

SURVEY
ON
STATUS OF COIR INDUSTRY IN KERALA





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EXECUTIVE SUMMARY

1.0 Preface

Coir is a unique natural fibre used in diverse applications. It is an important sector as far as economy of Kerala State is concerned. The industry is a traditional one, with traditional and, in some ways, outmoded practices, and has had a chequered history. Most of the coir workers are coming from socially and economically backward classes. The industry provides direct employment to more than 3.5 lakhs workers, majority of whom are female. It is mainly concentrated in coastal districts of the State. The major constituents in the coir sector are Co-operatives, Private, Public, Government undertakings and unorganized manufacturing units. But, over a period of time, the coir sector has not grown appreciably and has remained almost stagnant. In order to ascertain the causes for the present unsatisfactory situation, Coir Board decided to conduct a Status Study of the industry, which will identify the problems of the various segments of the industry and arrive at likely solutions so that necessary policy measures can be initiated and further promotional and other schemes intended to mitigate the current problems in the industry can be launched

2.0 Objectives and Methodology

2.1 Objectives

The major objectives of the study are:

- To assess the availability and consumption of raw materials like coconut husk in the industry;
- To critically evaluate the quality and marketability of coir products of the State;
- To analyse the social and economic conditions of the workers engaged in the industry and ways to ameliorate their problems;

- To study the movement of fibre, yarn and coir products from and to Kerala and suggest measures to optimize methods and save costs;
- To make an assessment of the socio-economic aspects of coir industry in Kerala and its impact on the larger economy of the state;
- To study the present status of technology in the industry and to consider the opportunities for technological upgradation with a view to achieve improvement in productivity and product quality;
- To analyse the credit flow and suggest ways and means to increase the same to enable the industry to increase production and exports.

2.2 Methodology

The following methodology was adopted to carry out the study:

- Collection of secondary data from published sources;
- Preparation of a comprehensive questionnaire based on a pilot study;
- Collection of primary data by field survey;
- Processing of data and analysis by using sophisticated statistical computer software;
- Preparation of the draft report and presentation to the client;
- Finalisation of report based on the feedback and comments from various quarters.

3.0 A Brief History and Status of Industry

Coir industry was established in the middle nineteenth century mainly in the organised sector, predominantly by foreign companies. During the initial years the performance was good and industry grew at a reasonably good rate. However, in the recent past, the industry has been stagnating owing to various reasons, some of which are enumerated below:

- Low raw material availability;
- Technological obsolescence and lack of timely technology upgradation;
- Inadequate marketing system;
- Low productivity;
- Indifferent and inconsistent quality and lack of awareness of the need for quality;
- Poor raw material utilization;
- Low value addition;
- Poor pricing;
- Lack of innovation and introduction of new products;
- Scant attention to research and development efforts which will help in developing improved and new products with more value-addition and acceptability in the domestic as well as in the foreign markets;
- Failure of the co-operative sector to meet the targets;
- Competition from other natural fibres like sisal, jute, etc.
- Government policies on social, economical and political issues.

The present trend of upgradation of technology and use of improved production methods in the industry in an organised way started in the early nineties with the introduction of mechanisation in spinning and weaving. The State of Kerala accounts for 70 per cent of the production of coir products, and other states, who produce coir products are Tamil Nadu, Karnataka, Andhra Pradesh, Orissa West Bengal and North-eastern states. The promotional efforts are spearheaded by Coir Board supported by other state-level organisations. A point worth noting and appreciating is the fact that export of coir and coir products has recorded a growth of 10 per cent in 2003-04 against an average of 3 per cent in the previous years.

Coir Board is a statutory body established by an act of Parliament, and it has now assumed the role of a promotional organisation as envisaged in the vision document named Millennium Development Mission Document (MDMD). The main objective

is to attain a quantum leap in the production and sale of coir products both in foreign and domestic markets. Co-operatives play a big role in the industry with a number of activities and a large share of workers under their fold. Kerala State Coir Co-operative Marketing Federation (COIRFED) is the apex body in this sector. To provide better welfare conditions, Kerala Coir Workers Welfare Fund Scheme was introduced in 1989. To achieve technical development, develop new processes and innovative products and achieve quality improvement, Central Coir Research Institute (CCRI), Alappuzha and Central Institute of Coir Technology (CICT), Bangalore were established under the aegis of the Coir Board. Value added products and product diversification are the aim of these Institutes. Coirply, Pithplus and Coirret, Geotextiles are some of the notable contributions by these institutes.

The activities in the coir sector consist of the following:

- Collection of the main raw material, namely coconut husk;
- Defibering of the husks;
- Spinning of coir yarn and production of ropes;
- Weaving;
- Marketing of products in India and abroad.

4.0 Field Survey

To collect data for the purpose of this study, all the major segments of the coir sector were covered including the workers, production units, opinion makers, marketing organizations, exporters, etc. The first part of the survey was to assess the socio-economic conditions of coir workers and the sample size was 2500. Of these 78.6 percent were women. It was followed by a survey of manufacturing units and other related institutions in the coir sector.

