

SOCIO-ECONOMIC IMPORTANCE OF IMLI (*TAMARINDUS INDICAL.*) FRUIT IN THE FOREST REGIONS OF GARIABAND, CHHATTISGARH

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Abstract

Imli tree (*Tamarindus indica* L.), is a very economically important tree species that is spreading in the forest area of Gariaband district of Chhattisgarh. Imli also contains medicinal properties and has commercial value. This is a major contribution to the region's forest economy, especially for tribal people. The purpose of this study is to study the socio-economic implications of tamarind fruits and their role in the presence of residents of Chhura, Gariaband, and Mainpur blocks. On-site surveys, home interviews, and discussion groups were conducted in selected villages to assess the collection, treatment, sales, and Imli benefits. The data obtained show that 70-80% of forest families collect tamarind during the fruition season (February to February), earning an average of ₹4,000-8,000 per year for families. Women and children are closely linked to collection, drying and selling fruits, primarily through local markets and forest cooperatives. Despite its economic value, Imli harvests are limited to price volatility, lack of value, and limited access to the market. He recommends that the product be promoted with

Imli values, trained in hygienic treatments, improve income from rural areas, and improve market relations to promote sustainable forests.

Keywords: *Imli, Non-timber forest products, rural livelihood, Tribal economy.*

Introduction

Medicinal plants are the foundation of traditional medicine [1-2]. The practice of using plant preparation as a source of drugs has traditionally been based on experiences and superstitions transmitted from generation to generation, and mostly through oral language [1, 3]. In India, Tamarind is known by a wide variety of vernacular names: Tetuli (Assamese); Amli, Nuli, Textili Tentul (Bengali); Amali, Ambali (Gujarati); Ambli, Amli, Imli, (Hindi); Puli (Malayalam); Amli, Chinch, Chitz (Marathi); Koya, Tentuli (Oriya); Imli (Punjabi); Chinta (Telugu) [1, 4]. *Tamarindus indica* is used as a traditional medicine in India, Sudan, Nigeria, Bangladesh, and most tropical countries. Unlike pharmaceuticals, they are generally available and freely available [1, 5-11]. Forests have been a source of traditional livelihoods, traditionally known as Indian Rice Bowl and Herbal Hub, in many rural and tribal populations, particularly in the states of the central Indian state of Chhattisgarh, India. Among the various non-timber forest products (NTFPs) that support the forest economy, *Tamarindus indica*, traditionally known as Imli, is economical, nutritious, and drug value. Its sour pulp is primarily used in Indian food and traditional medicine, and its market value is key to the income of seasonal rural areas. This vegetation provides food, drugs, building materials, household goods, and energy sources, resulting in diversification of income sources [11, 12]. For specific African ethnic groups, they guarantee a fight against poverty, food security, and social justice [13, 14-16]. Plant species use and knowledge vary depending on spatial, cultural, and economic factors [13, 15, 17]. In the Gariaband district, dense, dense forests of deciduous leaves and tribal groups such as Gond, Halba and Baiga win in East

Chhattisgarh. In forest plots and general lands, tamarind trees are found in the blocks of Chhura, Gariaband, and Mainpur. Every year, from February to April (fruit season), tribal households participate in the drying and marketing of tamarind fruits, selling fresh or sown and growing. This serves as a key source of cash income during the desperate farming season, especially for the families of landless, remote farmers. tamarind fruits are also highly regarded for their medicinal (digestion, skin, fever care), and are in increasing demand for domestic cities and export markets as they can be found to be used in cucumbers, chutneys, candies, and health drinks. However, unlike its economic and environmental importance, tamarind is not sufficient in an internal forest economy due to its lack of value, price volatility, inadequate storage facilities, and mediocre market relationships. Tamarind's transformation and harvesting is primarily manual, with most tribal home women and even children involved. However, lack of access to training, hygienic packaging practices, and cooperative level purchases generally require local residents to sell their products to local merchants at rocky prices. With the help of tamarind fruits sustainable tree collection, it is important to recognize these limitations regarding the development of interventions that lead to increased income. The purpose of this study is to assess the socio-economic function of tamarind fruits in their lives as residents of religious forests in the Gariaband district. He explores market issues related to dominant positions in collection practices, treatment from a household perspective, contributions to income, participation in sex, and tamarind. There is hope for light research on how the chain of value creation in tamarind is enhanced by scientific harvesting, adding value to forest fund renewal and institutional support.



