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# A Study on Value Chain Analysis of Exported Coir and Coir Products in Pollachi Taluk Coimbatore District

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**Dr. M. Mehar Banu<sup>1</sup>, Mrs. R. Divyabharathi<sup>2\*</sup>**

<sup>1</sup>Assistant Professor, Department of Economics, Sri GVG Visalakshi College for Women, (Autonomous) Udumalpet, Tamilnadu, India.

<sup>2\*</sup>Ph.D. Research Scholar, Department of Economics, Sri GVG Visalakshi College for Women, (Autonomous) Udumalpet, Tamilnadu, India.

Corresponding Email: <sup>2\*</sup>divyameenu01@gmail.com

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**Abstract:** India is the country that produces and exports the most coir and coir-based products. China is the primary market and the source of more than 40% of global exports of coir and its byproducts, which are currently purchased by more than 100 nations. The conversion of coconut husk waste material into useful resources is one of the few traditional or rural businesses. This sector produces more than 80% of the fiber produced globally, making it the world's largest producer of coir. The industry's market has grown since the start of globalization, although exports were originally limited to a few countries until 1980. During the year 2020-21, Exports of coir pith, coir fibre, tufted mats, handloom mats, and power loom mats, coir yarn, handloom matting, power loom matting, coir geotextiles, rubberized coir, and other types of coir have seen increases in both quantity and value, whereas coir rugs and carpets and curled coir have seen decreases in both. The amount of coir rope was down while the value was up for the item. 51% of all coir goods exported from the nation were coir pith, with export revenues of Rs. 1919.74 crores. Together, the value-added products made about 31% of all exports. The most valuable products were Tufted Mats. More than half of the coir exported from India leaves the country through the Tuticorin port. In terms of export revenue, Chennai Port comes in third with a share of 13, followed by Cochin Port with a share of 36%. The research specifically aims to: i) assess the increase and volatility in coir and key coir product production, consumption, and exports. ii) to evaluate production outcomes under various regimes of coir processing technology and the scope of available industry options.

**Keywords:** Coir Export, Coir Products, Value Added Product.

## 1. INTRODUCTION

Third in the world for coconut output, India is currently the world's biggest producer. Since of the growing cultivation of coconuts, Along with Kerala, Tamil Nadu, Karnataka, Andhra



Pradesh, Orissa, West Bengal, Assam, Tripura, Pondicherry, and the Union Territories of Lakshadweep and Andaman & Nicobar Islands, the coir industry has grown throughout these states. This expansion is a result of the Coir Board's activities. The natural fiber known as coir is made from the mesocarp tissue, also called the husk, of the coconut. This fiber is commonly referred to as "The Golden Fibre" because, when cleaned after being extracted from the coconut husk, it has a golden hue. India is the world's largest producer of coir fiber, accounting for over 80% of global production. The coir sector in India is made up of exporters, manufacturers, cooperatives, NGOs, and homeowners. The majorities of the more than seven lakh workers in the coir industry are from economically disadvantaged socioeconomic categories and live in rural areas. At present, around 350,000 metric tons (MT) of coir fiber are produced annually worldwide. Even in India and Sri Lanka, the two largest producers in the world, which together produce about 90% of the world's coir fiber, the husks that are accessible are almost always accumulated as trash during the processing of coconuts, and local coir mills only process a small percentage of this natural resource. 1,276,624 tonnes (1,256,462 long tons; 1,407,237 short tons) of coir fiber are produced worldwide. India produces 60% of the world's supply of white coir fiber, mostly in Pollachi and the Kerala State coastal regions. Currently, 110 nations import coir and items made from coir. Remarkably, the country's exports of coir and coir products hit a record high of 756153 MT, valued at Rs. 2192.45 crores, during the 2018–19 fiscal year.