The major findings of the survey are:

- 40.5% workers are in the age group of 30-45;
- Majority of workers (57.8%) are having only education upto 8th standard;
- OBC/OEC communities constitute 81 per cent of the work force;
- 46.4% of workers are having 3-4 members in the family;
- 60.7% workers live in houses with tiled roofs;
- 42.1% of workers are having an annual family income in the range of Rs.10,001 – Rs.20,000/-;
- 32.4% of workers are living only on the income from coir sector;
- Most of the workers are employed in spinning sector;
- 32.8% of workers were employed for 151-200 days and 31.0% for 201-250 days in a year;
- 94.6% of the employment was full time;
- Unorganised sector employs 68.7% work force whereas 25.8% employment is in the co-operative sector.
- 17.8% workers are suffering from some form of allergy due to the nature of work;
- Self Help Groups and Cluster Development Scheme are active only in Alappuzha District;
- Total number of work force in Kerala is 3,60,000;
- Traditional ratts are utilised for 60% of the production of yarn, whereas the motorised ratts are used for the remaining 40%;
- 1,30,000 Tonnes of fibre is produced in Kerala;
- 86,000 Tonnes are brought in from outside the State;
- 89.7% of units are in small scale sector
- 51.5% units are working in the primary sector;
- 48.4% of units are non-mechanised and 19% are partly mechanised and 24% units are mechanised in the primary sector;

- In the manufacturing sector, 55.7% are producing matts and mattings;
- 48% units are using retted fibre in the primary sector;
- For retted fibre 60.7% sources are retting units;
- Jute and Sisal accounts for 9.33% of total production;
- Tamil Nadu is major source of unretted husk;
- Nearly 50% of the units are not registered with Coir Board;
- Fibre shortage is a major problem;
- Percentage of units availing term loan is about 20%;
- 30% units are operating with capacity utilization varying from 26% to 50%;
- 24.5% units are having an annual income between Rs.1.00-Rs.5.00 lakhs and 21.3% between Rs.5.00-10.00 lakhs;
- Nearly 10% units only are availing export credit;
- Only 7% units are having ISO certification
- 92.8% units face raw material shortage, whereas 78.4% have manpower problem;
- 71.4% units expect Govt. assistance;

5.0 Price Support Schemes

To ensure better price realisation for coir and coir products, the concept of support price system was introduced for exports and purchase. But the results were not encouraging especially in the area of purchase leading to various malpractices. As a result, the Government of India withdrew the Purchase Price Enforcement Scheme in 2002.

6.0 Welfare Measures

Government of Kerala introduced Kerala Coir Workers Welfare Fund Act and created State Coir Workers Fund Board in 1987 to promote the welfare of workers. The number of workers registered in the Board is around two lakhs. The Government of Kerala has a decisive role in the management of the Board. At

present the functioning of the Board leaves a lot to be desired; however, it has the potential to function in a more constructive way for the benefit of the workers.

7.0 Need for a Pro-active Approach

Coir has got many inherent advantages, but the industry is yet to achieve its real potential for want an integrated approach. Schemes to promote the industry should include programmes to increase husk availability, increase productivity, for product innovation and diversification, improvements in standards and quality, to increase value addition through innovation and better packaging, improve scientific and technical inputs, provide better financial support for the industry and workers, etc.

The areas which need urgent attention are the following:

- Husk collection;
- Improved and quicker methods of retting;
- Increase in productivity in spinning through mechanisation;
- Innovation and mechanization in weaving;
- Bleaching and dyeing;
- Introduction of new products;
- Packaging.

An action plan for the development of the industry should include:

- Making Kerala a hub for manufacture of coir and coir products;
- Technological upgradation and product innovation;
- Increased productivity and profitability through mechanisation;
- Attracting the younger generation to the industry by making available better working conditions and attractive financial packages;
- Introducing vocational courses in coir making;

- Expansion of Cluster Development Scheme and Self Help Groups;
- Development of Common Facility Centres;
- Institution-industry linkage for Technology upgradation;
- Creation of Special Economic Zone for coir;
- Improvement in quality and introduction of Quality Management Systems;
- Outsourcing for intermediates;
- Formation of Consortia;
- Organising seminars/B2B meets to increase awareness and markets;
- Strengthening and modernising the co-operative set up;
- Monitoring and Evaluation of fund utilization;
- Development of a structured information system;
- Welfare Measures through Group Linked Insurance Scheme and Health Cards;
- Development of logistically located raw material banks;
- Need-based financial assistance for technology upgradation, acquisition of quality management systems, export, etc.
- Explore scope for FDI;
- Financial outlay of Rs.525 crores for five years for development programmes including those for technological and skill upgradation, marketing, product innovation,etc.
- Creation of additional direct employment for 50,000 persons and indirect employment for more than a lakh of workers and, in addition, provision of increased employment to the workers already engaged in the industry;
- Policy initiatives from the State and Central Governments to achieve the above objectives.

8.0 Conclusion

Coir industry though more than 150 years old, is still to achieve professional approach and strength to be competitive in the field. In the study conducted by KITCO, it is observed that the problems are multifaceted and multi-dimensional.

The employees are demotivated and younger generations are hesitant to take up jobs in the sector because of low income level and absence of a modern factory set up. The level of income is much below compared to other sectors. The shortage of fibre, environmental degradation, poor result in the mechanisation programme, etc. are other key factors for the backwardness of coir sector. A concerted effort for promoting coir products by introducing new products, product substitution, searching new areas of application integrating traditional sector with new management approach, new strategies for market development and export promotion, programmes for widening the husk collection areas etc. are to be made to ward off the challenges faced in the era of globalisation. Programmes for introducing state-of-the art schemes and systems are to be given maximum priority. Development of need based financial assistance is another important aspect in the coir sector along with appropriate decisions like creation of Special Economic Zone.

Hence, it is clear that an action to bring in a structural shift in the industry is highly warranted not only to overcome the existing problems but also to surge ahead to bring more prosperity to the sector and thus to the State. The motto should be to convert the low value high volume product to high value high volume product providing job security to the employees, benefitting the economy of the State taking the coir sector with a competitive spirit.

