



PROCESSING AND MARKETING OF COIR FIBER IN THENI DISTRICT FROM COCONUT TO GLOBAL COMMODITY

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Abstract

Coir fiber, often referred to as the “golden fiber,” is a versatile natural material extracted from the husk of coconuts and holds significant economic, social, and environmental value. This article presents an overview of the processing and marketing of coir fiber in Theni district, Tamil Nadu a region with abundant coconut cultivation and a thriving coir industry. The study outlines the origin and types of coir fiber, detailing traditional and modern processing methods, including retting, defibering, and finishing, alongside recent advancements such as microbial retting and green decortication. The economic relevance of the industry is highlighted, with emphasis on its role in rural employment generation, particularly among women, and its contribution to both domestic and export markets. Cost structure analysis reveals the interplay of variable and fixed costs affecting unit profitability. Key challenges-such as raw material price fluctuations, mechanization needs, and competition from synthetic alternatives-are discussed, alongside future prospects driven by global demand for sustainable products. The findings underscore the potential for further growth of the coir sector in Theni through technological innovation, value addition, and strategic market positioning.

Introduction

Coir, often celebrated as the “golden fiber”, stands as one of the most versatile and eco-friendly natural materials in the world. Extracted from the husk of coconuts, it has been woven into the economic and cultural fabric of India for centuries. Traditionally, coir production was a small-scale cottage industry, but in regions like Theni district of Tamil Nadu, it has grown into

a significant livelihood source and a thriving trade. The abundance of coconut cultivation in this region ensures a steady raw material supply, while the Coir Board’s support in mechanization and training has helped generate employment-especially among rural women-while boosting exports. Today, the coir industry is not just about producing rope and mats; it is a sustainable industry connecting traditional craftsmanship to global markets.

Origin and growth of the coir industry

The term “coir” derives from the Malayalam word “*kayar*”, meaning “to be twisted,” reflecting its primary use in making ropes. Coir fibers lie between the hard inner shell and the outer husk of the coconut. Globally, around 3,50,000 metric tons of coir are produced annually, with India and Sri Lanka contributing nearly 90 percent of the total.

In India, states like Kerala, Tamil Nadu, Karnataka, Andhra Pradesh and Goa dominate coconut and coir production. Theni district has witnessed steady growth in its coir sector due to easy access to raw materials, low capital investment needs, and rising demand for eco-friendly products. Over time, what began as a household craft has evolved into a structured, semi-mechanized industry with strong domestic and export potential.

Structure and types of coir fiber

Coir fibers are essentially narrow, hollow cells with thick cellulose walls that gain strength and rigidity as lignin is deposited. They are pale when immature but gradually turn golden brown upon hardening. Based on maturity and characteristics, there are two major types.

Brown fiber is sourced from mature coconuts, making it thick, strong, and highly resistant to water-ideal for mats, brushes, and ropes. White fiber is extracted from immature coconuts; it is finer, smoother, and less strong, finding use in products like fishing nets, strings, and ropes. While brown coir is valued for durability, white coir offers better flexibility and finish, allowing the industry to cater to varied product needs.



Brown fibre specification

Market name	Brown Mattress fiber, Brown Fiber
Fiber Length	10 cm to 25 cm
Color	Brown& Golden brown
Moisture	12 to 15% max
Impurities	3 % max
Dust	3 % max

Packing	120 kgs compressed and strapped
Loading	180 to 185 bales per 40 FT container
	Quantity per 40 /40 FT HC container: 21 MT maximum

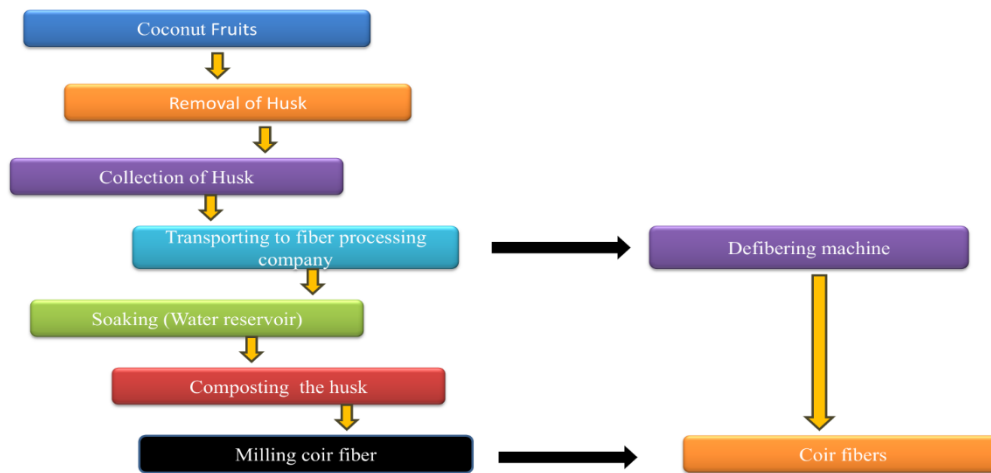
White fibre specification

Market Name	Coir White Fiber, Golden Fiber
Fiber Length	10 cm to 25 cm
Color	White
Moisture	12 to 15 % max
Impurities	1% max
Dust	1% max
Packing	120 kgs compressed and strapped
Loading	180 to 185 bales per 40 FT container
	Quantity per 40 /40 FT HC container: 21 MT maximum

