

Importance of Non-Timber Forest Products (NTFPs) in Native Household Economy in Sonamukhi C.D. Block of Bankura District, West Bengal

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Abstract : In 2001 the World Bank estimates that one fourth of the world's poor depend directly or indirectly on forest for their livelihood. Non-Timber Forest Products (NTFPs) play an important role in the rural economy in terms of providing employment, income potential and life support sustenance. In Sonamukhi Block, most of the forest based households are directly or indirectly depending on the collection of NTFPs. NTFPs are the main source of rural economy of the poor people and the additional income source of the rich farmers of forest based households in Sonamukhi Block. This research article is an empirical investigation to chalk out the share of NTFPs income in the total household income and the importance of NTFPs on forest based rural livelihood and rural economy of the concerned study area.

IndexTerms - Livelihood, NTFPs, Rural economy

1.0. INTRODUCTION

According to De Beer and McDermott (1989) 'The Non-Timber Forest Products (NTFPs) encompasses all biological materials other than timber, which are extracted from forests for human use'. Food and Agricultural Organization (F.A.O., 1995) stated that NTFPs can provide important community needs for improvement rural livelihood, contribute to household food security and nutrition, and help to generate additional employment and income. Marketable NTFPs can provide an important means for economic growth and sustainable forest management in local communities (Farinola *et al*, 2014). Forest is the most important source of NTFPs in Bankura district in general and Sonamukhi block in particular. Sonamukhi block is bestowed with rich natural resources as well as different ecological diversity. The total land area of the block is 368.3 sq. km. and about 28.84% (Census of India, 2011) area is cover with natural sal forest. From this forest the rural people collect different types of forest resources like fire woods, fodder, and forest fruits etc. for their day to day requirement and earning money. Collection of *sal seed, kendu leaves, mahua flower, mahua fruit and kendu leaves* served as the source of auxiliary income (Ghosal *et al*. 2011) and through these ways the forest offers sustenance to the rural economy of the region. The forest based rural households of the study area are directly or indirectly depend on the collection of NTFPs for wood, food and fodder for their domestic needs as well as improving household economy.

2.0. STUDY AREA

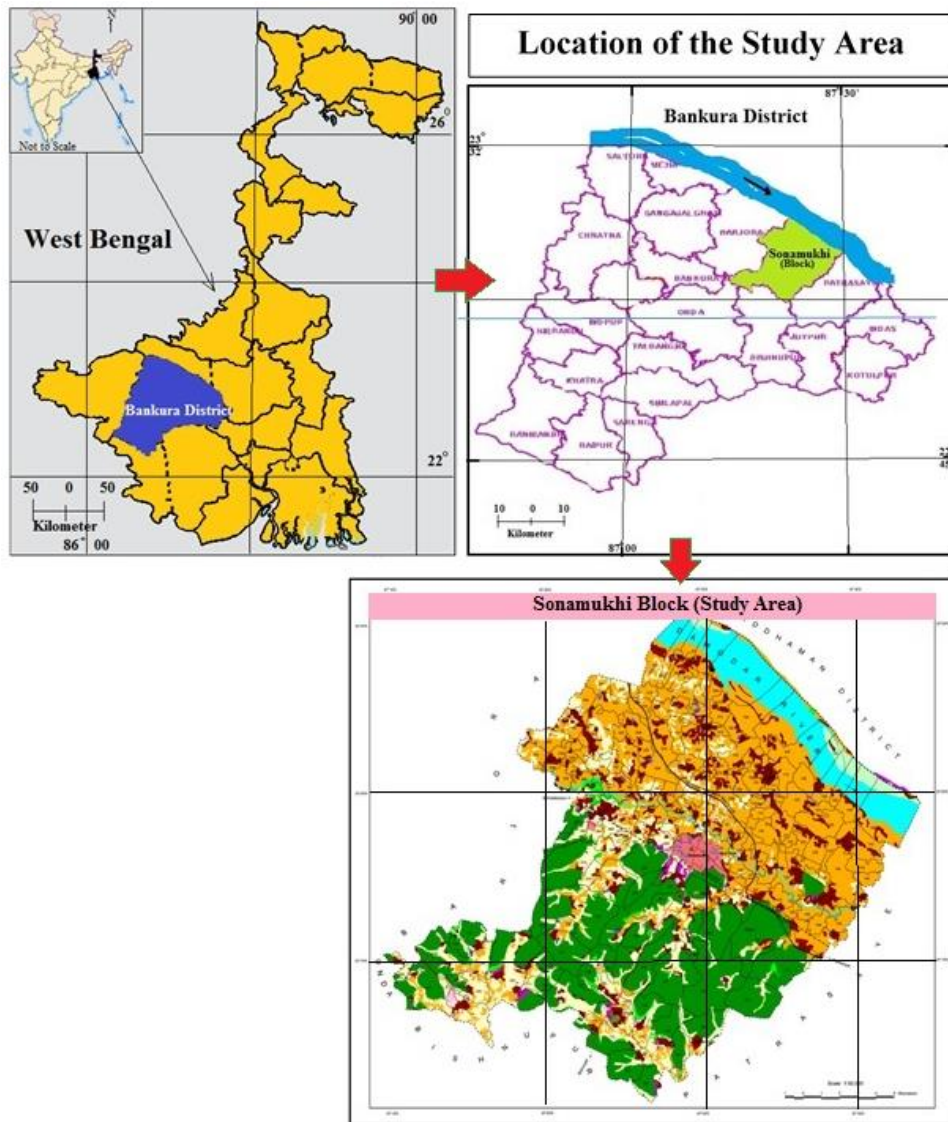
The Sonamukhi is a Community Development (C.D.) unit in Bishnupur Sub-Division in Bankura District of West Bengal (Map 1). The block is situated in the eastern part of the district bounded by the latitudes of 23°10' N to 23° 25' N and longitude of 87°15' E to 87° 30' E encompassing 368.3 sq. km area and consists of ten Gram Panchayats with 158697 population and the population density is 430 persons /sq. km. (Census of India, 2011). The block is geologically, geomorphologically, lithologically, climatologically, culturally as well as biologically diverse and unique. The maximum temperature varies in between 42°C to 46°C during the summer (April-May) and during winter the minimum temperature varies in between 8°C to 13°C (Dec.-Jan.) and the annual average rainfall ranges between 130 cm and 140 cm. The soils are mainly alluvial, mixed lateritic and red soil. The arid lateritic soil is not fertile. The productive potentiality of the soil is medium. These soils are cultivated for paddy. Major forest type is Tropical Dry Deciduous dominated by Sal. The major vegetation species other than Sal are *Palash, Mahua (Madhuca indica), Piyal (Buchanania latifolia), Simul (Bombex malabaricam), Nim (Azadirachta indica), Kurchi (Holorrhenna antidysenterica), Eucalyptus (Eucalyptus Globulus) and Akashmoni (Acacia Auriculiformis) etc.*