Figure 7.1 Imli (*Tamarindus indica*) Tree in the Forest Region of Gariaband, Chhattisgarh



Figure 7.2 Collected Imli (*Tamarindus indica*) Fruits from Forest Regions of Gariaband, Chhattisgarh

Materials and Methods

Study Area

The current study was conducted in three of the largest forest blocks in the Gariaband district of Chhattisgarh. These blocks are dominated by dense forest cover, high tribal densities, and high biodiversity. There is a wealth of (Imli) trees. Combined with late red soil and regional corrugated landscapes, tropical climate, and annual precipitation from 1100 to 1400 mm, it provides good conditions for tamarind development. Mostly Gond, Halba, and Kamar, and Aboriginal tribal groups have traditionally participated in the collection of tamarind and are counted as important sources of seasonal means for presence and internal use. The study area has been selected because it has an active forest economy in Imli harvesting and marketing, traditional reliance on NTFPs, and participation of the manifest community.

Data Collection: The survey included data collection from primary and secondary sources and extensive fieldwork. Field visits were made in several selected villages in Chhura, Gariaband, and Mainpur blocks, measuring availability, harvesting practices, and the use of (Imli).

Key data were obtained through home surveys, focus group discussions (FGDs), and key interviews with informants with tribal collectors, SHG women, local merchants, and forest managers. The data collected is as follows:

- Seasonal availability and harvest season
- Average household amount
- Average income received following sales tamarind
- Traditional roles and knowledge of women
- Access to markets, prices and practices
- Secondary data sources included forest department reports, Van Dhan Yojana records, and existing NTFP_s studies of Chhattisgarh.

Result

1. Prevalence and Availability of Tamarind Trees:

The results of the study reveal that tamarind trees (*Tamarindus indica*) naturally occur in common blocks of forests and villages in Chhura, Gariaband, and Mainpur. On average, each village questioned had between 50 and 100 tamarind-bearing trees, either in forest suburbs, income land, or housing courses. The trees of the community dominate individual owners of the family tree.

2. Household Participation in Collection:

- 78% of responding households were directly involved in tamarind collections from February to April.
- The household collected 30 to 60 kg of tamarind fruit on average per season.

- Women and children participated in the fruit collection, the elimination of seeds, drying, and storage.

3. Income Contribution:

- Average seasonal performance of tamarind to households varied from ₹3,000 to ₹7,000, depending on the amount collected.
- Families who practiced extraction and dried seeds (value added) received up to 30% more income than those who sold raw fruits.

4. Market Access and Selling Practices:

- 60% of the products were sold in the local weekly market (haats).
- 25% were sold by intermediaries or merchants who arrived in the village during the season.
- The validity of sales by Forestry Cooperatives or Van Dhan Kendra was only represented by 15%, causing the highest price, but the payment cycle was longer.
- Tamarind prices vary from ₹20-₹35 kg (total) to ₹50-₹70 kg (deseeded and dried).

5. Gender Roles and Community Dynamics:

- The chain of women's cost creation plays a central role, especially in treatment after losses, such as:
 - ❖ De-seeding
 - ❖ Drying
 - ❖ Packing and local sales
- In self-help groups (SHGs) Women network participated in mass drying and cost additions. This has increased revenue and group marketing.

6. Challenges Identified:

- Price fluctuations beyond merchant applications or control at the top of the season.
- No proper storage facilities, leading to part of the monsoon.

- Lac of Tamarind treatment units pasting in the village or next to it.
- Consciousness is limited to hygiene, packaging, and brand image among collectors.
- Seasonal over-hobbies in certain regions due to a lac of management principles.

Table 7.1 Chhattisgarh State Minor Forest Produce 2024-25 [18]

Chhattisgarh state minor forest produce 2024-25 (CGMFPPED)					
Name of Forest produce	Category (MSP/SP)	Collector rate (Rs. Per kg)	Collector period		Criteria
			Form	To	
Tamarind (With Seeds)	MSP	36	1st March	15th May	Fully ripened tamarind with seeds, free from rot and fungus.
Tamarind (Seedless)	SP	69			Seedless, clean, and well-dried tamarind.
Tamarind Seed	MSP	12			Well-dried seeds, free from pests and fungus.