### **Coconut Processing and Products**

The primary commodities derived from the dehusked, shelled, and peeled coconut are coconut milk, tender coconut water, and copra. Via further processing, the copra is turned into high-value coconut products like virgin coconut oil, desiccated coconut powder, and spray-dried coconut milk powder. It is this process that yields the coconut cake. After being processed, byproducts from these operations, such as coir and coconut shell, are used to make yarn, curling rope, activated carbon, and coir fiber and pith. To produce mats, mattresses, and rubberized mats for use in sofas, beds, and other furniture, yarn and curling rope are also utilized.

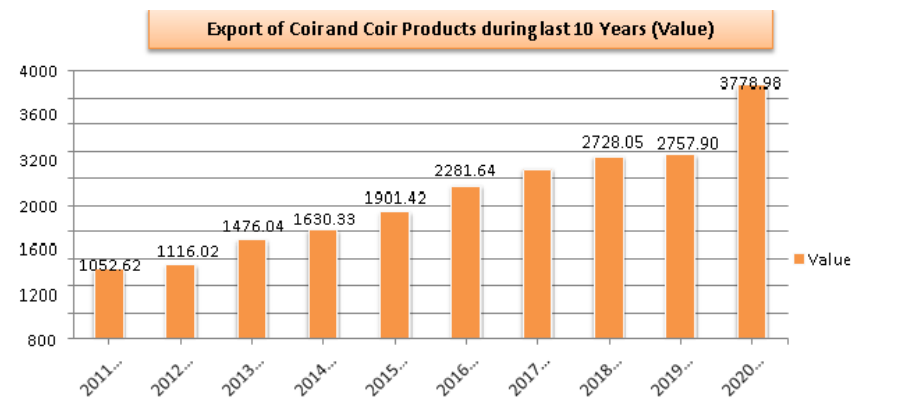
### **Value Chain Evaluation**

The following represents the cluster products' incremental value from the fundamental raw material to the finished good produced there: Green husk, including loading and unloading, is noted to cost Rs. 1.50. This amount is then increased to Rs. 18.00 per kg of fiber, and finally to Rs. 60.00 per kg of yarn. The cost of brown husk, which includes loading and unloading, is also evaluated at Rs. 1.20. This amount is then increased to Rs. 14.00 per kilogram of fiber, and then to Rs. 45.00 per kilogram of yarn. Brown fiber, which was formerly valued at Rs. 14.00 per kg, is now worth Rs. 30.00 per kg of curled coir. Brown fiber is the raw material used to make curled coir.

### **Exports of Coco Coir and its Derivatives from India (2020–21)**

2020–21 saw an all-time high record for coir and coir product exports. A total of Rs. 3778.98 crores was exported in coir and coir products for the 2020–21 fiscal year, an increase over the previous year's shipment of 988996 MT valued at Rs. 2757.90 crores. A 37% increase in

value and a 17.6% increase in quantity was observed compared to the export total from the previous year. Beyond its current 37% value growth rate, the export of coir products has never grown at a faster rate. The Ministry of MSME, Government of India, established an export goal of Rs. 3500 crore for the 2020–21 fiscal years for coir and coir products.



## 2. RELATED WORK

**Dr. R. Venkatesh and Dr. K. Kumaran (2019)** in their research titled "Export Performance of Coir Industry in India," they found that the export performance of tufted mat, rubberized coir, power looms, handlooms, and rubberized coir all gradually increased after globalization. A falling tendency was observed in the export of Curled Coir, whereas other coir products displayed a fluctuating pattern in their export performance. Tufted mats, Rubberized Coir, Power loom mats, and handloom mats all perform satisfactorily when exported. Future iterations of this trend ought to be maintained. In addition, the authors recommended that the Coir Board and the state government support entrepreneurs who want to produce value-added coir goods. Additionally, the study area's self-help groups, which are well-established, could be encouraged and assisted in producing both conventional coir products like carpets, mattresses, mats, and ropes as well as cutting-edge products like coco-lawn, coir bricks, coir composites, and coir fiber textiles.