CHAPTER I

INTRODUCTION

1.1 Preface

1.1.1 Coir, is a unique natural fibre used in diverse applications of great economic importance. This wonder fibre is extracted from coconut husk and is spun into coir yarn and a number of other value added products such as coir rope, mats, mattings, rugs carpets etc. are produced. Coir fibre is also used in combination with other natural or synthetic fibres or materials such as Rubber or synthetic polymers for making products that are better suited for specific uses. Coir and coir fibre products sustain the livelihood of a significant segment of the population in the coastal belt of southern India, especially Kerala.

1.1.2 Coir is a multicellular fibre with celluloid and lignin as major constituents. The high lignin content contributes to the hard and rigid nature of the fibre. Its resilience, damp and rot resistant nature, and capability to absorb and retain colouring materials makes it eminently suited to make fibre mats, carpets, matting, door mats, etc. Similarly the extra-ordinary endurance capability and hard-wearing characteristics of this material coupled with weather resistance make it ideal for making ropes and cordage and brushes besides putting this to other uses such as in upholstery and in composite products in combination with rubber and synthetic elastomers. Coir is enviro - friendly as it is biodegradable. All these characteristic properties of coir favour full exploitation of the potential through preferential treatment among natural and synthetic fibres. It is unfortunate that the technical possibilities of this wonder fibre have not been systematically explored or potentials fully exploited or evaluated commercially. Concerted efforts for furthering the use of coir in non-conventional applications such as in geo-textiles are presently being pursued with vigour and this augurs well for the industry.

1.1.3 Among natural hard fibres serving human utilities, coir is unique in the sense that it is the only natural fibre that is associated with the fruit of a tree that is cultivated for realising the edible values of the fruit. Other competing fibres such as jute and sisal

are grown solely for realizing its fibre values. As such, utilisation of the fibre through coir making is bound to be more economical in comparison with the economics of other natural fibres.

- 1.1.4 The coir industry has been significantly export-oriented and a valuable foreign exchange earner. On an average about 20 per cent of the total coir products manufactured are exported from the country, mainly to West European countries, United States of America (USA) and Canada. The products include fibre, yarn, mats, matting, rugs and carpets, rope and rubberised coir. Unfortunately, the exports in the recent past show a declining trend. Increased competition from other countries, use of substitutes, traditional methods of production, delay in executing orders, etc. are some of the major reasons mentioned for reduced exports. Because of this, the manufacturers have started to pay more attention to the internal market that was not fully exploited earlier. Efforts have been stepped up to popularise coir products in India by various organisations both in public and private sectors and to penetrate to huge market that exist for floor covering and other applications. In the mean time, coconut cultivation also got spread over in many regions other than the traditional areas like Kerala, in a significant way. Prominent among the states other than Kerala, which have promoted coir industry, are Tamil Nadu, Karnataka, Andhra Pradesh and Orissa.
- 1.1.6 In Kerala, the coconut kernel is an essential food ingredient that contributes to taste in a number of preparations. Coconut is also valued for the extractable edible oil contained in the kernel. Thus the fibre associated with coconut is often considered secondary and due to lack of an organised collection mechanism, a large part of this is utilised as fuel and only the remaining is utilised for fibre extraction. This happens even in the coconut oil industry where they concentrate on the oil and the oilcake. Enough attention is not paid for utilisation of the fibrous part.
- 1.1.7 The coir industry in Kerala presently provides direct employment to about 3.60 lakhs persons including those who are employed for part of the year. It is a fact that a good percentage of this are women engaged in the spinning of coir. The indirect

employment is also very significant. The potential of this industry for upgradation and expansion is high and if taken advantage of, this will have a significant impact on the coastal economy of the State. Recognising this fact, the Government introduced a number of regulations for sustaining the industry including those intended to improve the availability of husk for the industry at reasonable cost. Thanks to increased level of mechanisation, utilisation of husk for production of fibre out of the total husk available in the region is expected to improve from the current level of 30 per cent to 50 per cent.

- 1.1.8 It is imperative that the Government of Kerala evolves strategies for research and development in this field and stimulates diversification and growth of the industry through co-ordinated activities among the functional Ministries concerned with Agriculture, Industry and Infrastructure Development. An enlightened policy in this regard is very much required and; there is no doubt that such a policy is bound to make a significant impact on the economy of the State.
- 1.1.9 The industry is beset with certain inherent problems that need to be overcome to achieve accelerated growth. Neither the coconut farmers nor the end product manufacturers are involved in the primary and extensive activities of husk collection, retting husk, fibre extraction and spinning of yarn. The initiatives for these peculiarly rests with the intermediary or informal sector operated by the local merchant community. The fact that the upward linkage is weak creates a disjointed situation with structural and productivity implications of sustaining a large mass of under-employed and un-organised workers.
- 1.1.10 The Exporters of coir in Kerala are facing new challenges. The emphasis of the buyers is gradually shifting to the new wave of eco-friendliness, biocompatibility, concept of nature sustainable process, renewable resources, etc. from general considerations relating to the product. The industry always sees the trade in coir yarn and coir floor coverings as the thrust area of coir, but the share of foreign trade in this segment is small. It is mostly the high value products that fetch better returns in the export market. The domestic demand for such products is rather low. This is a factor,

which stands in the way of development of high value products taking advantage of economies of scale.

