A study on Medicinal plants diversification and their role on livelihood development in the Nilgiris

Abstract

Tribal economy and development is mainly dependent on the Forest and Non wood forest products. The non wood forest products are mainly the products and services availed from the other those timber products of the forest and the fringed areas. Traditionally these forest products are having direct impact on the livelihood of the tribal communities. This study has been designed to analyse the role of the Non wood forest products on the livelihood of the tribal communities in the Tamil Nadu State, India. Three of the major tribal communities in the Nilgiris Hills, Kolli hills and the Kalvarayan Hills were taken for the study. The key informant method was followed and 80 informants were selected to collect the primary data. An exhaustive list of the available Medicinal Plants was also inventorised. The contribution of the livelihood through the products ranged from 50-10 % based upon the collection and marketing of the products.

Key Words: Non Wood Forest Products, Tribals, Socio economic, Livelihood

Introduction

Medicinal Plants are any product or service other than timber that is produced by the people dwelling in the forests and Forest Fringe areas. They include fruits and nuts, vegetables, medicinal plants, resins, essences, barks and fibres and other palms, tubers and grasses. In the recent years, most of the government organizations, conservation and development agencies and non-government organisations have encouraged the marketing and sale of Medicinal Plants as a way of boosting income of the tribal people and encouraging forest conservation. But different users define Medicinal Plants differently, depending on their interests and objectives. However, the emphasis is on understanding how people use forest resources, their contribution and how these resources make to the livelihoods of the tribal poor. Medicinal Plantss are

vital for subsistence and meeting the sources of daily nutrition (Vedeld et al., 2007). These are most common in the region where basic infrastructure and market access are not available. They harvest fruits, leaves, fibers, gums, dyes, honey, wax, etc. to meet their daily requirements. Iqbal (1993) roughly estimated that more than 6000 Medicinal Plantss are harvested throughout the world from the wildlands. In India, an estimated 50 million populations are dependents on Medicinal Plantss for their livelihood (Shaanker et al., 2004; Adepoju and Salam, 2007). Additionally, another 200 million people who are not forest dwellers are also estimated indirectly dependent on Medicinal Plantss (Shiva 1995). According to an estimate of the Ministry of Environment and Forests (MoEFCC), Government of India, in 2010–2011, revenue generated from Medicinal Plantss was about 20 billion (Mishra et al., 2009). About 95% is covered by forests (FSI, 2015). In addition to the villagers living in the forest fringe areas, other rural communities also harvest the Medicinal Plantss for earning cash by selling into the market for their livelihood (Sarmah et al., 2008). This is common in many of the developing countries of the tropical region of the world. More than three-fourths of the populations in such countries are found as dependent on Medicinal Plantss for their nutrition and primary health.(Nazimur, et. al. 2021)

Medicinal Plants are used and managed in complex socio-economic and ecological environments. In traditional forest communities, many Medicinal Plants may be used for subsistence while others are the main or only source of income. Some Medicinal Plants have significant cultural value, as totems, incense, and other ritual items. Others have important medicinal value and contribute to the community's health and well-being. But as forest areas shrink, human populations grow, markets change, and traditional management institutions lose their authority, the sustainable production of many Medicinal Plants is no longer assured. For example, as international rattan prices increased in the 1980s and '90s, commercial companies in Asia hired local people to harvest available resources. Widespread over-exploitation resulted and in many places the resource was destroyed, affecting the local biodiversity and leaving the people without an important source of income. (CIFOR, 2021). In this context the role of Medicinal Plants on the Tribal livelihood is studying form the Region of Tamil Nadu.

