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Production and Marketing Process of Coir Industry: A Case Study of Alappuzha District

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Abstract
Coir has the honorable distinction of being such an excellent decorative item in the homes of the wealthy and a helpful article in the huts of the underprivileged. As a result, it meets the needs of all social classes. These small-scale businesses can create various coir goods using the heavy-duty handlooms they have set up in their facilities. These small-scale coir units are only present in Ambalapuzha and Cherthala, two taluks in the Alappuzha district. The coir industry may be proud of its long history and tradition. India's coir business originated in the ancient town of Alappuzha, which is located in the state of Kerala. Even if the study area's industry has challenges and issues in several of its functional areas, some favorable characteristics suggest that it has room for future expansion. It has inherent advantages because of existing problems and prospects related to the Sector. Based on this, the study adopts functional theories to present the coir industry's state-of-the-art in the Alappuzha district.

Keywords: Coir Industry, Small-Scale, Ambalapuzha, Kerala

Introduction

Coir has the honorable distinction of being such an excellent decorative item in the homes of the wealthy and a helpful article in the huts of the underprivileged. As a result, it meets the needs of all social classes. One of the country's traditional agro-based cottage businesses, the coir sector is centered in the states where coconuts are grown. The primary component of the coir industry is Coir, a golden, pure fibre removed from the fibrous Husk that covers the inside of the coconut.

India's coir industry was born in the ancient town of Alleppey, which is located in the state of Kerala. The coir industry's production sector began in Alleppey, now called "Alappuzha," in the latter half of the 19th century. As a result, the coir industry, centralized in the period before independence, completely collapsed. Currently, nearly 10,000 small-scale coir manufacturers are producing coir goods and distributing them to only 250 exporters.

These small-scale businesses can create various coir goods using the heavy-duty handlooms they have set up in their facilities. These small-scale coir units are only present in Ambalapuzha and Cherthala, two taluks in the Alappuzha district. This limits the Ambalapuzha and Cherthala taluks of the Alappuzha district to the Alappuzha coir cluster [Shahul Hameed (2003)].

The Coir Industry Act of 1953 authorized the Government of India to create the coir Board as a statutory organization for the overall industry development in India. The Coir Board's primary duties include domestic market promotion and other things. The Coir Board's responsibilities include ensuring that small-scale coir growers and workers receive fair compensation.

Significance of the Study

To highlight the current situation and increase operational efficiency, the study sought to critically evaluate the coir industry from a few critical functional aspects. Suggestions were made based on the study region, the Alappuzha district.

Objectives of the Study

1. To compare the marketing strategy of different units in the study area.
2. To identify the production process, involve the coir units.
3. To study the significant problem in the production and marketing team study.

Methodology

The Alappuzha district of Kerala is the study region for the research project. Alappuzha has been the home of coir products for a long time, thanks to the city's abundance of coconut and palm trees. Currently, Alappuzha is home to more than 250 coir exporters and manufacturers. For convenient sampling and data collecting, 30 coir manufacturers were chosen.

Collection of Data

The study is formulated based on both primary and secondary data. The primary data is collected through telephone interviews and online questionnaire methods. The secondary data were collected from the official State website and articles.

Review of Literature

The literature evaluation focuses on glimmers of prior studies that have been conducted in the field of the current investigation. It investigates potential directions for ongoing and upcoming research on the topic. Academics have conducted numerous research studies on various elements of the subject, including economists, researchers, and administrators in India and overseas. It includes several articles, working papers, and research materials spanning different subject concepts. A free and frank evaluation of the available literature, in addition to giving the topics and themes chosen for the exceptional study vitality, aids in identifying the research gaps discovered in prior efforts and ensures an impartial connection between the current study and the past. As a result, the researcher developed and presented a review of previous studies in the field of the coir industry in this part.

R. Ramkumar (2001), In his article "Costs and Margins in Coconut Marketing: Some Evidence from Kerala", through a field survey in four districts, this paper seeks to explore several facets of coconut marketing in Kerala. It tries to pinpoint some of the critical problems before concentrating on one of them: the persistence of intermediaries in the marketing channels and the profits they make during the marketing process. It attempts to analyze the costs and profit margins in different trade channels. It creates a composite index of marketing effectiveness for each channel which analyses the three marketing channels and observed that Channel III (Producer–Cooperative Society–Kerala Coconut Marketing Federation–Consumer) was the most efficient and cost-effective compared to costs found in Channels II (Producer–Oil miller–Consumer) and Channel I (Producer Copra Maker–Oil Maker–Consumer). He concluded that the presence of the intermediaries in the channels led to a low-price realization for the producers.