- 1.1.11 A major handicap of Coir Industry in Kerala is the continued practice of traditional methods of production employing out-dated and labour intensive technology resulting in low productivity. Debates and discussions about the need for technological upgradation and modernisation did not make much headway although some progress has been achieved. Thanks to the Government policies and regulations in Kerala, to sustain traditional labour, mechanisation has not come up to the desired level. This has also led to the under-utilisation of husk potential in the State, shortage of yarn and stagnation of the industry. Notwithstanding the Government policies protecting the traditional labour, the sector is also not growing as per expectations, since the younger generation is not keen to work in the traditional way. The low degree of mechanisation achieved in the processing sector and the delay in the practical adoption of scientific development has resulted in production of lower quality, lower productivity and diversification. But the progress achieved by neighbouring states of Tamil Nadu and Karnataka seems to have made an impact on thinking of the Government in respect of the current policies. Another equally important factor for the need for modernisation of the industry is compulsions of the market. Unless the technology is modernised to produce improved and standardised products at reasonable cost and new products are developed, the future of the industry in Kerala does not look promising.
- 1.1.12 Various governmental and non-governmental agencies have already realised the above factors and steps have been initiated for gradual modernisation and upgradation of the technology in coir industry in Kerala.
- 1.1.13 In view of the social economic and development considerations, Coir Board the apex body functioning in the sector plans to bring in a quantum change with holistic approach to usher a new era in the coir sector. With this background they have entrusted **KITCO Ltd.**, a public sector consultancy organisation established by Industrial Development Bank of India (**IDBI**) and Kerala Government the task of preparing a Comprehensive Report on Coir Industry in the State of Kerala.



- 1.1.14 This report has been prepared as per the terms of reference evolved to conduct a study in the State of Kerala, covering the different sectors and agencies operating in the sector to bring out basic issues pertaining to Coir industry. The study report covering the entire State and all related segments.

CHAPTER II

OBJECTIVES, SCOPE AND METHODOLOGY

2.1 Background

2.1.1 Traditional industrial sectors have been languishing due to a variety of reasons. Technological obsolescence, lack of organised marketing and exploitation by middlemen involved in the supply chain are some of the contributing factors. While the Government and Government sponsored agencies have been taking a number of steps for the upliftment of the traditional industrial sectors the measures have yielded only in a limited manner. More attention needs to be given for the traditional industries for survival as well as growth to catch up with the pace of development in the non-traditional industrial sectors.

2.1.2 One of the important steps for planning a development strategy in the industrial sector is to understand the technology status and identify the scope for modernisation. The objective of this study is to identify problems and prospects of the industry including the socio-economic aspects of coir workers in the State encompassing the traditional and modern coir industry. This also includes study of the development and changes in the coir industry over the years along with the problems faced at various levels and analysis of the contributing factors.

2.1.3 Previous works on the industry done by various agencies including those carried out by the Coir Board, Coir Directorate have also been referred and used as guidelines for the study.

2.2. Objectives of the Study

The study has been conducted among the workers, opinion making manufacturers and related government bodies/departments. The broad objectives of the study are following:

- Assessing the availability and consumption of coconut husk in the industry
- To take a critical view of coir products manufactured in the state with reference to their variety and quality.
- Analysis of economic conditions and social status of workers in coir industry
- To judge the extent of mechanisation in coir industry
- To find out the quantum and movement of fibre, yarn and coir products from Kerala and to Kerala.
- Analysing the socio – economic aspects of coir industry in Kerala
- Assessing the opportunities for technological upgradation in coir industry and
- To estimate the credit flow to coir sector.

2.3 Challenges Ahead

2.3.1 With the opening up of markets for international trade, the industry is confronted with different kinds of needs and challenges. On the domestic front, the issues are those of

- Low husk utilisation
- Backwardness of technology
- Inadequate marketing structures to tap the potential of the domestic market
- Low productivity throughout the supply chain and
- Inadequate raw material utilisation.

2.3.2 In each coir producing state, depending upon the skills available and the level of mechanisation, the industry has evolved and developed differently. Hence the structures and process of commercialisation are different across the States and this has resulted in unequal competition. This is particularly disadvantageous to the State of Kerala. In the international market the demand patterns fluctuate with emergence of competition from cheap and good quality substitutes for coir such as synthetic products and other natural fibre products. Traditional market patterns are thus changing and suitable strategies are required to convert the situation to derive the advantage and to overcome the disadvantages by changing product characteristics. It has thus become important to educate producers and exporters to understand changing

customer needs and deal with the situation appropriately, both in domestic and international markets.

2.4 Scope of the Study

The scope of the study is to collect data and analyse the same in respect of the following and arrive at suitable conclusions and suggest ways and means to realize the full potential of the industry.

- Economic conditions and social analysis of workers in coir industry in the State of Kerala
- Mechanisation in coir industry
- Movement of fibre, yarn and coir products from and to Kerala by road
- Socio economic aspects of coir industry in Kerala
- Opportunities for technological implementation in coir industry
- Credit flow to coir sector
- Availability and consumption of coconut husks in coir industry
- Coir products of the State

2.5 Methodology

2.5.1 A pilot study was conducted for the collection of basic data to develop questionnaire to bring out relevant information for analysis. Information was sought from different sectors engaged in coir sector. A draft questionnaire was prepared and discussed with the Coir Board officials, manufacturers, exporters, government officials and other opinion makers to finalise the questionnaire. The milestones envisaged are given below:

- Finalisation of questionnaire,
- Collection of secondary data from published sources,
- Collection of primary data based on the questionnaire from opinion makers, coir, workers, officers in coir sector, promoters of Industries exporters, traders and technical experts,

- Collection of relevant data from the officials at the controlling and functional levels in the Industry and Concerned Governmental agencies,
- Computerisation of data and analysis,
- Preparation of the draft report,
- Finalisation of the report incorporating the comments, if any by various segments of industry and government and the Coir Board..

2.5.2 *Contact Points*

The number of points to be covered for data collection in each category in the study was as follows:

➤ Number of house holds	-	2500-3000
➤ Number of coir factories in the unorganised sector	-	25
➤ Number of factories in the co-operative sector	-	25
➤ Number of factories in the organised private sector	-	15
➤ Number of factories in the Government sector	-	5
➤ Husk dealers	-	5
➤ Coir project office	-	5
➤ Government officials	-	10
➤ Coir Association Representatives	-	4
➤ Coir exporters	-	10
➤ Others	-	7

2.5.3 The survey also covered officials from the Coconut Development Board, Directorate of Economics and Statistics (Government of Kerala), State Planning Board, Coirfed, Kerala State Coir Co-operation and Foam Mattings India Ltd.