3.0. OBJECTIVES

This research article is the outcome of a field based empirical survey which has examined the value of NTFPs in terms of household income as well as commercial importance.

4.0. DATA BASE AND METHOD

Purposive as well as random sampling methods have used and the primary data have collected through field survey and face to face household interview based on structured questionnaire in 125 households. Secondary data have collected from Divisional Forest Officer (D.F.O), Forest ranger officer and the concerned Block Development Officer (B.D.O). In addition district Gazetteer, statistical hand book, census report, books, journals, newspapers and e-articles are used meticulously.



Map 1: Location of the Study Area

5.0. RESULT AND DISCUSSION

5.1. Importance of NTFPs in Sonamukhi C.D. Block

The collection of NTFPs is less ecologically destructive and viewed as more compatible with biodiversity conservation than timber extraction or agriculture. NTFPs are harvested for both subsistence and commercial use and added to people's livelihood security, especially for rural dwellers (Shaenleton and Shaenleton, 2004). These products play a role in the household economy of not only the poor, but also the rich. In the study area NTFPs act an important role in the livelihood of the rural poor people as a source of food, medicine, construction materials and income. Sometimes they process the products and transfer to market. *Sal* leaves are available throughout the year and making the *sal* leaf plate which is appears the main source of income.

5.2. Major Non-Timber Forest Products and their characteristics

Chilalo (2011) have categorized the non-timber forest products into two types on the basis of their commercial values. The first one is high value products which have great commercial value and the second one is low value products which are only serve households for subsistence purposes (Table 1).

Table 1: Major NTFPs in the Study area

Sl. No.	Types of NTFP	Household Requirement	Remarks
1.	(i) Forest Fruits (<i>mahua fruits, piyal fruits, Ban kul, Kusum, date palm, bantch etc.</i>) (ii) Forest Flower (<i>mahua flower</i>) (iii) Other (<i>mushroom</i>)	Food/Nutrition	Mainly used for domestic/ subsistence purposes
2.	<i>Mushroom, green sal leaves, mahua flower, kendu leaves, forest fruits, date palm leaves</i>	Earning Money	All the products have the maximum potential and economic feasibility
3.	<i>Forest twigs, dry leaves, trees' branches, dead trees, jhanti</i>	Energy	People collect these products and use as fuel for domestic consumption
4.	Fodder (<i>like green sal leaves, green twigs, grass</i>)	Fodder	Mainly used for domestic animals like cow, goat and lamb etc.
5.	Sal and mahua seed, medicinal herbs like <i>Kurchi, Bashak, Kalmegh</i>	Medicinal	Use as medicine
6.	<i>Jhanti, climbers, branches of trees</i>	Construction	Making hut, fencing and household equipment and utensils