The Coir Board (2002) study titled "Study of the Brown Coir Fibre Sector" revealed that India has been producing more brown fibre during the past few years. Kerala saw an upsurge in the production of brown fibre. Although unrented fibre had been employed increasingly for the traditional Sector's manufacturing of doormats and matting, the study found that the value addition in the brown fibre sector was minimal. The study also looked at the export market and found that brown fibre had not significantly increased despite other coir products exhibiting an upward tendency.

Vijayachandran Pillai (2003), in his study,found that the private sector coir units rely mostly on secret agents for marketing, ten per cent on government agencies, and the remaining two per cent on direct sales and private exports. Additionally, he claimed that the primary issues facing the private sector coir units were a lack of sufficient orders and competition from other departments. Chilar Mohamed et al. (2003)stated in their study"Indian Coir Industries Challenges and Future Prospects" that the introduction of synthetic fibre in European nations has caused a significant decline in Indian exports of coir and coir products. They concluded that the coir industry needed urgent technological advancements to maintain its position in the global market for its products. They sought creative marketing strategies, including creating new drop products, which alone could not stop the decline in India's coir exports.

Christy Fernandez (2003), in his article "Revitalization and Cost Management of Small-Scale Units through a Consortium Approach in the Alleppey Coir Cluster", noted the challenge of s the primary fibre extraction sector faced, including the high cost of the market. He added that intermediaries control selling their products and supplying raw materials and loans to small companies. In this context, the author highlighted the significance and applicability of cost management and revitalization as key strategic inputs for reviving small-scale industries.

Balakrishnan (2004), In a paper titled "Measuring Productivity in the Manufacturing Sector," sought to develop total factor productivity as a measure of Productivity in place of labour productivity. According to him, labour productivity is a gauge of prospective consumption and, as such, a major contender for the indicator of standard of living, making it crucial to programs aimed at reducing poverty. Because it considers all inputs rather than just labour, total factor productivity is superior to labour productivity. He defines labour productivity as the amount produced for every hour worked. To assess Total Factor Productivity in the manufacturing sector, we can use gross output, net production, or value-added.

In contrast, for the labour input, we use employment, which can be calculated as either the number of employees or the number of hours they put in. The author claims that Total Factor Productivity is a gauge of a productive process's or a production unit's effectiveness. He describes two methods for measuring Total Factor Productivity.

The Crude Index of Total Factor Productivity Growth is the first method, while the Division Index of Total Factor Productivity is the second. Considering that all industries use several inputs while producing numerous outputs. The difference between the rate of growth of an output index and the rate of change of an input index is the crude index of total factor productivity growth. He also talks about the two methods for estimating real value added. In a single deflation, the price of gross production serves as an index to deflate nominal value added; in a double deflation, the price of material input serves as an index to reduce gross output separately. Real value added is used to explain the discrepancy. Since imports are the only source of intermediate inputs across the economy, decreasing their price is seen as a positive economic development even if Productivity remains unchanged. The change in value-added reflects the difference in the relative cost of materials. This should only be considered when assessing welfare; it is not appropriate when trying to detect changes in Productivity.

Coir Industry: An Overview

The coir industry is an essential agro-based employment-oriented traditional cottage industry in India. India is the largest coir producer in the world, accounting for more than 80% of the total coir fibre production. Kerala is the largest producer of coir and coir products in India [Balakrishnan (2004)]. Coir Industry is an export and employment-oriented industry which originated in Kerala and is spreading to other coconut-growing states of India. The value addition in products has been focused on the demands of the export market. The future of the coir industry depends on non-conventional products. The significant problems the coir industry faces today are not aware of the production of value-added products. The coir board must create awareness, provide training and guidance and encourage the Manufacturers to produce value-added products—a cottage industry in India.

Alappuzha coir has been manufactured since 1859 in the Ambalapuzha and Cherthala Taluks of Alappuzha District of Kerala State. The range of coir products, generally known as Alappuzha Coir, is manufactured out of coir yarn spun from coir fibre extracted from the outer of coconuts, also known as "Coconucifera", grown widely in the coastal regions of the country. The coir fibre is removed in Kerala by a biological process known as "retting", which involves immersing well-matured husks of coconut in saline backwaters for months together (i.e. 6 to 10 months) and extracting fibre by beating the retted Husk with wooden mallets by women workers. Retted wool will be fluffy; having golden yellow colour is pliable for spinning coir yarn. The fibre extracted will be dried under sun charka, mainly in the coastal belt of Kerala, starting from Thiruvamanapuram District in the southern part of Kerala to Kozhikode in northern Kerala. The coir yarns spun in each area have different geographical indications synonymous with the place of origin of the yarn, like Anjengo, Aratory, Vycome etc.

