SEASONAL AVAILABILITY OF NON-TIMBER FOREST PRODUCTS COLLECTED BY THE TRIBALS IN GANDIGADHA RESERVE FORESTS OF DISTRICT MAYURBHANJ, ORISSA

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Introduction

Non-wood Forest Products (NWFP) have been defined as 'all goods of biological origin other than wood as well as services derived from forests and allied land uses' (Anon, 1995). The communities living in close vicinity of forests are particularly dependent on forest for their needs of livelihood and food security (Bhattacharya *et al.,* 2004). NTFP are most extensively used by them to meet dietary shortfalls and to supplement household income during particular lean season in the year (Anon, 2002). During this period , the consumption of NTFP increases. In many states of India, specially, Bihar, Orissa, Madhya Pradesh and Himachal Pradesh, 80 per cent of forest dwellers depend on forests for 25-50 per cent of annual food requirements. (Malhotra *et al.*, 1992).

Non timber forest products offer great deal of opportunity in the economic development of the rural masses as they provide many valuable items viz, spices and condiments, essential oils and fatty oils, gums and resins, bamboo and canes, fiber and flosses, medicinal plants and edibles besides various animal products. NTFPs provide local job opportunity to millions of people every year and contribute significantly for rural economy as more than half of the products are consumed by the tribals living in and around the forest area to meet their basic needs. Thus, the economy of rural masses depends mainly on various non timber forest products available in their area. These NTFPs are mainly collected by the tribal women along with their other family members. Important NTFPs and their collection from the forest area of district Mayurbhanj are discussed here.

Mayurbhanj, the biggest district of Orissa, exhibits varied topology extending from plain land to highly undulating hill ranges. As the geography speaks, most of the area is in the hill ranges of extended Chhotnagpur platue and is covered by the Similipal forest ranges. The forest is one of the tropical rain forests having wide biodiversity and thick species abundance. Due to lack of sufficient plain land in the district, most of the forest and hill dwellers are not in practice of agriculture as the chief source of livelihood. In Mayurbhanj district tribes occupy a big chunk of the population constituting 52% of it. Fifty three communities both aboriginal and migrated are found in the district glorifying the rich heritage of tribal culture. Most of the population is scheduled tribes, followed by scheduled castes and then the general casts who depend on the forest to fetch their livelihood (Rout, 2004).

Objectives

The present study is an attempt to assess the role of NTFP in the food habit as well as economic development of the most dependent communities, the Santal tribe of Gandigadha Reserve Forest of district Mayurbhanj of Orissa.

The specific objectives of the study were as follows.

- Identification of NTFP, which play important role in food availability and revenue generation during different season.
- Analysis of the consumption pattern of NTFP among the Santal tribals during different seasons.

Methodology

The data on socio-economic status and collection of Non Timber Forest Products were collected in pre designed format in tribal dominated villages located in Mayurbhanj district, Orissa. For this purposes Participatory Resource Mapping exercises were conducted in selected villages located in the periphery of the forests to map the areas where the indigenous communities were going for NTFP collection. A baseline data on the collectors were gathered before hand before this exercise. People (NTFP collectors) were asked to draw out areas of collection of both commercial and non commercial forest produce. This became the village base map which was used to start the transect surveys for the resource mapping.

A questionnaire was framed to bring in all the attributes pertaining to anthropological and seasonal aspects on NTFP into the data sheet. The trend in monthly seasonal collection of NTFP by the tribal was statistically examined and the results viz parts used, average quantity of NTFP collected by each family, harvest method and consumption were tabulated (Table 1).

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Table 1

Important Non Timber Forest Products (NTFP) in the Gandigadha Reserve Forest.

