

## RESEARCH ARTICLE



# Non Timber Forest Products Marketing - A Case Study in Aizawl Market, Mizoram, India

## OPEN ACCESS

**Received:** 23-01-2023

**Accepted:** 09-06-2023

**Published:** 06-09-2023

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**Citation:** Lallawmkimi, Lalrinpuui H, Vabeikhokhei JMC (2023) Non Timber Forest Products Marketing - A Case Study in Aizawl Market, Mizoram, India. Indian Journal of Science and Technology 16(SP1): 121-126. <https://doi.org/10.17485/IJST/v16sp1.msc17>

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**Funding:** None

**Competing Interests:** None

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Published By Indian Society for Education and Environment ([iSee](https://www.indjst.org/))

**ISSN**

Print: 0974-6846

Electronic: 0974-5645

## Abstract

**Objectives:** Surveying the different types of major non-timber forest products (NTFPs) marketed in the study area and to find the different marketing channels in NTFP's. **Methods:** Participatory Rural Appraisal (PRA) method was adopted for the field study. Field observation, personal interview and group discussion with the vendors. Detailed information on marketing channel of NTFPs was also noted. **Findings:** A total number of 19 species of NTFPs were recorded from the market of Aizawl. Anacardiaceae and Arecaceae are found to be the most dominant family with 2 species each. Athyriaceae, Musaceae, Mimosaceae, Zingiberaceae, Agaricaceae, Marantaceae, Phyllanthaceae, Asclepiadaceae, Rutaceae, Apidae, Lauraceae, Rubiaceae, Poaceae, Fabaceae and Apiaceae families with 1 species each. Current study shows that the main factors affecting NTFPs collection and trade are geographical location of market, transport facility, season, price and demand. **Novelty:** Majority of the species recorded were food items and some have medicinal properties, some of them are used as home remedies, flavouring agent, cleaning agent, ornaments and food packaging. Mostly the price ranges between Rs10-150 and Honey is for Rs 1000.

**Keywords:** NTFPs; Commercialization; Marketing Channel; Aizawl; Mizoram

## 1 Introduction

More than 800 million people worldwide live in or near tropical forests and savannas and rely on these ecosystems and their services and welfare benefit such as fuel, food and income. About a hundred million people live in the forests of South and Southeast Asia, and they depend on non-timber forest products (NTFPs). People in these forests subsist from their incomes on products they produce with NTFPs such as furniture, honey, varnish, beeswax candles, and herbal medicines, with most of these sold in the urban city market. Indigenous women also benefit from NTFPs through their creation of NTFP-based products with cultural/traditional and practical uses<sup>(1)</sup>. The commercial importance of the NTFPs varied from species to species. Most of the commercial NTFPs

were collected by the people who regularly visit the Reserve Forests and are well aware of the distribution of NTFPs. Most of the NTFPs are extracted unsustainably<sup>(2)</sup>.

Recent study from Meghalaya shows that NTFPs provide a pivotal role for the rural Garo tribe both in consumption and source income<sup>(3)</sup>. People living in the remote areas of Karbi Anglong, Assam have been practicing ritual ceremonies using plants<sup>(4)</sup>. Plants belonging to family of Fagaceae, Zingiberaceae, Poaceae and Piperaceae are found to be common in used for religious festivals and offerings by different communities of the Northeast India<sup>(5)</sup>. As North East states comprise mostly hilly areas. The most local forest fringe people depend on forest products for sustaining their livelihood. Traditionally all types of forest products are sold in all the local market of North Eastern states<sup>(6)</sup>. NTFP collection and processing is often a secondary occupation for farmers and other rural people, who are involved in these activities mainly during slack periods of the agricultural cycle and derive a small part of their household income from NTFP-related activities<sup>(7)</sup>. Income generated from NTFP trade varied according to the type of product and the quantities sold but may also vary by whether the household engaged in NTFP trade on a full-time or an ad hoc basis<sup>(8)</sup>.