2.5.4 For the purpose of the study all the large manufacturing units as well as representative samples of units from the sectors like spinning, weaving and defibering were included. Proposed personal contacts include different trade and manufacturers associations and eminent personalities in the coir industry in Kerala and also officials from publications relating to trade statistics and Government Policies for Coir Industry.

CHAPTER III

EVALUATION OF COIR INDUSTRY

3.1. History and Background

- 3.1.1 The famous traveller Marco Polo had mentioned the use of coir in shipbuilding in his writing which clearly indicates the long tradition of coir. It remains one of the major economic activities of the State providing employment to lakhs of people especially for women coming from the backward strata of the Society.
- 3.1.2 The first coir factory in the organised sector was set up in 1859-60 jointly by two Englishmen James Darragh and Smail in Alappuzha in the location today known as Darragh Smail Complex. Coconut husk is the principal input for making coir. Although India ranks only in the third position among the world countries for the production of coconuts, it is the first in the production of coir.
- 3.1.3 The coir industry remains as a traditional industry with a thrust on the skill of the workers. The major segments of the coir industry are spinning, weaving and marketing. In the early period of last century there was a boom in the coir sector after the introduction of factory culture but the post independence period witnessed several structural changes that had affected the performance of coir sector adversely. One of the fallout of this phenomenon was the entry of exporters and depots in the sector who actually funded the activities. This had also resulted in the exploitation of traditional workers causing strained labour relationship in the industry. However, the industry kept going due to the presence of small producers providing employment to the thousands of skilled craftsmen. Spinning and weaving remained largely as household activities and the downstream operations functioned in the organised sector. Of late, spinning and weaving has also come under the fold of factory working, to a great extent.

The coir industry was mainly concentrated in and around Alappuzha Town. During the post-independence period nearly a dozen of large scale units sprung up and were doing significant business. In the early seventies the units faced excessive trade union activities that gradually led to fragmentation of the industry. In this process the industrialists

became merely exporters, sourcing products from small entrepreneurs. These structural changes adversely affected the health of the industry as a whole leading to unremunerative prices at all stages. Intervention by the Government and regulating agencies could mitigate the problems to a limited extent only.

During the nineties, while the industry registered reasonable growth the availability of husk got reduced due to a combination of factors. This gradually led to a situation of shortage of fibre and the industry started depending on fibre brought from neighbouring states. Today nearly fifty percent of the requirement of fibre in Kerala is brought from Tamilnadu.

3.2 Development of the Coir Sector

3.2.1 *Global Scenario*

3.2.1.1 The current World production of coconuts is estimated to be 60 billion nuts. Production registered during the period 1995 to 2002 is given in Table No.3.1. The Table reveals periods of stagnancy as well as growth. The growth from 1995 to 1999 has been very marginal. Arithmetic average annual growth from 1999 to 2002 has been about 2.2 per cent per annum. Current estimate of 60 billion nuts suggests somewhat increased growth.

Table No. 3.1
World Production of Coconuts

(In million units)

Year	Quantity
1995	54,020
1996	51,784
1997	54,440
1998	53,509
1999	54,801
2000	56,499
2001	56,390
2002	58,463

3.2.1.2 The Asia-Pacific Coconut Community (APCC) countries currently account for about 84 percent of world coconut production. The contribution from other specified regions are respectively about 10 per cent (America), 3.7 per cent (Africa) and the remaining is from other countries. The region wise country wise data are presented in Table No.3.2. The contribution from India according to this data is nearly 22 per cent.

Table No.3.2

Region wise Production of Coconuts from 1998 to 2002

(Units 1000 Nuts)

Country	1998	1999	2000	2001	2002
A. APCC Countries	46,626,500	46,637,500	48,131,500	47,816,170	49,032,500
F.S. Micronesia	40,000	40,000	40,000	40,000	40,000
Fiji	136,500	136,500	136,500	135,500	135,500
India	12,717,000	12,536,000	12,252,000	12,597,000	12,822,000
Indonesia	13,891,000	14,973,000	15,119,000	15,160,000	15,982,000
Kiribati	106,000	106,000	96,000	96,000	96,000
Malaysia	600,000	580,000	572,000	563,470	477,000
Papua New Guinea	858,000	1,020,000	1,032,000	553,000	680,000
Philippines	12,806,000	11,589,000	12,995,000	13,208,000	13,683,000
Samoa	186,000	186,000	190,000	195,000	195,000
Solomon Islands	168,000	145,000	133,000	113,000	113,000
Sri Lanka	2,522,000	2,828,000	3,096,000	2,769,000	2,393,000
Thailand	1,135,000	1,108,000	1,098,000	1,117,000	1,134,000
Vanuatu	346,000	346,000	340,000	333,200	346,000
Vietnam	1,115,000	1,044,000	1,032,000	936,000	936,000
B. Other Countries	6,882,798	8,163,118	8,367,569	8,574,266	9,430,288
Asia	706,049	754,728	750,766	756,663	910,644
Bangladesh	111,650	111,250	111,250	111,250	111,250
Brunei	163	169	169	169	231