Objectives of the study

The Medicinal Plants and the tribal economy were going hand in hand. In the recent times these products were very difficult to be identified as well as marketing with a nominal price. The State Forest Department has formulated the policy decisions and provide guidance to the tribals in collecting, processing and marketing of the produces. With the broad outline the following objectives were formulated to the study

- Mapping the profile of the Tribal People involved in Medicinal Plants Collection
- Assessing the Socio-economic impact of Medicinal Plants collection and marketing in terms of income, employment generation, savings, asset creation, social status and empowerment on the tribal livelihood
- Analysis of benefits and constraints among the Medicinal Plants Collectors

Research Methodology

Selection of the study area and respondents

Tamil Nadu from the Tribal community perspective can be broadly divided into two geographical divisions i.e. Eastern Ghats and the Western Ghats. Based upon the spread of tribals and the Medicinal Plants collection the following areas were identified for the study

- Eastern Ghats- Kalrayan hills, Kolli hills,
- Western Ghats – Nilgiri hills and Anamalai hills.

Sampling Design

Representative Villages were identified from the selected areas. The key informant method was followed. A well structured interview schedule was developed for primary data collection. A total of 20 informants among the forest dwellers/ tribals were selected for the study. For the total four selected Medicinal Plants areas data will be collected from the 80 informants. The study was carried out among the following primary stakeholders;

- Forest tribal / dwellers
- Tribal women
- NGOs involved in tribal development/rights
- State line department - forest department, tribal department
- Tribal Farmers
- Labourers

Data collection Tools

The tools and techniques deployed for the study are:

- Transit walk
- Social mapping
- Resource mapping
- Focus Group Discussion
- Visits and discussion with NGOs
- Observation visits
- Interview with the Key informants

Sources of secondary data

The secondary data was collected from the following Departments and also discussions with the list of officials given below;

- Department of Forest
- Department of Rural Development & Panchayati Raj
- Census Department
- RTI data
- Tamil Nadu Ministry of Schedule Caste and Tribal Welfare

Statistical Methods

Statistical methods applied for the study are Percentage analysis, Ranking, Correlation, Regression.

Results

Mapping of the profile characteristics

Mapping of the profile characteristics were done based on the following determinants of the respondents. They were Age, Educational status, Family size, Experience, Size of land holding , Occupation (Medicinal Plants Collection, Farming , Labour, Others), Major Medicinal Plants Collected, Marketing.

The results are discussed in the following tables

Nearly 42 products were identified from the study area, which includes food items, construction materials, medicine, resins gums and other household items. The parts of the plants may be of fruits, pods, bark, leaves, seeds, grass, roots or entire

plants with various medicinal and other uses. The entire list of the Medicinal Plants along with the uses and plant parts used are given in Table. 1.

TABLE 1 Major Medicinal Plants collected in Tamil Nadu (TNFD Working Plan 2022)

Sl.No.	Name of of N.W.F.P.	Botanical name	Parts of the plant used	Purpose for which it is used.
1.	Tamarind	*Tamarindus indica*	Fruits	Gallinary
2.	Gallnut or Kadukai	*Terminalia chebula*	Fruits	Tanning, medicinal
3.	Stone & tree moss	*Bryophytes*	Entire plant	For making garam masala and curry masala
4.	Seekakai/Shigekai	*Acacia concinna*	Pods	For washing and cleaning
5.	Soapnut	*Sapindusemarginatus*	Fruits	Washing
6.	Avaram bark	*Cassia auriculata*	Bark	Tanning
7.	Konnai bark	*Cassia fistula*	Bark	Tanning
8.	Nellikkai	*Emblica officinalis*	Fruits	Pickle, Medicinal
9.	Athikai	*Ficus spp.*	Fruits	Medicinal
10.	Curry leaves	*Murrayakoenigii*	Leaves	For masala
11.	Cashew	*Anacardium occidentale*	Fruit	Edible
12.	Wood apple	*Feronia elephantum*	Fruits	Edible
13.	Kilakkai	*Carrisa carandas*	Fruits	Edible,Pickle, Chatni
14.	Seethapalam	*Anona squamosa*	Fruits	Edible
15.	Elandai	*Zizyphus*	Fruit	Edible