Mizoram is one of the seven sister States in North East India. It lies in the extreme eastern corner of the country and shares its borders with Assam, Manipur and Tripura and has very long international borders with Myanmar and Bangladesh. The state has a geographical area of 21,087sq.km. and lies between 21°56' and 24°35' N Latitudes and 92°16' and 93°26' E Longitudes. The Tropic of Cancer passes through the State at 23°30' N latitude. As situated in the Indo-Burma Biodiversity Hotspot, Mizoram harvest rich amount of Non-timber forests products. The current study aims to analyse the marketing of major types of NTFPs' in Aizawl market places and to survey the marketing channel of NTFPs.

## 2 Materials and Methods

### 2.1. Study Site

The study of Non Timber Forest Products was carried out at Aizawl Market. Aizawl market is located at Bara Bazar, Aizawl. Bara Bazar is an extremely popular market of Aizawl and it is the main shopping center of Aizawl City.

Aizawl is the capital of the state of Mizoram, it was officially established on 25<sup>th</sup> February, 1890. With a population of 293,416 and it is the largest city in the state. Aizawl is a religious and cultural center of the Mizo's and it is also the center of all important government offices, the state assembly house and the civil secretariat.

### 2.2 Reconnaissance Survey

Participatory Rural Appraisal (PRA) method was adopted for the field study. Field observation, personal interview and group discussion with the vendors was carried out during the study. Prior to the selection of respondents, a reconnaissance survey was carried out to identify the types of NTFPs in the market and the people involved. This was done to validate the information from the respondent. The survey was carried out in the month of January, February and March 2020 in the New market Aizawl. The target population comprised NTFP's collectors, sellers and consumers.

Detailed information on the source of collection, species, name, price, and how it is used was asked. The NTFPs were grouped into different categories namely: medicine, food, building materials, cleaning purposes, scrubbers, packaging materials, etc. The NTFPs that were sold on health or nutritional materials were grouped under medicinal products, food category comprised those edible NTFPs. The NTFPs used for building or manufacturing of equipment were grouped under building materials. NTFPs used for wrapping were also grouped under the packaging /wrapping category. Detailed information on the marketing channel of NTFPs was also recorded (Figure 1).

## 3 Result and Discussion

A total number of 19 species of NTFPs were recorded from the market of Aizawl (Figure 2 ). Anacardiaceae and Arecaceae are found to be the most dominant family with 2 species each. Athyriaceae, Musaceae, Mimosaceae, Zingiberaceae, Agaricaceae, Marantaceae Phyllanthaceae, Asclepiadaceae, Rutaceae, Apidae, Lauraceae, Rubiaceae, Poaceae, Fabaceae and Apiaceae families with 1 species each.

According to survey most of the NTFPs harvested comes from trees and account for 9 species, herbs account for 5 species, ferns, grass, fungi, climbers, shrub, animal product, and cane with 1 species each. The plant parts like leaves, barks and fruits are utilized for consumption and medicine. Some species undergo certain process such as decoction for various uses and purposes. Most of the species are used as edible and medicine; some of them are used as foods, home remedies, flavoring foods, cleaning, ornaments and food packaging. Mostly the price ranges between Rs10-150 and 1 litre of honey range up to Rs.1000 (Table 1).