Cambodia	70,000	62,500	56,250	56,250	87,500
China	217,924	230,371	232,934	238,750	337,015
Maldives	16,250	18,944	18,670	18,750	28,235
Myanmar	287,500	328,206	328,206	328,206	343,750
Pakistan	2,400	3,125	3,125	3,125	2,500
Singapore	163	163	163	163	163
Pacific	312,500	341,729	341,106	341,106	371,606
Amer Samoa	5,875	5,875	5,875	5,875	5,875
Cocos Is	7,625	7,625	7,625	7,625	9,531
Cook Islands	6,250	6,250	6,250	6,250	6,250
Fr Polynesia	106,250	96,250	96,250	96,250	110,000
Guam	51,875	51,875	51,875	51,875	64,844
Nauru	2,000	2,000	2,000	2,000	2,000
New Caledonia	20,625	18,750	18,750	18,750	20,000
Niue	2,500	2,500	2,500	2,500	3,125
Palau	70,000	70,000	70,000	70,000	70,000
Tokelau	3,750	3,750	3,750	3,750	3,750
Tonga	30,625	72,104	72,106	72,106	72,106
Tuvalu	2,250	1,875	1,250	1,250	1,250
Wallis Etc	2,875	2,875	2,875	2,875	2,875
Africa	2,303,813	2,342,875	2,187,625	2,187,625	2,170,450
Benin	25,000	25,000	25,000	25,000	25,000
Cameroon	5,375	5,875	6,000	6,000	6,000
Cape Verde	6,250	7,500	7,500	7,500	7,500
Comoros	93,750	93,750	93,750	93,750	95,000
Eq Guinea	6,250	7,500	7,500	7,500	7,500
Ghana	387,875	381,250	393,750	393,750	393,750
Guin Bissau	55,000	56,875	56,875	56,875	56,875
Guinea	22,500	22,500	22,500	22,500	22,500
Ivory Coast	241,250	287,500	287,500	287,500	287,500
Kenya	90,000	81,250	78,750	78,750	78,750
Liberia	8,750	8,750	8,750	8,750	8,750
Madagascar	105,000	106,250	105,000	105,000	105,625
Mauritius	2,438	2,250	2,375	2,375	2,375

Mozambique	562,500	543,750	375,000	375,000	331,250
Nigeria	190,000	197,500	200,000	200,000	201,250
Reunion	2,375	625	625	625	700
Sao Tome Prn	33,750	35,000	36,250	36,250	33,250
Senegal	5,875	5,875	5,875	5,875	5,875
Seychelles	4,000	4,250	4,000	4,000	4,000
Sierra Leone	3,375	3,375	3,125	3,125	3,250
Somalia	10,000	11,250	12,500	12,500	13,750
Tanzania	425,000	437,500	437,500	437,500	462,500
Togo	17,500	17,500	17,500	17,500	17,500
America	3,560,436	4,723,786	5,088,071	5,288,873	5,977,588
Barbados	1,875	1,875	1,875	1,875	2,063
Belize	4,000	4,000	4,000	4,000	1,250
Brazil	815,266	2,153,538	2,350,406	2,498,988	3,369,000
Colombia	89,124	133,258	126,549	114,139	119,235
Costa Rica	39,750	20,000	20,000	20,000	21,875
Cuba	32,500	32,500	32,500	32,500	32,500
Dominica	13,750	14,375	14,375	14,375	14,375
Dominican Rp	200,299	230,553	413,679	413,679	413,679
Ecuador	28,251	27,600	27,548	36,425	30,000
EI Salvador	85,228	107,955	112,500	112,500	106,250
Grenada	8,500	8,500	8,500	8,500	8,500
Guadeloupe	335	335	335	335	335
Guatemala	20,000	20,000	20,000	19,750	50,000
Guyana	70,561	70,000	70,000	70,000	56,250
Haiti	37,500	37,500	33,750	30,000	31,250
Honduras	25,404	25,663	25,924	26,188	26,438
Jamaica	143,750	143,750	143,750	143,750	212,500
Martinique	1,421	1,421	1,438	1,438	1,438
Mexico	1,628,125	1,375,000	1,391,250	1,453,750	1,198,750
Nicaragua	5,625	5,625	6,250	6,250	6,250
Panama	21,250	21,250	21,250	22,213	22,500
Peru	28,645	32,315	34,099	30,000	28,276
Puerto Rico	7,059	3,750	4,000	4,000	4,000

Saint Lucia	15,000	21,875	15,000	15,000	17,500
St Kitts Nev	2,125	1,250	1,250	1,250	1,250
St Vincent	29,500	29,500	29,625	29,625	29,625
Suriname	11,750	11,125	10,625	10,750	10,000
Trinidad Tob	27,500	28,750	28,750	28,750	30,000
Venezuela	166,344	160,525	138,845	138,845	132,500
TOTAL	53,509,298	54,800,618	56,499,069	56,390,436	58,462,788

Note: Data refer to total production of coconut, whether consumed fresh, processed into copra or desiccated coconut.

Estimate for non-APCC Countries was calculated by converting the nut weight into whole nuts given in the FAO Production Yearbooks, by using a conversion factor of one ton of husked nuts = 1250 whole nuts.

Sources: Compiled from information provided by APCC member countries and FAO Production Yearbooks

3.2.1.3 The coir industry remains localised and tends to be so, in coconut growing areas. However, not all countries, which produce coconuts, have developed coir industry. The major producing countries of coir are India and Sri Lanka. Logically so the growth of coir industry has been closely related to the trends in coconut production in these countries.

3.2.1.4 India is the largest producer of coir in the world. Over 70 per cent of coir produced in India originates from Kerala state and the major share of the remaining originates from Tamil Nadu and Karnataka state. India holds virtual monopoly for retted fibre, which is preferred for many products rated high in the market. The production statistics of coir industry in India is furnished in Table No.3.3.