Source: Field Survey, 2015-16

5.4. NTFPs and Native Household Economy

Shiva and Verma (2002) have classified in many ways according to end use (medicine, food, drink etc.) and by the part used (roots, leaves, barks etc.). As they also categorized NTFPs as plant and animal products but in the study area the plant products are more significant than the animal products. The household economy of the concerned block mainly depends on the following forest products:

5.4.1 Medical Value

The value includes medicinal plants, bark, seed, flower, leaf and stem etc. The rural people are collecting different types of herbs, like *kurchi, kalmegh, bashak and bantulsi* for use as substitute of allopathic medicine. *Neem, simul and sal* trees have also great medicinal value and people use the bark, seeds, fruits, and flowers for different purposes (Table 2 and 4). The people of Dhansimla, Kochdihi, Panchal, Manikbazar and Hamirhati G.P. are collecting these medicinal plants and use for the reduction of their skin, tooth and stomach diseases. In the study, mainly schedule tribe as well as schedule caste people are involved for collecting, processing, using and sometimes marketing the medicinal plants through a specific chain (Figure 1). *Kurchi (Holarrhen Antidysenterica)* and *Neem (Azadirachta Indica)* are the most important medicinal plants for the inhabitants of the forest based households of concern block. Near about 40.2% and 32.8% households out of 125 no. of households are widely used these medicinal plants for cure from stomach, skin and tooth diseases (Figure 2).