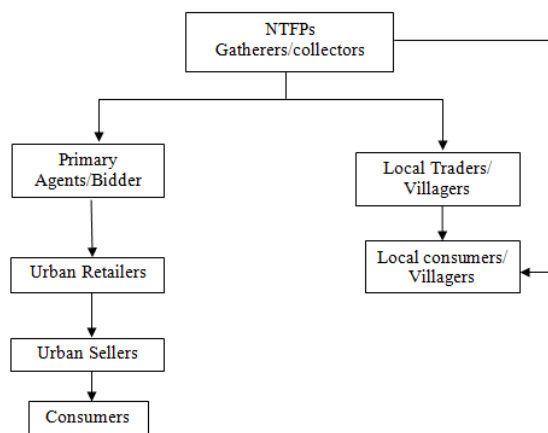


Fig 1. NTFPs marketing channel

Table 1. Price range of NTFPs in different stages of marketing channel

Sl. No	Name of species	Collector's price (before processing)	Agents price	Market-price	Price spread (Ratio)
		(Rs/kg)	(before manual processing)	(Rs/kg)	
			(Rs/kg)		
1	<i>Diplazium esculentum</i>	10	15	20	1
2	<i>Musa acuminata</i>	15	20	20	0.33
3	<i>Parkia timoriana</i>	25	20	30	1
4	<i>Semecarpus anacardium</i>	70	80	100	0.43
5	<i>Amomum dealbatum</i>	120	120	150	0.25
6	<i>Schizopyllum commune</i>	30	50	70	1.33
7	<i>Rhus chinensis</i>	10/1cup	10	25	1.5
8	<i>Phyllanthus emblica</i>	5/1cup	5	10	1
9	<i>Marsdenia macrophylla</i>	25	25	30	0.2
10	<i>Zanthoxylum budrunga</i>	35	40	50	0.43
11	<i>Arenga pinnata</i>	100	100	120	0.2
12	<i>Apis mellifera</i>	800	800	1,000	0.25
13	<i>Calamus erectus</i>	50	50	100	1
14	<i>Cinnamomum verum</i>	15	15	20	0.33
15	<i>Wendlandia budleioides</i>	20	20	50	1.5
16	<i>Thysanolaena latifolia</i>	20	30	50	1.5
17	<i>Aganope thysiflora</i>	20	20	30	0.5
18	<i>Centella asiatica</i>	20	30	50	1.5
19	<i>Phrynium pubinerve</i>	15	20	20	0.33

The various species of NTFPs that were recorded play an essential role in our daily life. NTFPs are generally considered favorable compared to agriculture or timber extraction, but in many cases, ecological and biodiversity impacts of NTFPs production have not been assessed. Assess to forest resources helps rural households in their livelihood and reduces their exposure to risk. Earnings for forest products are often an important additional source of income for the tribal people. Many households use NTFPs for income generation. Often when the farm and agriculture income is not enough for self-sufficiency year around, NTFPs can play a pivotal role in providing both food and income.

The current study discloses the main factors affecting NTFPs collection and trade are the geographical location of the market, transport facility, season, price and demand. Most of the NTFPs recorded during the survey have different types of seasons. The NTFPs recorded from the market belonging to plants' origin are present from December to March.

### 3.1 Marketing Channel of NTFPs in the Study Area

Tiwari (2005) mentioned the two channels of marketing of NTFPs –(a) Government organizations or Government permitted non-Government organizations and (b) Middle-men or mobile agents dominated private marketing channels<sup>(9)</sup>, which conforms to the current study. From the present study, the latter is prominent in the study area.