Botanical name (Family) Vernacular (Oriya) name	Parts collected	Seasonal availability	Harvesting method	Quantity collected per day	Total Quantity collected (kg)	Consumption self / sell	Price in Rs./Kg.
Abrus precatorius (Fabaceae) Kaincha	Seeds	All seasons	Plucking	100-200 gm	2-3 kg	Sell	50
Aegle marmelos (Rutaceae) Bael	Fruit	April	Plucking	100-150 pcs.	400-500pcs.	Self & sell	4 per pc.
Amorphophalus campanulatus (Araceae) Ulua	Stolon	All seasons	Digging	5-10 kg	20-25 kg	Self	5
Andrographis paniculata (Acanthaceae) Bhuin-nimba	Whole plant	All seasons	Plucking	6-7kg	2 Qtl.	Self & sell	7
Asparagus racemosus (Liliaceae) Satabari	Tuber	Nov- Dec	Plucking	3-4 kg	40-50kg	Self & sell	10
Azadirachta indica (Meliaceae) Neema	Flower, Fruit (seed)	March July	Plucking	5-6 kg	30-40kg	Sell	4
Baringtonia acutangula (Lecythidacea) Hinjal	Fruit	All seasons	Plucking	1-2kg	15-20 kg	Self	*
Bauhinia vahlii (Caesalpiniaceae) Siali	Leaf, bark	All seasons	Plucking	1000-1200 leaves 8 - 10 kg	4-5 lakh leaves 15 - 16 kg	Self	7 per 100 leaves 13/Kg
Bombax ceiba (Bombacaceae) Simuli	Fruit	April-May	Plucking	12-15kg	40-50 kg	Self & sell	15
Borassus flabellifer (Arecaceae) Tala	Fruit	July	Plucking	20-30 pcs.	80-90 pcs	Self	3-5 per pc.
Buchanania lanzan (Anacardiaceae) Chara	Fruit	May-June	Plucking	2-3 kg	20 kg	Self & sell	25
Capparis zeylanica (Capparidaceae) Pindar	Fruit	May-June	Plucking	4 kg	15 kg	Self	*
Careya arborea (Lecythidaceae) Kumbhi	Fruit	May-June	Plucking	8-10 kg	30-40 kg	Self & sell	3
Cassia fistula (Caesalpiniaceae) Sunari	Fruit	All seasons	Plucking	5-10 pcs	20-25 pcs	Self	*
Catunaregam spinosa (Rubiaceae) Potua	Fruit	All seasons	Plucking	1-2 kg	8-10 kg	Self	*
Celastrus paniculatus (Celastraceae) Pingu	Fruit	Dec-Jan	Plucking	2-3 kg	10-15 kg	Self	40
Combretum roxburghii (Combretaceae) Atundi	Fruit	All seasons	Plucking	7-8 kg	30-40 kg	Self	4
Dillenia pentagyna (Dilleniaceae) Rai	Flower	May-June	Plucking	5 kg	60 kg	Self	5
Dioscorea bulbifera (Dioscoreaceae) Kanta alu	Tuber	Oct-Nov	Digging	4-5 kg	10-15 kg	Self	10
Dioscorea glabra (Dioscoreaceae) Kanta alu	Tuber	Oct-Nov	Digging	7-8 kg	30-40 kg	Self	8
Diospyros malabarica (Ebenaceae) Mankadakendu	Fruit	May	Plucking	5-6 kg	20-25 kg	Self	10
Diospyros melanoxylon (Ebenaceae) Kendu	Leaf Fruit	All seasons May	Plucking	4-6 kg	15-20 kg	Self	15
Flacourtia jangomas (Flacourtiaceae) Baincha koli	Fruit	March	Plucking	2-3 kg	10-12 kg	Self & sell	10
Gardenia latifolia (Rubiaceae) Dambru	Fruit	All seasons	Plucking	7-8 kg	35-40 kg	Self & sell	2