**Sheeba. R and Raj. S Mohan (2014)** the coir business in India has been privileged to benefit from a growing consciousness regarding environmental conservation. Coir, a naturally occurring fiber that is environmentally sustainable in the broadest sense, is the fiber of the future. Coir will be able to resist the challenge from synthetic fibers in today's developing globe since it is environmentally good. It will be resilient to the competition from synthetic fibers in the developing world of today. The development of geo textiles, which help protect the environment by halting soil erosion, has been the biggest marketing push for coir in recent years. There have been notable changes to the product mix and export pattern. Based on the amount of fiber and yarn it exports, India is a supplier of goods with added value. This in turn led to a significant change in total volume and value of export.



**Ekambaram K and Raja, SK. Rameez (2014)** the purpose of this article is to analyze the amount and worth of coir and coir products that India exports. The primary objective of this article is to present trends in the value and volume of coir and goods produced from coir exported from India. A substantial shift occurred in the general sales volume trend of coir and coir products from the 1960s, when over half of the production was exported. Between 2006–07 and 2011–12, exports were Rs. 605.17 crore and Rs. 1052.63 crore, respectively. However, from September 30, 2012, onward, exports fell to Rs. 586.94 crore. Approximately 90% of the export trade is controlled by private producers and merchants. The USA is India's top importer of coir and coir-related items, ahead of China and the Netherlands. The Central and State Governments, the Coir Board, and non-governmental organizations should take the required actions to enhance the exports of coir and coir products from India by conducting export campaigns and raising the quality of coir products to meet international standards.

**Narendran and Roshni (2014)** the purpose of the study is to delineate the impact of national and industry-specific government interventions and the influence of political parties in power. The study employs an interrupted time series design from the annual national coir export data (1970-2012) published by the Coir Board. The study concludes by highlighting that the significance of economic environment has a greater impact on the trends of coir exports than industry-specific interventions. A seminal finding of this study is that there is a significant difference in the coir exports during the period of governance by the two political fronts in Kerala.

**Nagaraja (2011)** found that, in contrast to the 1960s, when more than half of the production was exported, the trend in the total volume of sales of coir and coir products had changed dramatically. The study focused on the export of coir and coir products from India. Ninety percent of export trade is controlled by private producers and merchants. Ten percent of the total is made up of a few significant co-ops and government-owned businesses. Western Europe, the United States, Japan, and West Asia are the primary export destinations for coir and its derivatives.

**Singaravelu, Kavitha (2015)**, while the production of coconuts and the coir industry expanded to all other states, Kerala continues to be the leading producer and exporter of coir and coir-related products. In an economy such as Kerala's, which has a significant unemployment backlog, the coir sector remains significant. This is due to the fact that no other industry uses a small amount of capital investment to produce as many jobs across all manufacturing processes. Over time, a number of external interventions, including those spearheaded by the government, have advanced. Such initiatives might certainly play a key role in transforming the old industrial sector into a revenue-generating sector for its dependent mass.

Since 1945, the federal and state governments have established a number of committees and task forces to examine industry-related issues and offer recommendations for various approaches to resolution. However, the outcomes of the government's efforts to address these issues fell short of expectations. In 1950, the Keralan government introduced a plan to establish a cooperative structure for the coir industry. Numerous coir co-ops were



consequently founded around the state. The primary aim of the Scheme was to facilitate regular work and a living pay for small producers and actual coir workers in the coir industry. The state's Co-operativization Scheme received a boost from the centrally supported Co-operativization Scheme of 1980. The central government of India spent Rs. 13.91 crores under this scheme to create coir co-ops across the nation between 1982–1983 and 1999–2000, with Kerala accounting for 85% of the total.

Under the direction of M.K.K. Nayar, the Planning Commission established a Task Force in 1973 to assess the many forms of support given to the coir industry and coir co-ops during the IVth Five Year Plan. The Task Force's main goals were to recommend appropriate actions for coordinating the industry's development programs and to propose the Vth Plan. The significance of R&D, modernization, and mechanization in this industry was noted in the paper.