### 3.2. NTFPs recorded in the study area

1. ***Diplazium esculentum* (Chakawk)** : *Diplozium esculentum*, the vegetable fern is an edible fern. The agent purchases from the collector at a rate of Rs.15 and sells the same in the market at a rate of Rs. 20.
2. ***Musa acuminata* (Tumbu)** : *Musa acuminata* is a species of banana native to Southeast Asia. Based on the size the collector sold at a rate of Rs. 15 and the agents purchase from the collector at a rate of Rs.20 and sell the same at a rate of Rs. 30 in the market.
3. ***Parkia timoriana* (Zawngtah)** : *Parkia timoriana* is a flowering plant in the legume family and the edible portion is the tree bean. It is available in the market from the month of December and the majority of supplies are from Tiau. The agents purchase from the collector at a rate of 5 pieces at Rs. 30 and sell the same in the market at a rate of Rs. 50.
4. ***Semecarpus anacardium* (Kawhtebel)** : *Semecarpus anacardium* is an edible fruit. It is taken from Baktawng village. The agents purchase from the collector at a rate of Rs.80 per kg and sold the same at a rate of Rs.100 per kg.
5. ***Amomum dealbatum* (Aidu)** : *Amomum dealbatum* is a robust perennial herb and edible fruit. The agents purchase at a rate of Rs. 120 per kg and sold at a rate of Rs. 150 per kg.
6. ***Schizophyllum commune* (Pasi)** : *Schizophyllum commune* is a type of edible mushroom. The majority of the supplies come from across the border of Burma. The collector sold at Rs. 30 per cup and the agents purchase at a rate of Rs. 50 per cup and sold in the market at a rate of Rs. 70 per cup.
7. ***Rhus chinensis* (Khawmhma)** : *Rhus chinensis* is an edible fruit. It is taken from Hliappui village. The agents purchase from the collector at a rate of Rs. 10 per cup and sold the same in the market at a rate of Rs. 25 per cup.
8. ***Phyllanthus emblica* (Sunhlu)** : *Phyllanthus emblica* is a deciduous tree that has edible fruit and is also used as medicine. The agents bought at a rate of Rs. 5 per cup and sold in the market at a rate of Rs. 10 per cup.
9. ***Marsdenia macrophylla* (Ankhapui)** : *Marsdenia macrophylla* is a genus of plants and its leaves are used as curry. It is purchased by the agents at a rate of Rs. 25 per bundle (1 bundle contains 5 leaves) and is sold in the market at a rate of Rs. 30.
10. ***Zanthoxylum budrunga* (Chingit)** : *Zanthoxylum budrunga* belongs to the family Rutaceae. Its English name is cape yellow-wood, Indian ivy rue, or Indian pepper. It is a medium deciduous tree. Its major supplies are from Lungleng, Reiek and Ratu villages. The collector sold at a rate of Rs. 35 and the agents purchase from the collector at a rate of Rs. 40 and sells the same in the market at a rate of Rs. 50.
11. ***Arenga pinnata* (Thang-tung)** : *Arenga pinnata* is a medium-sized palm native to tropical Asia, growing to 20m tall, with the trunk remaining covered the rough old leaf bases. The collector sold at a rate of Rs. 100 and the agents purchase from the collector at the same rate of Rs. 100 and sells the same in the market at a rate of Rs. 120.
12. ***Apis mellifera* (Khawizu)** : *Apis mellifera* genus name *Apis* is Latin for “Bee”, and *mellifera* is Latin for “honey-bearing”, referring to the species' production of honey. The collector sold at a rate of Rs. 800 and the agents purchase from the collector at the same rate of Rs. 800 and sells the same in the market at a rate of Rs. 1000.
13. ***Calamus erectus* (Hruizik)** : *Calamus erectus* is a species of flowering plant in the family Arecaceae. It is native to India, Bangladesh. The collector sold at a rate of Rs. 50 and the agents purchase from the collector at the same rate of Rs. 50 and sells the same in the market at a rate of Rs. 100.

14. ***Cinnamomum verum* (Thakthing)** : *Cinnamomum verum* is a small evergreen tree belonging to the family Lauraceae, native to Sri Lanka. The species of *Cinnamomum* have aromatic oils in their bark. The collector sold at a rate of Rs. 15 and the agents purchase from the collector at a sane rate of Rs. 15 and sells the same in the market at a rate of Rs. 20.
15. ***Wendlandia budleioides*(Batlingpar)** : *Wendlandia budleioides* is a flowering tree used for curry. The agents purchase from the collector at a rate of Rs. 20 and sold in the market at a rate of Rs. 50.
16. ***Thysanolaena latifolia* (Hmunphiah)** : *Thysanolaena latifolia* is used for making brooms. The collector sold at a rate of Rs. 20. The agents purchase at a rate of Rs. 30 and sold in the market at a rate of Rs. 50.
17. ***Aganope thyrsiflora* (Hulhu)** : *Aganope thyrsiflora* is an edible leaf used as curry. The agents purchase at a rate of Rs. 20 and sold in the market at the same rate of Rs. 20.
18. ***Centella asiatica* (Lambak)** : *Centella asiatica* is used as a culinary vegetable and a medicinal herb. The agents purchase from the collector at a rate of Rs.30 and sold in the market at a rate of Rs. 50.
19. ***Phrynium pubinerve* (Hnahthial)** : *Phrynium pubinerve* is a herb and used for natural food packaging. The collector sold at a rate of Rs. 15. The agents purchase at a rate of Rs. 20 and sold in the market at a same rate of Rs. 20.