Discussion

This study highlights the critical socio-economic importance of Imli fruits in the lives of forest groups in the Gariaband district, particularly in the blocks of Chhura, Gariaband, and Mainpur. Of course, the results show that tamarind is an important seasonal income source for tribal families. This is because over 75% of households interviewed participate in collections and sales in April. Tamarind's preparation in both country groves and public forests even encourages interaction

with his collection with the family of landless families. In particular, women generally control collection and post-ponement of bridges, drying, sales, etc., highlighting conditions that include soil, a tamarind-based, life-based system. These results are in line with previous studies. That highlight the role of NTFP in expanding tribal women's rights and capabilities in the Forest Treaty. However, tamarind has important commercial potential, but its primary use in the Gariaband has not yet been organized and underestimated. Most villagers sell raw or semi-specialized tamarind to local merchants at relatively low prices. That profit is limited because there is no infrastructure to add value, such as seeds or separation units from pulp processing units. Villages where Self-Help Groups (SHGs) or Van Dhan Kendra were located have recorded higher prices and collective marketing. One of the main issues was market volatility and intermediary advantage. This causes unstable and unfair prices, especially at the top of the harvest. The best households with the best storage facilities and market training can delay sales and sell at the best prices. There was a loss, especially during the monsoon season, as most villages lacked refrigerated or dry storage. The study also shows concerns about environmental stability as the increased commercial value of tamarind leads to excessive use in certain regions. This can undermine the long-term accessibility of the product if a sustainable harvesting strategy and public forest patrol have not been created. Furthermore, a few respondents have experienced the advanced packaging, branding, or export potential of tamarind and its producers. There are serious opportunities to teach to build possibilities and entrepreneurship, especially among young people and rural women. Therefore, tamarind collection is currently low, but is highly profitable, especially for marginal tribal groups. However, developing value chains, market access, storage, and expanded institutional improvements is important to implement that possibility.

Health Benefits and Medicinal Uses of Tamarind

Tamarind, with distinctive flavors and culinary uses, is a source for health and drug use. This article discusses useful components of Tamarind. Regarding tamarind, we make ourselves healthy and use its traditional medicine [19].

Dietary Fiber in Tamarind

Tamarind fruit is a food stone filled with volatile compounds, minerals, vitamins, and nutrient fiber. These are important. Its adhesive pulp contains large amounts of polysaccharides, non-starch polysaccharides (NSPs), including gums, hemicelluloses, mucilage, pectin, and tannins. Only 100 grams of pulp tamarind represents more than 13% of dietary fiber, which has many health benefits [19].

Protection against Constipation

Eat fiber with tamarind, tighten food, help with normal intestinal movements, and avoid constipation. Furthermore, it acts as a protective barrier against harmful substances in food, protecting the mucosa from cancer chemicals [19].

Lowering Cholesterol Levels

Tamarind's fiber is also responsible for reducing cholesterol. He draws bile salts, inhibits colon reabsorption, and helps the body's LDL cholesterol [19].

Antioxidant Properties of Tamarind

Tamarind is rich in tartaric acid, and not only imparts a sour taste to food; it also functions as a strong antioxidant. This property does not allow the human body to combat harmful free radicals and oxidative stress [19].

Medicinal Phytochemicals

Tamarind is rich in several volatile phytochemicals, including limonene, geraniol, safrole, cinnamic acid, methyl salicylate, pyrazine, and alkylthiazoles. These chemical ingredients form a profile of tamarind medicines, making them spices rather than spices for cooking [19].

Rich in Essential Minerals

Tamarind is rich in important minerals such as copper, potassium, calcium, iron, selenium, zinc, and magnesium. They perform several important functions to maintain a healthy body, heart rate regulation, and blood pressure regulation that support the formation of red blood cells [19].

Abundance of Vital Vitamins

In addition to minerals, tamarind is a rich source of essential vitamins, including thiamin, vitamin-A, folic acid, riboflavin, niacin, and vitamin-C. Such vitamins act as antioxidants with cofactors of many enzyme metabolic reactions in the human body [19].

Medicinal Uses of Tamarind in Traditional Medicine

In addition to its gastronomic and food value, tamarind has been used in popular medicine for centuries. The meat was used as a laxative, digestive, for yellow and bile disorders. He is also an emulsifier for various drugs, such as syrups and decoctions [19].

Conclusion

This study concludes that the results of tamarind (*Tamarindus indica*) fruit are important socio-economic contributions to the Forest Fund to the presence of tribes and rural residents of Gariaband district, particularly in the blocks of

Chhura, Gariaband, and Mainpur. Tamarind offers a rich source of additional income outside the farm, especially during the rural season, as it is not produced by timber learning non-timber forest product (NTFP) seasonally. Women and children are carefully involved in collecting and transforming, and it is important to contribute to the income of Tamarind trading families. Families implement ₹4,000-8,000 for the season, plus children-like costs. This shows the amount of tamarind as an inexpensive source of livelihood in the forest.

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