processing such as drying, boiling, steam boiling, shed drying, and frequent

**Table 4: Marketable quantity and total value of major NTFPs/season in Bastar district, investigated during the year 2006-2008**

Local name of the plant	Botanical name of the plant	Marketable part of the plant	Quantity (quintals)	Average rate (Rs./Qtl.)	Total value (Rs. In Lacs)
Mahua	<i>Madhuca latifolia</i> Roxb	Flower	6646	1035.30	65.53
Charota	<i>Cassia tora</i> Linn.	Seed	3963	465.10	17.55
Emliphool	<i>Tamarindus indica</i> Linn.	Fruit without seeds	2488	1491.00	35.33
Aonla	<i>Emblica officinalis</i> Gaertn.	Flower	2003	1825.90	34.83
Bhuileem	<i>Andrographis paniculata</i> , Burm.f.	Plant	1601	519.70	7.91
Emliaati	<i>Tamarindus indica</i> Linn.	Fruit with seeds	1483	640.50	9.04
Lac	<i>Laccifer lacca</i>	Shellac	1312	12,583.20	150.15
Tori	<i>Madhuca latifolia</i> Roxb	Seed	1287	970.70	11.89
Dhawaiphool	<i>Woodfordia fruticosa</i> Salisb	Flower	959	521.80	4.75
Baheda	<i>Terminalia bellirica</i> (Gaertn.) Roxb.	Fruit	907	433.10	3.73
Kumhiphool	<i>Careya arborea</i>	Flower	791	450.40	3.39
Nagarmotha	<i>Cyperus rotundus</i> Linn.	Root	641	535.50	3.26
Baibirang	<i>Embelia tsjeriam</i> cotten	Fruit	601	157.50	9.55
Kusum	<i>Schleichera trijuga</i> Willd.	Seed	517	582.70	2.86
Mushroom/Phutu	<i>Phutu</i>	Entire plant	492	3340.50	15.66
ModgaLasa	<i>Lannea grandis</i> (Dennst) Engler	Secretion	442	630.00	2.65
Aamguthali	<i>Mangifera indica</i> Linn.	Seed	418	313.40	1.23
Charghuthali	<i>Buchanania lanzan</i> Roxb.	Seed	266	3130.05	7.91
Karanji	<i>Pongamia glabra</i> Linn.	Seed	263	546.00	1.36
Kosa/Phokla		Cocoon	1,81,524	305.02	3.06
Total			27,080		391.64

NTFPs: Non-timber forest produces



**Plate 1:** (a) Non-timber forest produces (NTFPs) market at Bastar. (b) Trading in NTFPs market at Bastar. (c) Flowers of *Madhuca latifolia*. (d) Edible mushroom-Boda. (e) Collection of *Bauhinia* leaves. (f) Edible mushroom-Boda

rinsing was found to be adopted by the tribals (Plate 1). The largely collected NTFPs from the forest were found to be used as medicine for treatment of various ailments. The NTFPs of animal origin like silk and lac had a great value in the local market. Edible mushroom-like phutu was also found to be sold in the local market by the tribals.

The ethnobotanical resources not only provide the three basic needs of life, i.e. food, shelter, and clothing but also strengthen the economic status of the forest dwellers. These resources provide incentives to rural poor for maintaining the sustainability of forest ecosystem and help to preserve biological diversity and traditional knowledge. Maharashtra, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Orissa, and Andhra Pradesh constitute nearly 65% tribal population of India and contribute about 70% of NTFPs production (Guha, 1983).

NTFPs were found to be collected in large scale by the tribals as a big market for the sale of NTFPs was noticed in Bastar, in this way tribals get the value of their collection without going to the city. In the present investigation, such 69 potential markets were identified for the sale of NTFPs. Amla, emliful, charota, and mahua flowers were found to be collected 1000 quintals as their demand in the international market was found to be very high. In one season, the business of NTFPs in local markets of Bastar was approximately 391 lakhs. These markets had exhibited great potential for the sale of NTFPs in Bastar. Markets in Bastar were found to be weekly market. Each market was found to be known for the sale of very specific NTFPs as particular collection comes to that market in very large quantity; however, some markets were noticed where all the collected NTFPs were found to be sold. Bhatnagar *et al.*, 1973 recorded on Medico-botanical studies on the flora of Ghatigaon Forests, Gwalior, Madhya Pradesh. Chamberlain *et al.*, 1998 studied on non-timber forest products - the other forest products. Freed, 2001 noticed

on non-timber forest products in local economies: The case of Mason Country, Washington. Gould *et al.*, 1998 studied on sustainable production of non-timber forest products. Jain, 1988 studied on tribal clans in Central India and their role in conservation. Jain and Patole, 2001 recorded on some Threatened Plants of Pachmarhi Bioserve of Madhya Pradesh. Malhotra *et al.*, 1991 recorded on the role of NTFP in Village Economy. Some references books used for the preparation of the current paper were Tribal Welfare Development and Administration, International Book Distribution, Dehradun (Negi, 2006). Forests: The non-wood resources (Dwivedi, 2007). Wild plant-foods of the tribals of Bastar (Jain, 1963). Forestry in British and post-British India (Guha, 1983).

Present studies, therefore, bear special significance, to be first of its kind to document the traditional knowledge of the primitive tribes of Bastar, Chhattisgarh as well as in India, with a systematic recording the tribal knowledge. The survey of the tribals of Bastar has indicated their dependence on natural products, derived mostly from the forests. The study also indicated the efforts of tribals for sustainable utilization of forest products by various rituals and traditions. Sustainability of natural resources was observed around the settlements of tribals.

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