Table No.3.3
Production of Coir

Quantity in Tonnes

Item	1991-1992	1992-1993	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002
Coir Fibre											
White	1,27,000	1,27,000	1,27,000	1,27,000	1,27,700	1,27,700	1,27,000	1,24,000	1,20,000	1,20,000	1,21,800
Brown	92,600	1,01,900	1,12,100	1,23,300	1,35,600	1,49,000	1,69,000	2,10,000	2,36,000	2,44,000	2,47,600
Coir Yarn	1,34,500	1,43,900	88,900	1,64,600	1,76,200	1,88,500	2,01,000	2,11,000	2,22,300	2,33,400	2,36,900
Coir Products	24,700	25,900	27,200	40,300	44,000	48,000	51,500	58,500	64,900	71,500	72,575
Coir Rope	34,300	35,200	36,400	37,500	38,600	39,800	39,900	48,000	48,900	51,300	52,700
Curled Coir	14,700	16,200	7,000	21,200	22,000	24,000	26,000	28,600	29,800	31,000	31,800
Rubberised Coir	12,200	13,400	14,700	31,500	33,000	35,000	37,000	43,000	46,300	51,000	51,800



3.2.1.5 Notwithstanding the fact that coir is an eco-friendly, bio degradable, renewable natural material, this shares only 5 per cent of the market with 95 per cent held by synthetics. Since the world over there is a concern for preserving the environment and coir being versatile product that can be put to many other applications to substitute synthetics, wood and ply; the demand for coir and coir products is bound to increase especially in the developed countries.

3.3 Coir Board and its Schemes

3.3.1 The Coir Board is an autonomous statutory body established by the Government of India under the Coir Industry Act, 1953 (45 of 1953) for the overall development of the Coir Industry. The Board consists of a Chairman and 30 members representing interests of all those associated with the industry in one way or other. The cross section includes coconut growers, producers of coir yarn, manufacturers of coir products, dealers in coir, coir yarn, coir products etc., besides two members of the Lok Sabha, one member of the Rajya Sabha and representatives of Governments of principal coconut growing states. The Coir Board was last re-constituted in September 1998.

3.3.2 The Headquarters of the Board are located at Kochi. There are three regional offices of the Board one each at Bangalore, Visakapatnam and Pollachi for promoting the development of coir industry, primarily in the brown fibre sector. The Central Coir Research Institute (CCRI) of Kalavoor, Alappuzha District, Kerala and the Central Institute of Coir Technology (CICT), Bangalore both coming under the overall framework of the Board, are engaged in research and development activities of the coir industry. The Board has established 33 show rooms and sales depots in important cities in the country for promotion sale and consumption of coir and coir products in the domestic markets. Hindustan Coir, a pilot-manufacturing unit of the Board located at Alappuzha, Kerala, is manufacturing coir matting on power looms.



- 3.3.3 As part of its Golden Jubilee celebrations in 2004 the Coir Board brought up a vision document for the development of the coir sector aimed at raising the exports of coir and coir products to Rs.1, 000 crores by 2008-09. The comprehensive report named as Millennium Development Mission Document (MDMD), gives a blue print of action plan for growth in the coir sector. The MDMD had identified major growth potential areas to strengthen the coir sector, such as to provide a quantum jump in the fibre utilisation from the present level of 37 per cent to 50 – 60 per cent during the next five years.
- 3.3.4 The focus in MDMD is to enhance the domestic and international market performance by three times and increase export performance by 25 per cent each year during the plan period. The major thrust areas include development of de-centralised husk collection centres and implementation of an integrated development strategy giving emphasis on expanding and strengthening small units. The small units include fibre extraction, pith processing (including production of pith blocks and composting units), yarn spinning, coir mattress, coir composites and flood blankets. The Document targets growth in employment in the sector to be doubled from the present 5 lakhs to 10 lakhs in the next five years, besides value addition through products enhanced to over Rs.25, 000 crores in the next five years. It had also recommended to consider coir sector development as a “Coir Mission Development Programme” by the Planning Commission on the lines of Bamboo Mission and Jute Mission with increased central financial support. In nutshell the Board will play in the future, a role of facilitator than a regulating agency.

3.4 Cooperativisation Scheme

- 3.4.1 The Government of India has evolved a scheme in 1982 for assisting the coir industry through formation of viable coir co-operatives and revitalisation of the potentially viable dormant societies and taking up such other measures as to bring up the coir industry on a sound footing. The scheme covers coir producing States and Union Territories. Central assistance under the scheme covers 50 per cent of the expenditure



for the project and the balance 50 per cent is expected to be met by the beneficiary State Government/Union Territory.

3.4.2 The proposals included in the scheme include inter-alia:

- (i) Making available, share capital assistance to coir societies in the form of loan
- (ii) Grant of Managerial subsidy
- (iii) Assistance for procuring equipment
- (iv) Providing Marketing assistance to apex societies for opening sales outlets, and
- (v) Undertaking Integrated Coir Development Project in Kerala, Tamilnadu and Karnataka.

Now the Government is taking initiatives to update the scheme in view of the changed business needs.

3.5 The Kerala Coir Worker's Welfare Fund Scheme

3.5.1 This scheme introduced in January, 1989, under the 'Kerala Coir Workers' Welfare Fund Act 1987. The objective is establish and operate a Fund for the welfare of the coir workers and self employed persons in the coir industry in Kerala. The scheme also envisages payment of pension to coir workers who have completed 60 years at the time of commencement of the Act. Besides contribution from the Government of India the fund envisaged contributions from employers, producers of coir and coir products, dealers and the beneficiaries namely coir workers and self employed persons. Under this scheme educational scholarships for post- metric education subject to a ceiling of Rs.500/- per annum per student and Rs.1,500/- for professional courses. The assistance is to be given in the form of grant. Other assistances include marriage assistance, funeral assistance, etc.