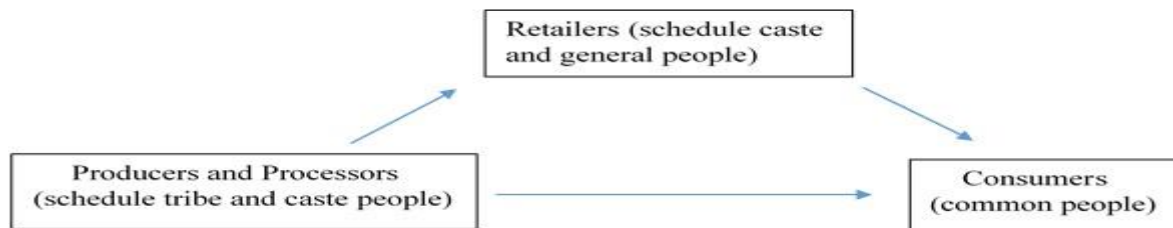


Figure 1: Market chain of medicinal plants in Sonamukhi Block

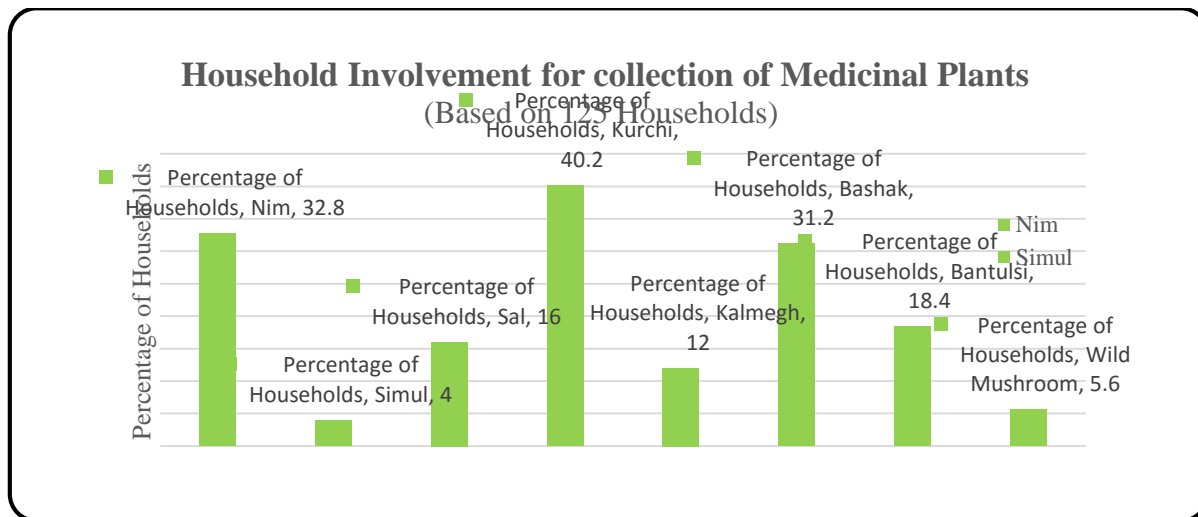


Figure 2: Involvement of Households for collecting of Medical plants

Table 2: Medicinal Plants and their useable parts

Name of the medicinal Plants/ Herbs	Useable part	Use for reduction of	People involvement
Neem (<i>Azadirachta Indica</i>)	Leaf, Seed, Bark, Stem, Fruit	Stomach, Skin and tooth diseases	Schedule caste and tribe people (mainly whose annual income below ten thousands)
Simul (<i>BombaxCeiba</i>)	Bark	Stomach and Skin diseases	
Sal (<i>Shorea Robusta</i>)	Seed, Flower	Oil use for masseuses	
Kurchi (<i>Holarrhen Antidysenterica</i>)	Bark, leaves, flower	Stomach and Skin diseases	
Kalmegh (<i>Andrographis Paniculate</i>)	Leaf, stem	Stomach, skin diseases and body pain, treatment of snake bite	
Vasaka (<i>Adhatoda Vasica</i>)	Leaf, root	Asthma, Bronchitis	
Bantulsi (<i>Croton Bonplandianum</i>)	Leaf	Skin diseases	
Mushroom	Total part	Stomach diseases of Domestic animal	

Source: Field Survey, 2017

5.4.2. Food products:

Wild fruits, flower, honey and mushrooms are the most valuable non-timber forest food product. The forest based villagers of the concerned block have collected different forest products like i) Forest Fruits (*mahua fruits, piyal fruits, Ban kul, Kusum, date palm, bantch etc.*), (ii) Forest Flower (*mahua flower*) and (iii) Other (*mushroom*) etc. The products are mainly used for domestic purposes and sometimes the products

are delivered in the rural market for selling. In this way, the poor people earn money and substituted their household economy in one hand and on the other the rich farmers earn additional income and enjoying these activities throughout the year. The market chain for trading of wild fruits is very much significant and most of the people are engaged in collecting, processing as well as trading of non-timber food products per day.(Figure 3 and 5). As these products are available in a particular season so, the trading and marketing network is not continuing throughout the year. Dry *ban kul* is used for making condiment. Sometimes, villagers are selling such condiment in the markets with high price. Dry *mahua* flower is also demandable and valuable food product in the markets as this product is used not only food and fodder but also used as liquor. Now these flowers are used for different types of food products in the different parts of the world (Figure 4). More over 80% households are directly involved in the collection of *mahua* flower and mushroom. Each family earned approximately Rs. 450 and 1500 by selling these products (Figure6). Mushroom is one of the most important and valuable product from the other products and the people earn more money by selling these with high price value in the markets.