**Rejeesh et al. (2017)** Natural fiber-reinforced composites are being manufactured using increasingly creative and inventive methods that aim to achieve sustainable production. However, a number of variables, including the length and content of the fiber, the treatments applied to the fiber, the dispersions of polymers into the fiber structure, and the interfacial fiber to matrix adhesions, affect the bio composite synthesis from natural fiber reinforcement. Coir fiber-reinforced composites are therefore receiving a lot of attention as a result of researchers' growing interest in the production of bio composite materials. From various angles (thermal, mechanical, morphological, and so on), several researchers have presented encouraging findings on created coir fiber-reinforced bio composites, indicating that coir fiber boards may serve as an alternate flame-retardant material to other plywood.

**Olveira et al. (2018)** full factorial design research on short coir fiber-reinforced composites has led to the proposal of a design that uses epoxy thermosets to reinforce short coir fiber under uniaxial pressure. This design is defined by its physical, flexural, and impact strength characteristics. When 35% fiber volume with 375 g m<sup>-2</sup> (fibre grammage/density) was used, the same study further asserted that the perceived impact resistance and flexural modulus were appropriate, despite discovering higher flexural strengths at 300 g m<sup>-2</sup>.

**Ayrilmis et al. (2011)** Fibers Polym reported on coir fiber reinforcements with polypropylene (PP) in the presence of a coupling agent for use in automotive interior applications. The study found that the increased volume of the fiber loading had an adverse effect on the bio-composites' water resistance and internal bonding strength. Additionally, they discovered that the tensile and flexural strengths of the composites rise at a 60% coir fiber loading peak.

### **Objectives of the Study**

This study's specific goals are to:-

- Analyze the rise and volatility in coir and main coir product production, consumption, and exports.
- Examine how the value chain for coir products changes depending on scale and available technologies.



- To evaluate the main coir industry value chain constraints and recommend appropriate policy actions.

**Scope of the Study**

The study examines the value chain for commodities made from coconut coir in Pollachi Taluk, the main source of coconut and coir products in the Coimbatore District. This study, which involves obtaining primary and secondary data, is focused on the manufacturing, marketing, and value addition of coir products. The study's coverage of the coir product value chain, export volatility, competitiveness in international markets, production performance under different coir processing technologies, and industry restraints will help focus attention on the potential expansion of the coir sector in the future.

**3. METHODOLOGY**

The research used in this study was based on secondary data from the Central Coir Research Institute in Alappuzha, Kerala, the Kerala Coir Board's Annual Reports, a few publications, and websites related to the coir business.

- **Exports: A Commodity-Based Perspective**

The following tables provide specific details on the export products that had significant fluctuations in both number and value:

- **Dropping in Both Value and Quantity**

Coir carpets and rugs, as well as curled coir, have demonstrated a declining trend in terms of both number and value.

S. No	Item	2020-21		2019-20		% Growth	
		Quantity (MT)	Value (Rs. Lacs)	Quantity (MT)	Value (Rs. Lacs)	Quantity	Value
1	Curled Coir	9381	2422.22	11290	2681.57	-16.9	-9.7
2	Coir Rugs & Carpets	327	427.90	367	483.82	-10.9	-11.6

- **Quality is Higher While Quantity is Lower**

While the quantity of Coir Rope has decreased by 1.4%, its value has increased by 5.5%. One possible reason for this could be the rise in the cost of coir rope per unit.