Even though coir yarn has been spun from time immemorial in the coastal belt of Kerala, the Manufacture of value-added products like coir doormats, mattings, carpets etc., was first commenced in the Alappuzha town only in the year 1859. It has been reported that "The coir mats and mattings industry was introduced in Travancore in the year 1859-60 by late Mr James Darragh, the founder of M/s. Darragh Smail & Company Ltd. Of Alappuzha, the mattings were first manufactured on boards and loomed with the assistance of a few trained weavers from Bengal"(www.coirboard.gov.in).

Subsequently, there has been a spurt of mats and mattings manufacturing units in the Ambalapuzha and Cherthala Taluks of the Alappuzha District established by the Europeans. These factories produced coir mats, matting carpets, rugs and geotextiles in their units in more enormous looms by engaging local workers. Such products were not being manufactured elsewhere in the country and worldwide.

Traditionally a cottage industry, the coir sector has recently been undergoing substantial changes as more capital-intensive products are coming online. Non-coir inputs are also increasingly being used, with Coir accounting for only 60% of the total effect. New products include:

- **Geo-Textiles**: Similar to coir matting, geotextiles have a looser weave and are used Outside for erosion control ('pre-vegetative protection').
- **Rubberized Coir**: Using another important Kerala commodity, 'rubberized' products include products that combine Coir and rubber (such as a coir mat with a rubber trim or backing) or blend the coir fibre itself with rubber (such as coir-rubber composites for car seat stuffing).
- **PVC Mats**: One of the latest changes in coir production, PVC mats are made from Coir fibre brushes adhered to a PVC base (or 'seat').
- **Mixed Products**: The Alappuzha floor-coverings cluster increasingly incorporates non-coir inputs into its products. Apart from rubber and PVC as raw materials, jute, sisal, and cotton are also used.
- Units in the cluster are involved in various activities of the production process, as mentioned in Table 1.1

Table 1.1 Details of the Units Involved in Various Activities

1	Spinning	8
2	Dyeing	15
3	PVC Tufted Coir Products	7
4	Handlooms / Fiber Mats	210
5	Coir Matting's / Rugs	182
6	Rubberized Coir Products	29
	Total	451

Source: Manual on Alleppey Coir Cluster

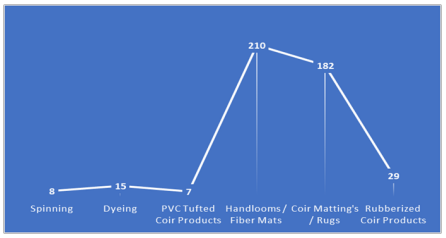

Figure 1.1 Details of the Units Involved in Various Activities

Source: author's calculation

Production Capacity

Coir units in Alleppey are classified based on production capacity for each activity. Table 1.2 shows the classification of units based on production capacity.

Table 1.2 Classification of Coir Units Based on Production Capacity

Si. No.	Activity	No. of Coir Units	Production Range
1	Spinning	8	3000-6000 tons/year
2	Dyeing	15	1000-10000 tons/ year
3	PVC Tufted Coir Products	7	50-105 lakh m^2/year
4	Handlooms / Fiber Mats	210	30-50 lakh m^2/year
5	Coir Matting's / Rugs	182	50-150 lakh m^2/year
6	Rubberized Coir Products	29	100-150 lakh m^2/year

Source: Manual on Alleppey Coir Cluster

There are eight coir units in spinning the production tons per year is ranged from 3000-6000 and the dyeing has 15 units it produced 1000-10000 tons per year. But the rubberized coir products have 29 units and produced 100-150 lakh meter square per year.

Coir Industry in Alappuzha

In India, Kerala is the largest producer of coir and coir products. Coir Industry originated in the state of Kerala, and it is spread across other coconut-growing states of India. Now, the coir industry is export and employment oriented. Coir industry is an agro-based rural Industry providing work to over seven lakhs workers in the significant coconut-producing states of the country. Alappuzha district has witnessed several labouruprisings that left a lasting imprint on the history of the people movement in Kerala.