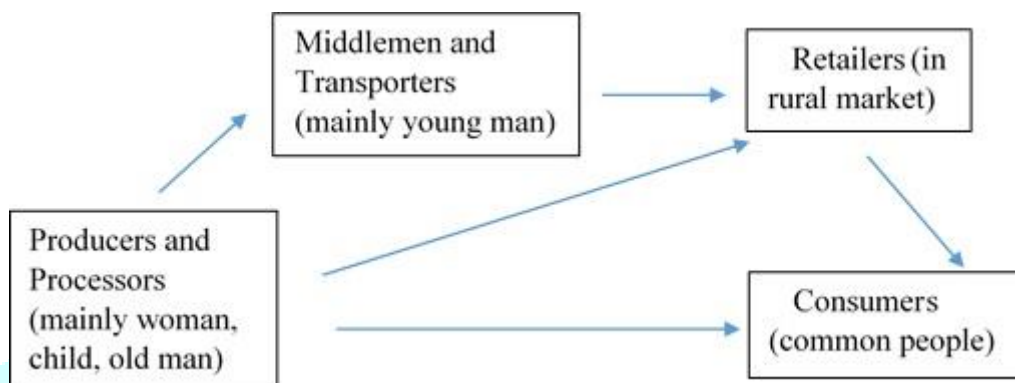


Figure 3: Market chain for traded wild fruits in Sonamukhi Block

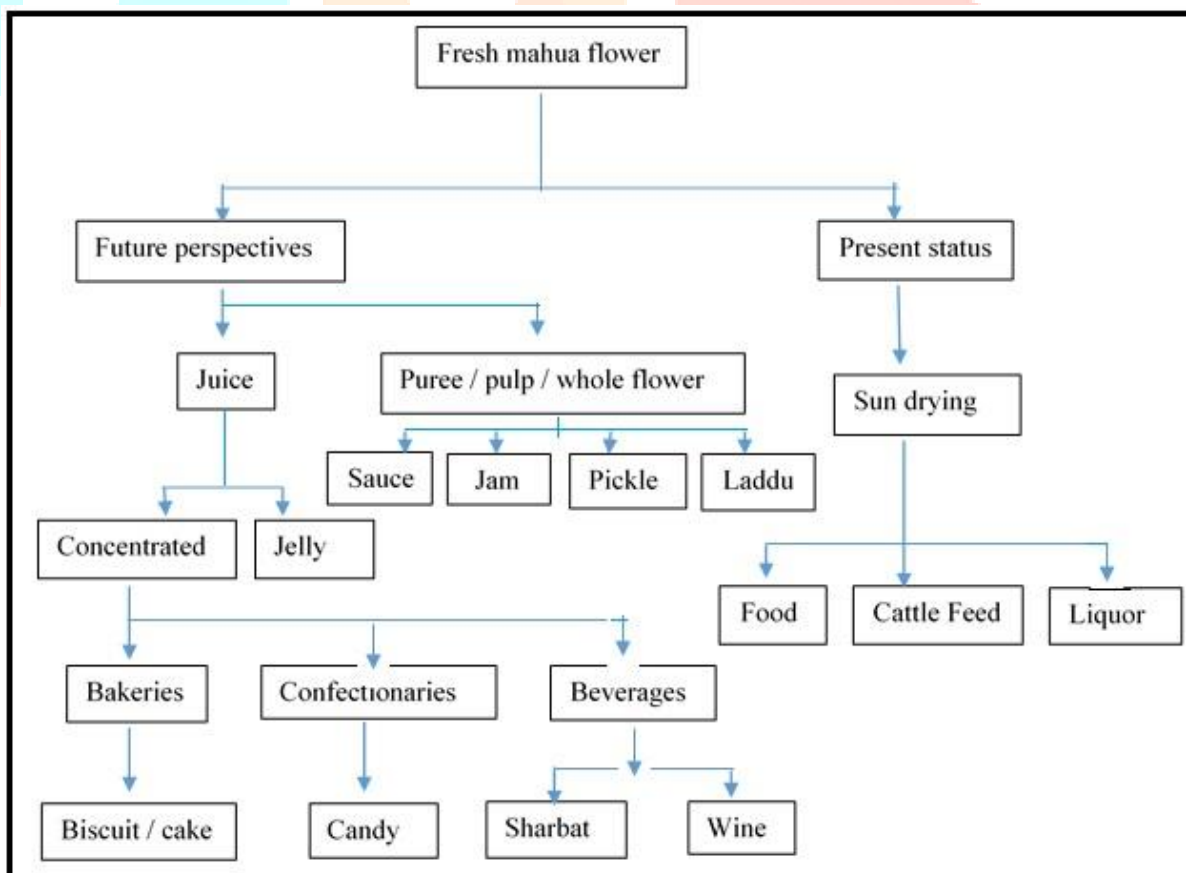


Figure 4: Use of *mahua* flower in different types of food product (Based on Sinha *et al.*, 2017)