		jujuba/mauritiana		
16.	Sural bark	*Ventilagecalyenalata*	Bark	Tanning
17.	Etti	*Strychnos Nux-vomica*	Seeds	Medicinal
18.	Thethankottai	*Strychnospotatorum*	Seeds	Medicinal
19.	Wild castor	*Jatropacurcas*	Seeds	Medicinal
20.	Beedi leaves	*Diospyros melanoxylon*	leaves	Smoking
21.	Murukkan leave	*Butea frondosa*	Leave	Eating plate
22.	Palmyrah	*Borassus flabellifer*	Fruits/leave	Edible, Thatching, fence.
23.	Thanikai	*Terminalia bellirica*	Fruits	Medicinal
24.	Serankottai/Shenkottai	*Semecarpus anacardium*	Seeds	Pericarp of drupa as ink
25.	Neem	*Azadirachta indica*	Seeds	Medicinal, oil
26.	Mango	*Mangifera indica*	Fruit	Edible
27.	Thagarai	*Cassia tora*	Leave	Green leaf for manure, bark
28.	Illuppai	*Madhuca latifolia*	Fruit	Medicinal
29.	Sundakkai	*Solanum spp*	Fruit	Edible
30.	Korai	*Cyperus sppp.*	Grass	Mat making
31.	Naval	*Zyzygiumcumini*	Fruit	Edible
32.	Jack	*Artocarpus heterophyllus*	Fruit	Edible
33.	Lichens	*Fungi species*	Whole	Edible
34.	Kapila/Kanapotta	*Mallotusphilippensis*	Whole plant	Red gland of fruits are used for dyeing silk
35.	Broom Grasses	*Thudaippam*	Leaves /Stem	Thatch, broom
36.	Saraiparuppu	*Buchananialanzan*	Seeds	Nuts edible
37.	Danti/Vattangi	*Gymnosporiamontana*	Roots	Medicinal

38.	Nannari	*Hemidesmus indicus*	Roots	Burning sensation
39.	Mayilei/Mayiladi	*Vitex altissima*	Seeds	Medicinal
40.	Mushroom	*Fungi species*	Entire plant	Edible
41.	Kalli	*Euphorbia antiquorum*	Stem	Fencing
42.	Vettiver	*Vettiveriasizionoidis*	Roots	Essence and thatties

Livelihood impact of the tribals in Nilgiris

The major Medicinal Plants found in the Nilgiris Hills are Broom grass, Jack, Pepper, Honey Soap nut and Shikakkai. The average livelihood share of the products was calculated based on the percentage analysis. Pepper and honey found to contribute more when compared to the other products. The detailed results are given in Table 2.

Table 2 Major Medicinal Plants in Nilgiris Hill – Tribal :Irular, Kurumbars (n=30)

Sl.No.	**Name of of N.W.F.P.**	**Tribal benefitted**		**share in Livelihood (Per month Income)**	**Rank**
		No	%	%	
1.	Broom grass	30	100	30	II
2.	Nellikai	18	60	25	III
3.	Jamun	22	73	50	I
4.	Nava;	25	83	50	I
5.	Soapnut	09	30	10	IV
6.	Shikkakai	11	36	10	IV

Conclusion

The study has given an exhaustive list of Medicinal Plants available in the study area, but their uses and other plant part may vary from area to area. Destruction of forest and unsustainable way of harvesting should be taken care by the local level line departments such as village Panchayat and the Forest Department. Preference on few species may be beneficial for short-term but Medicinal Plants are important for biodiversity conservation and long term benefit. Economic point of view has to be derived for all the products and they should be applicable as a source of livelihood for the local communities. Capacity building programmes on Value addition and marketing of the products to the tribal women and Rural Youth will be of more beneficial to the community. At the same time Sustainable way of harvesting Medicinal Plants should be taken care which can alleviate poverty of the tribal people and also provides a great scope for socio economic development.

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