Processing of coir fiber

The transformation of coconut husk into usable coir fiber involves a series of methodical steps. It begins with the collection of husks from farms, markets, or coconut-processing centers. These husks are subjected to retting, where they are soaked in ponds, rivers, or tanks to loosen the binding pectin materials. Traditional retting can take 6 to 12 months, but microbial retting-developed by the Central Coir Research Institute-can reduce this to just three to five days. Once softened, the husks are defibered either manually or using machines to separate the fibers from the coir pith. The fibers are then washed, sun-dried, and combed before being bundled or spun into yarn. Modern innovations like green decortication ensure cleaner, faster, and more environmentally friendly processing.

COIR PROCESSING



Products made from coir

From these processed fibers emerge a wide variety of products. Coir yarn is the most basic, serving as the foundation for other goods. Coir ropes are particularly valued in marine industries because of their strength and resistance to saltwater. Mats and mattings, whether woven by hand or machine, are popular worldwide for their natural texture and ability to trap dirt. Coir pith, compressed into bricks or blocks, has become a sought-after product in horticulture, acting as an eco-friendly soil substitute that retains moisture efficiently. The adaptability of coir ensures that it serves both traditional domestic uses and modern industrial demands.

Economic significance in Theni

In Theni district, coir processing plays a pivotal role in supporting rural livelihoods. The industry employs a large number of workers, with women making up nearly 80 percent of the workforce. Coir production not only generates income but also provides year-round employment in an area where agricultural jobs can be seasonal. The processed fiber from Theni is sold within India and exported to countries such as China, Australia, and Singapore, primarily via seaports. Nationally, India earns over ₹70 crore annually from coir exports, and Theni's contribution is steadily increasing, driven by consistent quality and timely supply.

Cost of production

The cost of running a coir unit in Theni involves both variable and fixed expenses. Variable costs include labor wages, raw husk procurement, electricity charges, machine operation, and disposal of coir pith. Husk prices vary seasonally, rising during the monsoon and dropping during dry months, which affects profitability. Fixed costs cover administrative expenses, depreciation on machinery and buildings, and interest on long-term loans. Efficient management of these costs determines the competitiveness and sustainability of a coir unit in the market.

S.No	Cost component	Unit 1 (2000 t/yr)	Unit 2 (4500 t/yr)
Variable cost		Amount in Rs (lakhs)	Amount in Rs (lakhs)
1	Cost of labour	13.5	36.0
2	Cost of materials (husk)	64.0	90.0
3	Cost of unretting	20.0	28.0
4	Cost of power	2.4	5.4

5	Cost of machine maintainece	0.9	2.4
6	Interest on working capital	2.4	4.2
	Total variable cost	103.2	166.0
Fixed cost			
7	Land	50.0	230.0
8	Office & machine	50.0	150.0
9	Depreciation on buliding & machine	0.3	0.48
10	Interest on borrowings	7.2	9.0
	Total fixed cost	107.5	389.5
Total cost (VC+FV)		210.7	555.5

Challenges faced by the industry

Despite its strengths, the coir sector in Theni faces certain challenges. Fluctuations in raw material prices can disrupt production planning. Manual labor, while traditional, is time-consuming and physically demanding, highlighting the need for increased mechanization. Global competition from synthetic fibers also poses a threat, as artificial alternatives are often cheaper, though less eco-friendly. Moreover, quality control and standardization remain essential for maintaining export credibility in competitive markets.

Future Prospects

The global shift towards sustainable, biodegradable products is creating fresh opportunities for coir. By adopting modern processing techniques, diversifying into high-value products like geotextiles, and strengthening branding, Theni's coir sector can tap into niche markets worldwide. Government initiatives, skill development programmers, and research-driven innovations are expected to further boost production efficiency and quality, ensuring that coir remains a relevant and competitive commodity in the years to come.

Conclusion

The coir industry in Theni is a shining example of how traditional industries can adapt to modern demands without losing their cultural identity. From the humble coconut husk to eco-friendly mats, ropes, and horticultural products, the journey of coir reflects resilience, sustainability, and craftsmanship. With the right blend of tradition, technology, and marketing, Theni's coir industry has the potential to spin even greater success stories in the global market.

References

1. Jaganathan, D., Thamban, C., Subramanian, P., & Jayasekhar, M. S. (2016). Training manual production, processing and marketing mechanisms in coconut.
2. Madhesh, M., & Parvathi, S. (2025). Economic Empowerment Through Coir Industry: A Study on Production and Market Dynamics in Tamil Nadu's Namakkal District. *Journal of Economics and Business Issues*, 5(1), 26-44.
3. Muthumani, K., & Sathuragiri, V. An Empirical Study on Production and Marketing problems of coconut farmers in Theni district.