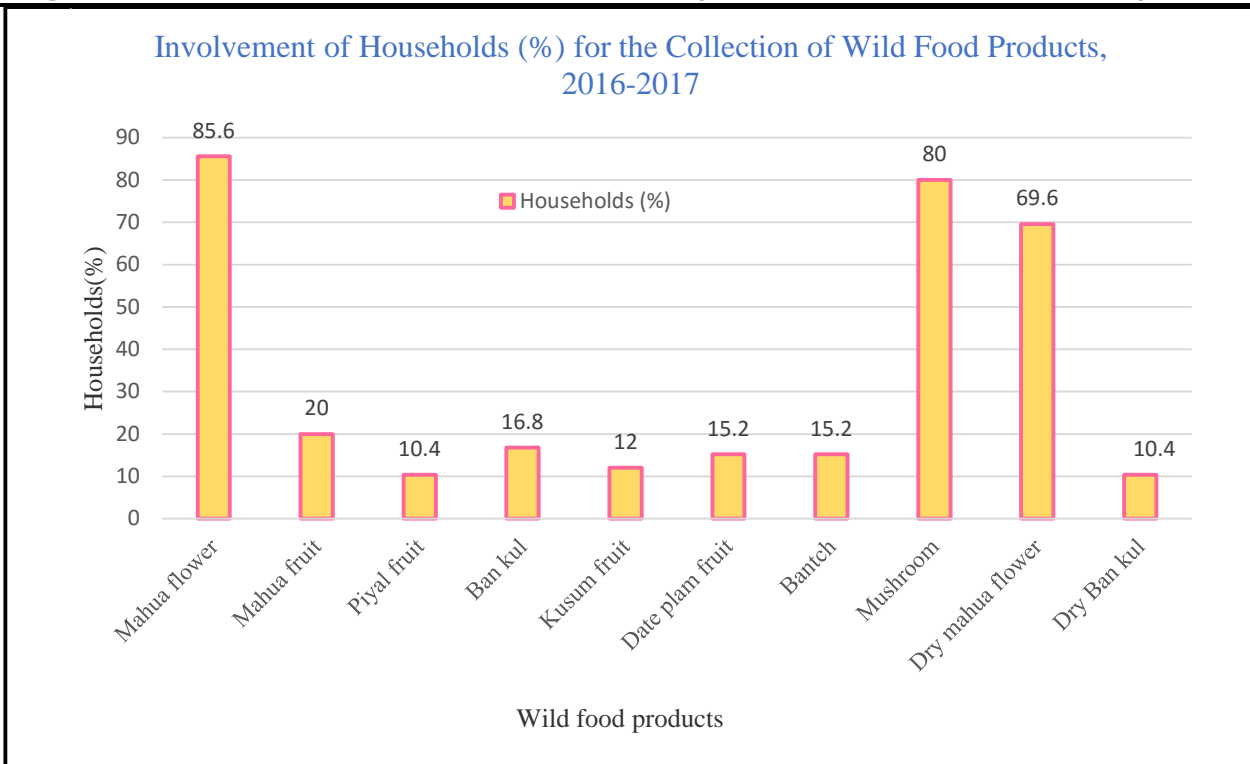


Figure 5: Involvement of Households (%) for the collection of wild product

5.4.3. Household utensils and equipment



Figure 7: Use of Sal tree in different purposes (Based on Field survey, 2017)

In the concerned study area, most essential household items are include *sal* plate, sleeping mats, baskets, dye, glue and tool handles farm implements. *Sal* leaf is used for making plate, bowl, cover and roof of a hut. Most of the people like old man, woman and child are engaged in collection of green *sal* leaves from the jungle. Each household not only collect 1500-2000 *sal* leaves per day but also they sold 15-20 bundles *sal* plates per day. Near about 90% people are involved in collecting the leaves, making the plates and processing for marketing in the local markets (Figure 8 and 9). Dry *sal* leaves are also used as fuel in the native households. The bark, flower, seed and resin of *sal* tree are used by the villagers in different ways (Figure 7). On the other hand date palm leaves are used for making sleeping mats as well as creepy plants are used for baskets. There are 30% people are involved in collection of both date palm leaves and creepy plants. Making tool handles farm implements are also essential in the concerned study area. Some people are collecting raw dye and glue from different plants in the forest and selling in the rural markets. *Sal* glue is used as resin in festivals.