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Botanical name (Family) Vernacular (Oriya) name	Parts collected	Seasonal availability	Harvesting method	Quantity collected per day	Total Quantity collected (kg)	Consumption self /sell	Price in Rs./Kg.
Glycyrrhiza glabra (Fabaceae) Yashti-madhu	Bark	All seasons	Plucking	1-2 kg	6-7 kg	Sell	120
Helicteres isora (Sterculiaceae) Mudimudika	Fruit	May-June	Plucking	20-25 pcs	70-80 pcs	Self	*
Hemidesmus indicus (Asclepiadaceae) Antamula	Root	All seasons	Digging	3-4 kg	15-20 kg	Self & sell	10
Holarrhena pubescence (Apocynaceae) Kuduchi	Bark, Fruit	All seasons	Scraping Plucking	4-5 kg	10-12 kg	Sell	40
Ichnocarpus frutescens (Apocynaceae) Dudhilata	Stem	All season	Plucking	1000-1500 nos.	6000-7000 kg	Self & sell	6 per bundle
Ipomoea digitata (Convolvulaceae) Bhuin-kakharu	Tuber	All seasons	Digging	2-3 kg	8-10 kg	Sell	8
Litsea glutinosa (Lauraceae) Paja	Bark	All seasons	Plucking	3-4 kg	10-12 kg	Sell	20
Madhuca longifolia (Sapotaceae) Mahula	Flower	Mar-April	Dropping	4-5Kg	30-40 kg	Self & sell	12
Mangifera indica (Anacardiaceae) Amba	Fruit	May-June	Plucking	5-10 kg	30 kg.	Self & sell	15
Mimosa pudica (Mimosaceae) Lajkoli	Root	All seasons	Digging	2-3 kg	15-20 kg	Self & sell	60
Mushroom Chhatu	Mushroom	July	Plucking	1-2kg	20-25 kg	Self & Sell	30
Phoenix sylvestris (Arecaceae) Khejuri	Leaf, Fruit	All seasons	Plucking	7-8 kg	10-15 kg	Self & sell	10
Phyllanthus emblica (Euphorbiaceae`) Amla	Fruit	Oct-Jan	Plucking	2-3 kg.	15 kg	Self & sell	6
Phyllanthus niruri (Euphorbiaceae) Bhuin amla	Whole plant	All seasons	Plucking	1-2 kg	8-10 kg	Self & sell	8
Pongamia pinnata (Fabaceae) Karanja	Fruit	May-June	Digging	5 kg	10 kg	Sell	14
Rauvolfia serpentina (Apocynaceae) Patalgaruda	Root, Fruit	All seasons	Digging Plucking	1 kg	7-8 kg	Self & sell	120 800
Schleichera oleosa (Sapindaceae) Kusuma	Seeds	June	Plucking	8-10 kg	50-60 kg	Self & sell	7
Semecarpus anacardium (Anacardiaceae) Bhalia	Fruit	Dec-Jan	Plucking	2-3 kg	7-8 kg	Self & sell	4
Shorea robusta (Dipterocarpaceae) Sal	Seeds	Aug-Sept.	Dropping	2-3 kg	20-25 kg	Sell	7
	Resin	All months	Scrapping	50 gm	2-3 kg	Self & sell	100
	Tooth stick	All months	Plucking	30-40 pcs	1000-1200 pcs	Self & sell	2/10 pcs.
	Leaves	All seasons	Plucking	1000-1200 nos	7-8 lakhs	Sell	20/1000 leaves
Smilax zeylanica (Smilacaceae) Ramdantuni	Root	All seasons	Digging	1 Kg	4 kg	Self	6
Solena amplexicaulis (Cucurbitaceae) Banakunduri	Fruit	All seasons	Plucking	2-3 kg	20-30 kg	Self & sell	15
Spondias pinnata (Anacardiaceae) Ambada	Fruit	Feb-March	Plucking	8-10 kg	15-20 kg	Sell	8
Strychnos nux-vomica (Loganiaceae) Kuchila	Fruit	Dec-Jan	Plucking	2-3 kg	5-10 kg	Sell	10
Syzygium cumini (Myrtaceae) Jamu koli	Fruit	May-June	Plucking	1-2 kg	5-6 kg	Self	8-9
Tamarindus indica (Caesalpiniaceae) Tentuli	Fruit	Apr-May	Plucking	10-12 Kg	30-40 kg	Self & sell	6-7
Terminalia arjuna (Combretaceae) Arjuna	Bark	All seasons	Scraping	1-2 Kg	5-10 kg	Sell	2

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Botanical name (Family) Vernacular (Oriya) name	Parts collected	Seasonal availability	Harvesting method	Quantity collected per day	Total Quantity collected (kg)	Consumption self /sell	Price in Rs./Kg.
Terminalia bellirica (Combretaceae) Bahada	Fruit Gum	Oct-Jan	Plucking	3 -4 kg.	30-40 kg	Self & sell	2-3
Terminalia chebula (Combretaceae) Harida	Fruit	Oct-Jan	Plucking	5-6 kg.	40-50 kg	Self & sell	4
	Fruit	Nov-Dec	Plucking	4-5 kg	10-12 kg	Sell	2
Terminalia tomentosa (Combretaceae) Asana	Gum Tasar						
Ziziphus mauritiana (Rhamnaceae) Bora koli	Fruit	April	Plucking	6-7 kg	25-30 kg	Self & sell	5

* Non tradable items, only used for self consumption

Result and Discussion

Detailed information about seasonal availability of NTFP, collection period, consumption pattern and quantity collected has been summarized in table. Fifty-four important NTFP species have been reported to be collected by the villagers in Gandigadha for consumption. These do not include honey, red ant, fish and flesh availability to villagers. Most of the species collected are used for domestic consumption. However, a few spew species like 'Sal' (*Shorea robusta*) leaves, tooth stick and seeds 'Mahula' (*Madhuca indica*) flower and fruit and mushroom 'Chara' (*Buchanania lanjan*) are collected and sold to local traders. Besides, some NTFP are sold in the open market after meeting the domestic consumption. The collection period and quantity depend on the availability of NTFP. A majority of species are available during April to July; the maximum availability being during June followed by May to July.