Coir processing has traditionally been a cottage industry in Alappuzha, but substantial changes are taking place as more diverse, capital-intensive products come online. Non-coir inputs are also increasingly being used, with Coir accounting for only 60% of the total effect. India is the largest coir producer in the world, contributing more than 80% of the production of coir fibre in the real world.

Over a hundred years ago, the first coir factory in India was started in Alleppey in 1859 by Mr. James Darragh. The factory was supposed to produce coir mats, matting and other floor coverings. Coir industry attained the status as the largest cottage industry in Kerala by providing more than a million people work opportunities as Coir's largest producer and exporter. Coir products were exported to more than 80 countries from India. The United States of America is the biggest export customer, with a share of more than 40% of the total export. Coir geotextiles and pith are treated as the future and innovative products of the coir industry. Coir pith is highlighted with its eco-friendly nature and can be used effectively for improving soil behaviours, preventing soil erosion, and helping consolidate soil.

Coir is a 100% organic and bio-degradable fibre with less water absorption capacity. Coir has a definite mileage over and above synthetic geotextiles. Coir geotextiles are essential in light of environmental aspects and issues. As a cottage industry, coir production contributes and playsa significant role in the economy of the coconut-growing state of Kerala. Alappuzha district is an aquaculture society focused on coconut cultivation. As coconut cultivation is anessential forming activity in existence very early stage. More industries are on producing coir pith and fibre only form in this. Coir is a product of the coconut tree, Coconucifera, also known as coco fibre.

Coir fibre is relatively water-proof and is one of the few natural fibres resistant to damage by salt water. The history of the coir industry in the world indicates that the modern coir industry was started in England. The golden textured Indian-made coir fibre captured the European and world markets. From there, the success of the Indian coir industry was created, and there was no need to look back. The corporation will establish coir factories in Kerala, especially in Alleppey, Kollam, Kozhikode, and Kochi. Kerala occupies the coir industry's prominent position among the essential traditional cottage industries in India's southwestern coastal belt.(www.coirboard.gov.in) 1. Alappuzha Municipality 2. AryadGram panchayat 3. Mannachery4. Mararikulam South 5. Punnapra 6. Amlappuzha North 7. Ambalappuzha South 8. Purakkad South 9. Purakkad(www.coirboard.gov.in)

Production and Marketing Analysis

Alappuzha district has more than 250 Exporters and Manufacturers of the coir Industry. In this, 30 Coir Industry selected for convenient sampling for data analysis.

Location of Units

The choice of an ideal site ensures that units operate smoothly and efficiently while incurring fewer operational costs. The nature of the linkages created and the sort of diversification that occurs are significantly influenced by location. According to estimates, the place of the business will control the production and distribution costs. The location-wise distribution of the coir units in the study area is presented in Table 1.3

Table 1.3 Location – Wise Distribution of Coir Industries in Alappuzha District

Location	No. of Units	Percentage (%)
Urban	6	20
Rural	24	80
Total	30	100

Source: Authors Calculation

Age of Units

The most significant factor affecting experience and performance in the production of coir fibre has historically been the age of the unit. The year-wise formation of the branches of the study area is presented in Table 1.4

Table 1.4 Year-Wise Information of Units in the Study Area

Year	Number of Coir Units	Percentage (%)
Before 1990	19	63.3
1991-1995	1	3.3
1996-2000	3	10
2001-2005	1	3.3
2006-2010	3	10
2011-2015	3	10
Total	30	100

Source: Authors Calculation

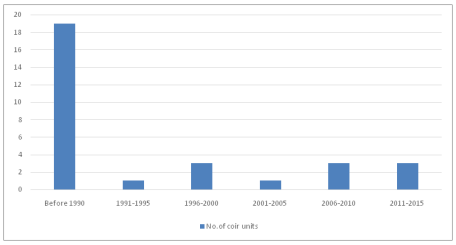

Figure 1.2 Year-Wise Information of Coir Units in the Study Area

Source: Primary data

Figure 4.3 shows that out of the 30 total units, 19 (63.3 percent of the Coir Units) were initiated before 1990. Only 1 (3.3%) Unit was started between 1991 and 1995. The formation of coir units is less in the following year than before 1990. The table also reveals that out of 30 coir units, 3 (10%) were begun between 1996 and 2000 and 1 (3.3%) between 2001 and 2005. And in the years that followed, from 2006 to 2010, only three units (10%) and three units (10%) from 2011 to 2015 arose. The majority of coir units were founded before 1990. It demonstrates the Coir Industry's historical heritage in Alappuzha.