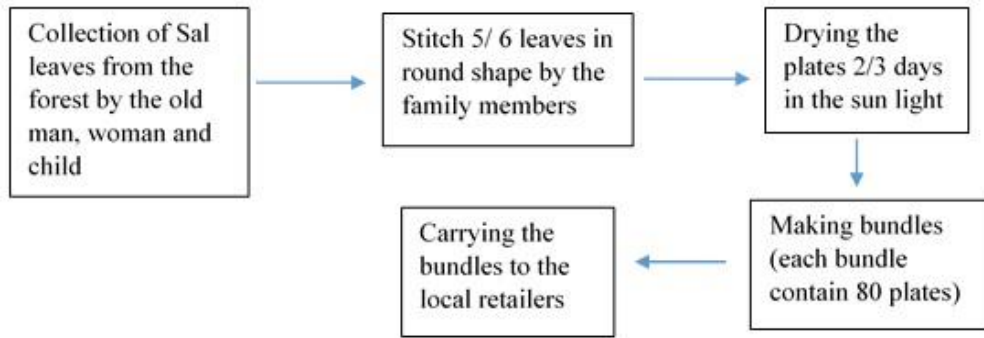


Figure 8: Making of *sal* plate

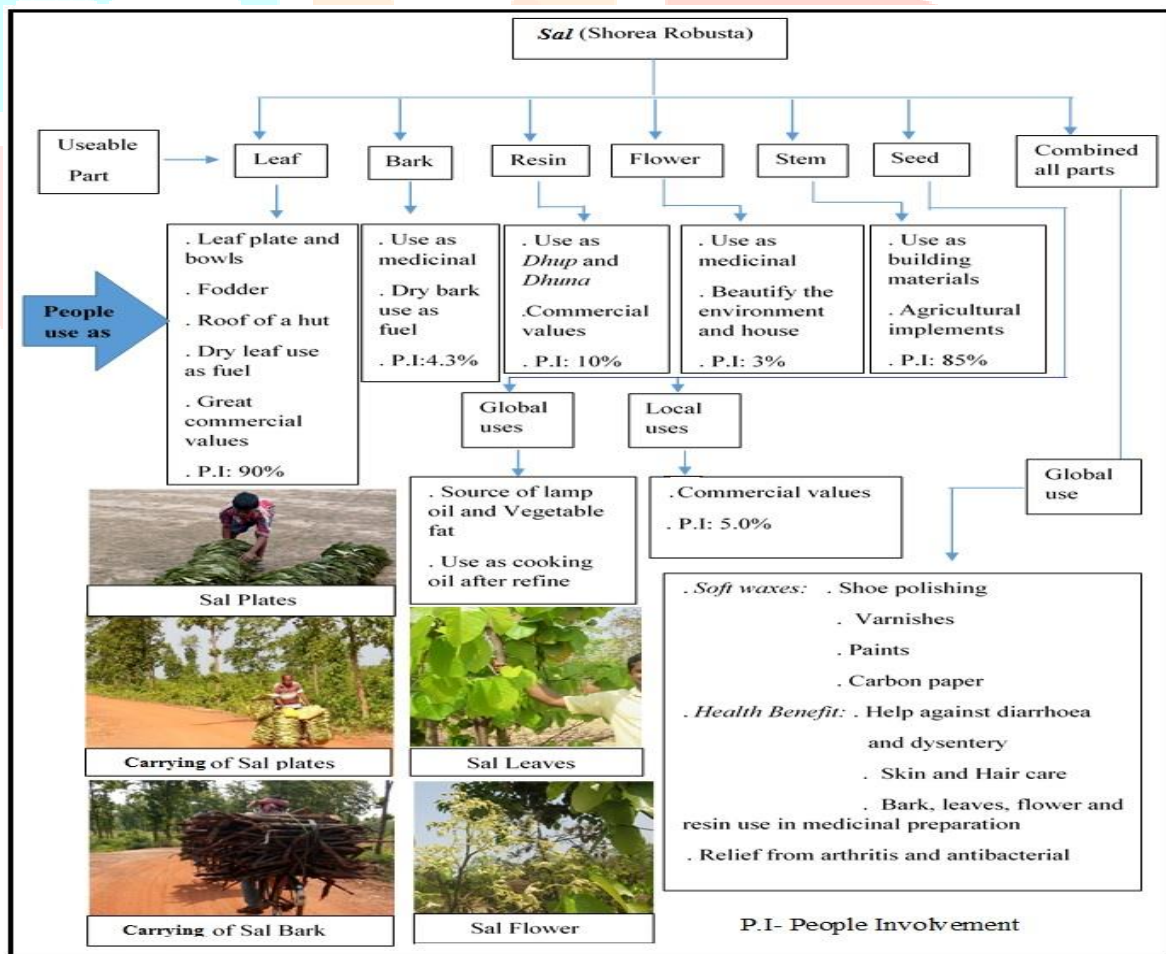


Table 3: *Sal* leaves collection from five villages in Sonamukhi Block

Name of the Villages (Top Five)	J.L.no.	Total bundles sold/day	No. of plates (no. of bundles* 80)	No. of leaves (no. of plates*5)	No. of leaves plucked/H.H/day
Dhansimla	151	50	4000	20000	2000
Rajda	121	41	3280	16400	1500
Ranibandh	178	70	5600	28000	2000
Chokdobakura	179	57	4560	22800	1500
Junshara	122	40	3200	16000	1300