After collating all the data into a database to be used and other primary information is collected from NTFP collectors of the periphery villages to get indigenous information and socio economic details which supplement the mapping related work of the region. In this information one can actually see whether the NTFP collectors of a certain village have direct pressure to the natural resource by means of over extraction of resources. It is possible to analyze questions like - does this area want attention for conservation or a better management method for sustainable harvest?

While collecting information from NTFP collectors during meetings and surveys, questions relating to indigenous information regarding economical and ecological perspectives of the produce like quantity, quality of produce were asked and recorded. The number of days taken to collect the produce and methods of harvest, seasonality of species, Price and trade related information was also recorded. Recordings were also made on the number of NTFP collectors and income generated per day and season of collection. People from the village were taken along for the surveys to assess the health of the forests and their detailed knowledge about the area was found very useful for this work.

By following these steps in the method suggested one can easily devise a good plan for resource monitoring for NTFPs and also learn about the health of the forest from which it is harvested. The application of this method is found useful in all areas and can be utilized by small field teams for determining the amount of NTFP harvesting which can be sustainable for the future of forests, people and economy.

Conclusion

NTFPs are a significant source of subsistence production, income and employment to tribal people in and around forests. A large population of tribals and other forest dwellers depend on various NTFPs which have great socio-economic significance in the context of employment and income generation for very large population especially the weaker section of the society including tribals. The NTFPs like 'Sal' (*Shorea robusta*) leaves, tooth stick and seeds, 'Mahula' (*Madhuca indica*) flower and fruit, 'Chara' (*Buchanania lanjan*) fruits, seeds and mushroom are most common items which are collected by the tribals in different seasons for their livelihood regularly. Most of the NTFPs are collected in difficult conditions in the remote tribal areas where it is difficult to maintain the quality so that the user agencies readily accept the NTFPs as raw material which are sold to local traders. Thus all possible steps need to be taken for providing self employment and quick returns to forest fringe dwellers. Among the 54 NTFP species from selected area 49 nos. of NTFPs are sold and 5 nos of NTFP like fruits of *Baringtonia acutangula, Capparis zeylanica, Cassia fistula, Catunaregam spinosa* and *Helicteres isora* are used for self consumption.

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SUMMARY

Non-timber Forest Products (NTFP) contribute an integral component of the food for the communities dependent on forests. Their role becomes more significant for less agricultural dependent communities with small land holding residing in remote forests. Fifty-four important NTFP species have been reported to be collected by the villagers in Gandigadha for consumption. However, a few new species like 'Sal' (*Shorea robusta*) leaves, tooth stick and seeds 'Mahula' (*Madhuca indica*) flower and fruit, 'Chara' (*Buchanania lanjan*) fruits, seeds and mushroom are collected and sold to local traders.

Key words : Non Timber Forest Products (NTFP), Forest Dwellers, Tribals, Socio-economic significance.

जिला मयूरभंज, उड़ीसा के गांधीगढ़ आरक्षित वनों के आदिवासियों द्वारा संग्रह की जाती गैर प्रकाष्ठ वनोपजों की मौसमवार उपलभ्यता

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सारांश

गैर प्रकाष्ठ वनोपज वनों पर निर्भर समुदायों के भोजन में अनिवार्य संघटक का योगदान करती है। कृषि पर कम निर्भर समुदायों के लिए, जिनके पास जमीन कम होती है ओर जो सुदूरस्थ वनों में रहते है उनकी भूमिका और भी महत्वपूर्ण बन जाती है। उपयोग करने के लिए गांधीगढ़ में वहाँ के ग्रामवासियों द्वारा चौवन महत्त्वपूर्ण गैर प्रकाष्ठ वनोपजों को सूचित किया गया है। तथापि, कुछ नई जातियाँ जैसे शाल (*शोरिया रोबस्टा*) की पत्तियां,दांत केरेदनी और बीज साहुल (*मधुका इण्डिका*) इसके फूल और फल, चारा (*बुकनेनिया लैनजन*) के फल बीज और खुम्बियां भी यहां एकत्र करके स्थानीय व्यापारियों को बेची जाती हैं।

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