Type of Organization

Selecting the correct type of organization is one of the essential inputs for any business. The details of coir units and their styles of the organization are given in Table 4.4

Table 1.5 Forms of Organization of Coir Units in Alappuzha District

Type of Organization	No. of Coir Units	Percentage (%)
Partnership firm	4	13.3
Company	9	30
Sole Trading concern	7	23.3
Proprietorship	10	33.3
Total	30	100

Source: Authors Calculation'

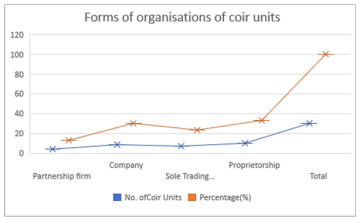

Figure 1.3 Type of Organization of Coir Units in Alappuzha District

Source: Primary Data

Figure 4.4 demonstrates that the four forms of organizations—partnership firm, company, sole trading concern, and proprietorship—manage the coir units used in the study. As shown in Table 4.4, 10 coir units are proprietorships, accounting for 33.3 percent of the total, while 9 coir units are companies, making up 30% of the total. The remaining 7 units are sole proprietorships, making up 23.3 percent of the whole, and the remaining 4 units are partnerships, making up 13.3 percent of the total.

Sources of Raw Materials

Raw materials are thought of as the lifeblood of any industry. The coir units are fed by the fibrous Husk covering the coconut trees. The sources from which they meet their requirement is presented in figure1.5

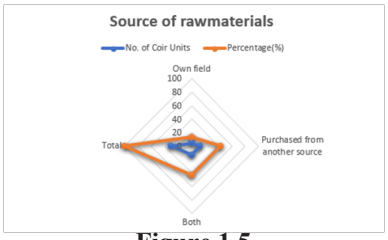

Figure 1.5

Source: Primary Data

Figure 4.5 shows that out of the 30 units, 19 units (or 43.3 percent) depend on husk dealers or coconut merchants as their source, meaning they are bought from another source. In comparison, the remaining four units (or 13.3 percent) rely on their field for their raw material supply. The 19 remaining units depend on both, which means they have their area for sourcing raw materials and buying from other sources. It contains 43.3 percent coir units.

Type of Raw Materials

The performance of the coir industry is heavily influenced by the raw materials used in the manufacturing process. The type of raw materials used in coir units is presented in figure 1.6

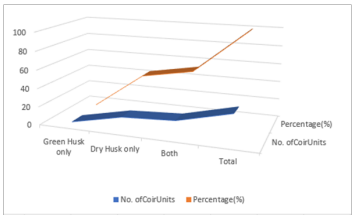

Figure 1.6 Type of Raw Materials used in Coir Units

Source: Primary Data

Figure 4.6 shows that only 1 (3.4 %) of the 30 coir units used green Husk as raw material, while 13 (43.3 %) of the coir units only used dry Husk. However, the remaining 16 coir units (53.3%) employ dry and green Husk as their primary raw material.

Final Products

The finished product of coir units is crucial. Since coir goods are environmentally beneficial. The majority of the units manufacture multiple goods. Coir matting, coir yarn, geotextiles, coir rope, and other major coir products are available. Table 1.6 lists the specifics of the coir units' end goods.

Table 1.6 Final Products Manufactured in Coir Units

Final Products	No. of Coir Units	Percentage (%)
Coir fibre	13	43.3
Coir yarn	11	36.7
Coir rope	9	30
Coir mats	27	90
Geo-Textiles	16	53.3
Other	23	76.7

Source: Authors Calculation

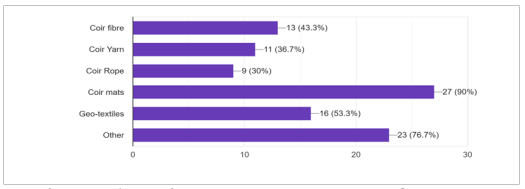

Figure 1.7 Final Products Manufactured in Coir Industries

Source: Primary Data

The finished goods produced in coir units are seen in Figure 4.7. Every coir unit in this situation generates multiple products. 27 (90%) of the 30 coir facilities generate coir matting. Different types of coir mats are produced; they are significant export-oriented goods. 16 (53.3%) of the 30 coir units create geotextiles. It is employed to stop soil erosion. Most facilities make geotextiles because it is the most in-demand product. In the case of coir fibre, 13 (43.3%) coir units create it, and 11 (36.7%) coir units make coir yarn. 30 coir units are converted into 9 (30%) coir units of coir rope. Coir pith, coir matting, non-woven goods, garden items, etc., are also included in the list of others. The coir units make these goods from 30 to 23 (or 76.7%).Aflourishing industry generates profits. Table 4.12 shows the average gain of coir units in a month.