Source: Field survey, 2017

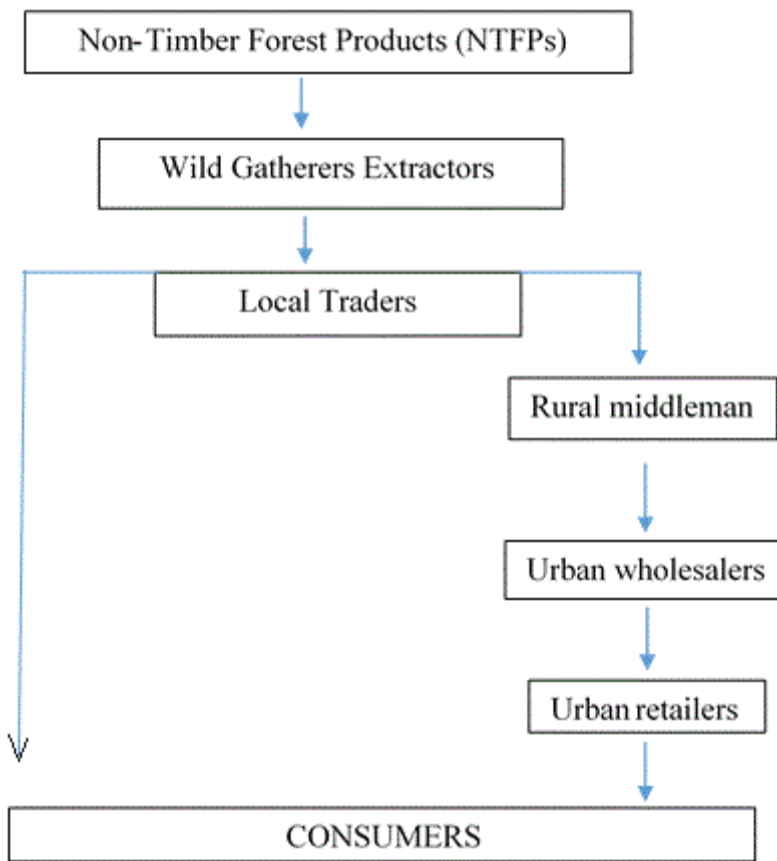
5.4.4. Construction materials and Animal fodder:

The construction materials are also essential for the inhabitants of the forest-based villages. The materials like palm leaves or grass for thatch, bamboo, wood sticks, *Jhanti*, dry branches of trees are all used for making huts, fencing and household equipment and utensils in the study area. Per day 65% of people are involved in the collection of such materials. Forest plays a significant role in feeding domestic animals like cows, goats, and lambs etc. Nearly 40% of people are engaged in the collection of different fodder like leaves, grass, flowers, and fruits etc.

Table 4: Different NTFPs and their importance

Name of NTFPs	Medicinal Value	Food Products	Household utensils and equipment	Construction Materials	Fodder	Source of Fuels	Commercial importance	Significant level
Green sal leaves	√		√	√	√		√	V. High
Dry sal leaves						√		Low
Sal glue/bark	√		√				√	Medium
Sal flower/seed	√					√	√	Medium
Neem flower/bark/seed	√					√	√	Medium
<i>Khorimati</i>							√	Low
Kurchi stem/bark/leaves/flower	√					√	√	Medium
Bantulsi leaves/flower	√				√	√	√	High
Mushroom	√	√					√	Medium
Mahua flower (<i>Kutchha</i> , Dry)	√	√			√		√	High
Mahua fruit	√	√			√			Medium
Mahua seed	√						√	Low
Date palm leaves			√	√		√	√	High
Date palm fruit		√					√	Low
<i>Bankul</i>		√					√	Low
Creepy plants	√		√		√	√	√	V. High
<i>Jhanti</i>			√	√		√	√	High
Grass					√	√		Low
Twig	√		√	√	√	√	√	V. High
Kendu leaves						√	√ (High)	Medium

Source: Field survey, 2017



Marketing channel of NTFPs in the study area

5.4.5. Source of fuel

Most of the people of the forest based villages are greatly busy throughout the year for the gathering of fuel. Near about 90% people are involved in collection of fuel. They are used different dry leaves, twig of the forest and *jhanti* etc. Those are all the sources of fuel. People usually collect these products for domestic consumption and on the other poor people are collected these resources as source of their income. The marketing of NTFPs is occurring through a channel (Figure 9).





Collection of Mahua Flower



Drying of Kendu Leaves



Collection of Piyal Fruit



Collection of Dry Leaves



Green Sal Leaves



Carrying of Sal PLates



Kendu Fruits



Mahua Fruits



Mahua Seeds

Different NTFPs in Sonamukhi C.D. Block

6.0. Conclusion

The endless demands of human society gradually decay the physical environment and at the same time the human beings do not realise what is their last destination? Sometimes, they feel the situations and forget within a few moments when they get a good offer for social status. There is no balance between the verbal words and the practical work of the human beings. Such a situation the rural forest based people take a good work like NTFPs collection for enriched their rural economy without disturbances the physical environment. In the study area the people are much involved by the collection of NTFPs for not only the requirement of domestic needs but also enriched the household economy and at the same times these activity improvement the rural livelihood, contribute to household food security, nutrition and biodiversity conservation.

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