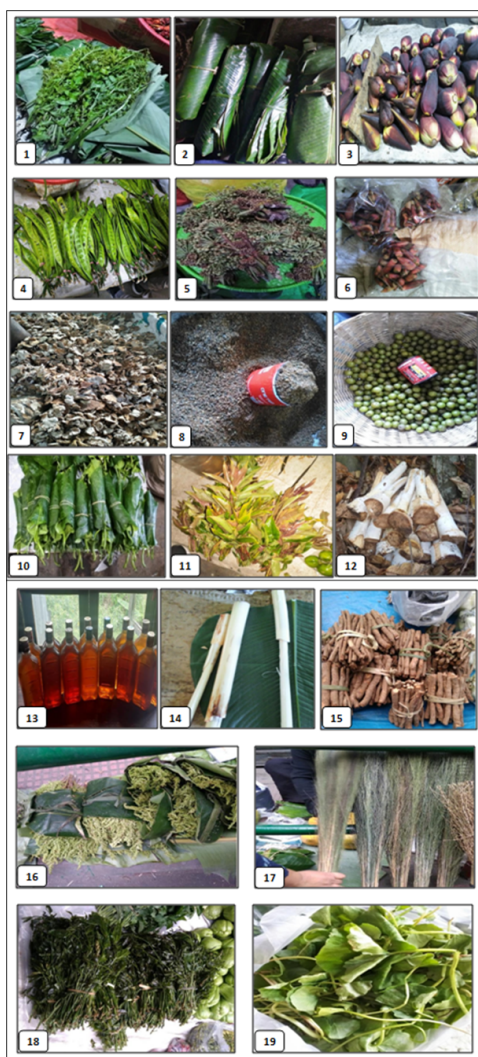


Fig 2. Photo plates: Some of the common NTFPs recorded in the market of Aizawl



## 4 Conclusion and Recommendations

The study area is Aizawl City Market which is the most visited and busiest market located in the heart of the city. Varieties of NTFPs are being sold in the market of Aizawl throughout the year which may differ seasonally. Majority of the NTFPs mostly comes from the nearby rural areas and villages. Thus, NTFPs contribute to increasing the income level of the village communities and the urban sellers. They are also used to improve family diets or as a means to achieve households' food security. It is clear that the NTFPs play an important role to generate income level of the collectors and the villagers. People in the rural villages depends on NTFPs for food, nutrition, healthcare, short-term income etc. They play a significant role in terms of food security, nutrition, health and subsistence.

There is enough scope for the value addition of NTFPs through minor processing. Such processing techniques may be easily learned by the primary collectors. Cottage industries by primary collectors need to be supported with both finance and techniques to produce certain finished items with value addition. There is scope for units like pharmaceuticals, food products including dry fruits, furniture, honey, brooms, plates making etc. Ensuring greater financial return and employment generation to the local people through local processing may improve the living standard of the local people. Therefore, commercialization of NTFPs should be done with maximum precaution emphasizing on sustainable extraction and without compromising on the negative impacts.

## 5 Declaration

Presented in 4<sup>th</sup> Mizoram Science Congress (MSC 2022) during 20<sup>th</sup> & 21<sup>st</sup> October 2022, organized by Mizoram Science, Technology and Innovation Council (MISTIC), Directorate of Science and Technology (DST) Mizoram, Govt. of Mizoram in collaboration with science NGOs in Mizoram such as Mizo Academy of Sciences (MAS), Mizoram Science Society (MSS), Science Teachers' Association, Mizoram (STAM), Geological Society of Mizoram (GSM), Mizoram Mathematics Society (MMS), Biodiversity and Nature Conservation Network (BIOCON) and Mizoram Information & Technology Society (MITS). The Organizers claim the peer review responsibility.

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