Table 1.7 Average Profit of Coir Units in a Month

Average Profit per Month	No. of Coir Units	Percentage
Below 50000	6	20
Between 50000-100000	12	40
Above 100000	12	40
Total	30	100

AverageProfitperMonth No.ofCoirUnits Percentage
Below 50000 6 20
Between 50000-100000 12 40
Above 100000 12 40
Total 30 100
Source: Authors Calculation

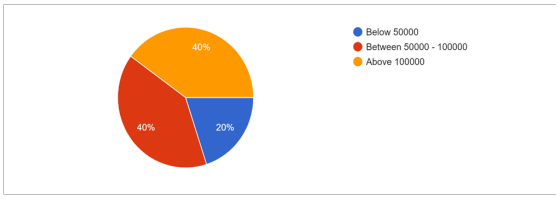

Figure 1.12 Average Profit Of Coir Units per Month

Source: Primary Data

Figure 4.12 shows the average profit of Coir units per month. Out of the total study units, 12 (or 40%) had average profits above $100,000 and 12 (or 40%) had profits between $50,000 and $100,000. Only 6 (or 20%) of the units have a value of less than 50,000.

Findings

The findings of the study are displayed below:

- It has been determined that the first coir factory opened in India's Kerala state's Alappuzha in 1859. Before independence, the coir industry was highly centralized; today, only about 10,000 small-scale coir manufacturers produce coir products and supply them to 250 exporters.
- In 2020–21, the export of coir and coir products reached a record high of 11,63,213 tonnes and was worth Rs. 3,77,897.91 crores.
- Out of the study's total sample size, it was discovered that 80% of the coir industries are located in rural locations, with the remaining 20% located in urban areas.
- The majority of coir units trace their origins to before 1990. It displays the skill and effectiveness in the Manufacture of coir fibre in the Alappuzha District.
- According to our sample, most of the coir units in Alappuzha get their own raw materials and buy them from other sources. 43.3 percent of Coir units purchase raw materials from third parties, while 43.3 percent use third parties and their inventory. 13.3 percent of people use fieldwork as their unit's raw material.
- According to the observation, green and dry Husk are the two types of raw materials used in coir units. The majority of coir systems use both dry and green Husk. 3.4% of coir units utilize only green Husk, whereas 43.3% use only dry Husk.

Suggestions

Based on the results of the current study, the researcher makes the following recommendations for the maintenance and enhanced performance of the coir industry:

- Most Coir manufacturing plants struggle with issues like poor market information, high transportation costs, a lack of funding, unsuitable storage facilities, and a lack of government backing. As a result, the relevant authorities take appropriate action and provide more financial

support to this sector to address these issues.

- The state government and the Coir Board may encourage the entrepreneurs to pursue a different stage of coir production that involves the creation of value-added coir products because the coir fibre serves as the primary raw material for the production of coir and coir products.

Conclusion

This study discussed "Production and marketing of the Coir Industry in Alappuzha District. "Because of the coir industry's social and economic significance to the region, it was chosen for the current study. Because of their distinct durability, biodegradability, and environmental friendliness, coir and coir products are seeing good development in both the domestic and international markets. Currently, the business receives an astounding 89% of the need for value-added coir products worldwide.

The current study is a modest attempt to shed light on some particular aspects of the operations of the coir plants in Kerala's Alappuzha District in light of the state of the Sector. The current study results are widespread across most of the units in India and are not exclusive in character. There have been many new factories built, particularly in the Private Sector. A growing number of small and medium-sized enterprises are rising to the challenge. The study underlines the issues that the industry in the research domain faces and that there are no easy fixes. However, most of their operational issues could be resolved by increasing value addition and accessing technology and information. The Sector has an excellent opportunity to leave a lasting impression on Kerala's industrial landscape and, eventually, contribute to the nation's growth. Therefore, the parties involved would be making the right move if they gave the study's recommendations letter and spirit. The Indian Government recognizes the expansion of the coir business in India and provides numerous programmes to aid it. The coir industry's export trend is steadily rising. The coir industry dominates the Alappuzha District economy. Presently, Alappuzha's coir sector has very bright future possibilities.

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