- **Growth in Both Amount and Worth**

S. No	Item	2020-21		2019-20		% Growth	
		Quantity (MT)	Value (Rs. Lacs)	Quantity (MT)	Value (Rs. Lacs)	Quantity	Value
1	Coir Pith	680898	191974.07	579980	134962.94	17.4	42.2
2	Tufted Mat	81799	80690.82	58300	56344.14	40.3	43.2



3	Coir Fibre	354123	62890.57	308457	49842.56	14.8	26.2
4	Handloom Mat	20527	24662.10	16910	19630.08	21.4	25.6
5	Coir Geotextiles	8583	7059.05	8068	6389.45	6.4	10.5
6	Coir Yarn	3849	2919.30	3028	2301.22	27.1	26.9
7	Handloom Matting	1418	1712.00	1177	1366.41	20.5	25.3
8	Rubberized Coir	982	1321.41	578	786.82	70.0	67.9
9	Coir Other Sorts	744	1200.96	298	476.93	150.0	151.8
10	Poweloom Mat	65	106.51	26	49.65	144.4	114.5
11	Powerloom Matting	11	19.24	5	8.53	103.9	125.6

• **Location of Export**

106 nations imported coir and coir products from India in the months of April through May in 2020–21. The USA was the top importer, accounting for 31.1% of the total value and 19.1% of the quantity. With a 20.7% value share and a 34.8% quantity share, China is India's second-biggest importer of coir products. The other nations that imported significant amounts of coir and coir-related items during the report's year were Canada, South Korea, the Netherlands, the UK, Spain, Australia, and Italy.

• **Mapping the Value Chain**

In the Pollachi Taluk Coimbatore District, four main value chains for coir and coir fiber products were found. The value chains are

1. Coconut Husk → Coir Fibre → Exporter
2. Coconut Husk → Coir Pith → Coir Pith Block → Exporter
3. Coir Fibre → Two Ply Yarn → Mat Making and Geo Textiles → Exporter
4. Coir Fibre → Curling Rope → Coir Mattress → Exporter

**4. RESULTS AND DISCUSSION**

- Future potential for value-added products on the global market will increase, thus the coir board and associated organizations should step up to advance the sector.
- To support state governments who forbid the use of plastic items inside their borders by promoting the use of coir products, which are environmentally beneficial.
- The government must use an easier loan application process since more financial help is required to make the necessary steps in the manufacturing process of value-added products.
- This can be related to the need to increase coir product exports to unexplored international and domestic markets.



- Producing coir goods in partnership with Coir Board allows industrial units to create eye-catching and inventive products that provide customers additional options, increasing sales and profit.
- In order to increase sales volume, the Coir Board will either act alone or in conjunction with well-known online retailers to market its coir products via e-commerce platforms.
- Companies are increasingly adopting sustainable practices and promoting the environmental benefits of coir.
- Innovations in processing technology and product design are improving efficiency and expanding product applications.
- Changes in trade policies and tariffs can impact export competitiveness. Staying informed about international regulations is crucial for exporters.
- Collaborations with international buyers and technology providers can help overcome supply chain challenges and improve market access.
- Adoption of advanced technologies in processing (e.g., automated spinning and cleaning) has enhanced product quality and efficiency.
- Products like high-quality mats and specialized geotextiles command higher prices and margins.
- Innovation in product design and functionality contributes to added value.
- Growing market due to increased environmental awareness and soil erosion concerns. Application in construction and agriculture sectors is expanding.

## **5. CONCLUSION**

The coir industry is a cottage/small-scale agro-based labor-intensive enterprise. The role of labour is crucial in this sector. Although capital is required for the industry to function properly, it has little impact on the sector's growth and productivity. The coir industry has been heavily focused on exports. India is one of the countries that export the most coir worldwide. It is estimated that value-added products account for over 90% of Indian Coir export revenue. The coir industry's social and economic significance to the region led to the decision to investigate it. The distinctive characteristics of coir's resilience, biodegradability, and eco-friendliness help it and its products thrive both domestically and internationally. Currently, the business holds a remarkable portion of the global market for value-added coir products. The most successful export promotion strategies employed by Coir Board in relation to trade and business include: participating in international fairs on a local and global scale as a spotlight country or focus product; facilitating workshops; communicating the company's message through specialized trade magazines; offering exporters support for developing their external markets in order to carry out a range of encouraging exports and export-related activities; and export promotion initiatives.

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