3.5.2 The Coir Industry supports around 3.60 lakhs people in Kerala for their livelihood. In spite of the fact that this industry earns a sizeable foreign exchange, enough attention has not been paid to the welfare of the workers in this sector. Unemployment, under employment, unhygienic working and living conditions are the maladies of the coir industry. Basic amenities of life are not available to all and the people are unable to



find their own resources to set up such facilities. It has been reported that the coir villages often do not get an equitable share of the funds that are allocated by the Government among different sectors. However, the Coir Board has been providing within the means of the Board, relief to the workers through the Model Coir Village Scheme. Various welfare measures available for coir workers are given Chapter-V.

3.6 Research and Development

- 3.6.1 The Central Coir Research Institute (CCRI) at Alappuzha has been doing research on products using a mix of coir and other fibres such as sisal. Coco lawn or readymade lawn is one innovative products developed by CCRI. Manufacture of composite products for industrial use is one of the means to increase the demand for coir products. For instance, conveyor belts or similar products for automobile industry would enjoy a large market. Recently, an exporter devised ornaments using softened coir and these were exported to Italy. This shows that developments can be even unconventional. Currently, the value-added products occupy only a limited portion of the total exports.
- 3.6.2 The State Government has mooted the idea of a National Coir Research and Management Institute along the lines of the other National institutes. The announcement was made in the last State Budget. Once the institute takes shape, it could be the nucleus of coir development.
- 3.6.3 The National Research Development Corporation has conferred an award to Central Coir Research Institute's scientific team for development of improved handloom called Anugraha constructed out of mild steel for weaving coir geotextiles. The new handloom can be used for weaving coir geotextiles with much more ease. The new loom costs only Rs.5,000 as against Rs.30,000 for traditional handlooms.. One woman worker can conveniently operate the loom in place of two male workers on the traditional handloom. It will occupy a space of 2 sq.m as against 6 sq.m occupied by traditional handloom. It will be able to produce 80 sq.m of coir geotextiles per



shift of eight hours as against a production of 60 sq.m per shift by two male workers in the traditional handloom.

3.6.4 At the Central Coir Research Institute (CCRI), Kalavoor, Alappuzha in Kerala, research activities are going on to reduce the period of retting. 'Coirret', a bacterial cocktail has been developed at the CCRI for retting the coconut husks. Coirret reduces retting period of coconut husks to 3 months from the traditional period 9-12 months.

It has the following advantages:-

- a) maximum exploitation of husk potential
- b) reduction in cost of production
- c) elimination of pollution in back waters

3.6.5 Accumulation of coir pith has become a major environmental problem for coir industry. About two tonnes of coir pith is generated while extracting one tonne of Coir fibre. With a view to ensuring economic utilisation of coir pith, the CCRI in collaboration with the Tamil Nadu Agricultural University, Coimbatore, developed a technology for converting coir pith into organic manure. The process involves degradation of lignin content present in coir pith by using suitable fungus. This manure is sold in the name of 'Pith Plus'. The Board has formulated a scheme for modernisation of coir industry and to make it pollution free. Under the scheme, it is proposed to demonstrate the composting technology in different locations. The Research Institutes of the Coir Board have been constantly pursuing efforts for developing substitutes for wood from Coir and succeeded in developing a technology for production of "Coir Ply". Now the efforts are being made to make it commercially viable.

3.6.6 Coir producers in weaving sector using three types of looms – handlooms, semi-automatic looms and power looms. Major shares of total costs of handloom products comprises of labour cost, which is nearly 60 per cent .. In the case of power loom products wages comes around 30 per cent only. In the semi-automatic looms the labour cost is comparably low



3.7 Coir Manufacturing Units

3.7.1 The manufacturing units in the coir industry can be categorised as follows:

- (i) Small manufacturing units
- ii) Large manufacturing/ marketing units in the private sector
- iii) Large manufacturing/ marketing units in the Government/ Public sector

3.7.2 *Small Manufacturing Units*

3.7.2.1 These are basically the household units where the entire manufacturing process is confined within the household. These units are in the unorganised sector. The work force in these units is composed of the family members and with or without some hired labour. These units are characterised by a very low scale of production in terms of capital invested, number of looms, numbers of workers employed and a predominance of family labour. Majority of these small scale units sell their products to private exporting units.

3.7.2.2 The major problem confronting this segment is scarcity of yarn due to the fibre shortage. If the industry is to survive in Kerala, fibre availability has to be increased. To increase the fibre availability within the State of Kerala a mechanism of husk collection should be introduced. At present the demand for Vycome yarn is higher compared to Anjengo yarn although the latter is the special yarn of Kerala

3.7.3 *Large Manufacturing/Marketing Units in the Private Sector*

3.7.3.1 Eventhough the large manufacturers have inhouse production system ,they mainly outsource the products from small scale manufacturing units.



3.7.4 Government Sponsored Coir Units

- 3.7.4.1 There are two public sector enterprises in the coir industry in Kerala namely, Foam Mattings (India) Ltd. (FMIL) and the Kerala State Coir Corporation Limited (KSCC). The Coir Corporation was established with the aim of collecting coir products from small scale producers at fair prices and marketing it in both domestic and export markets. The objectives also included stabilization of prices in the Coir Sector both in the domestic and in the global market. A unit of Coir Corporation is also functioning in Kozhikode, for processing curled rope, for which brown fibre is imported from Lakshadweep.
- 3.7.4.2 Foam Mattings was working on loss from 1980-1992. From 1992- 93 to 1999- 2000 the company made profits. Again between 2000-2001 and from 2001- 2002 there were losses although the losses were less in 2002-2003. The major problems of the company leading to poor financial performance are reported as management related aspects, unfavourable industrial relations, lack of co-operation among staff, overstaffing, political interferences, etc.
- 3.7.4.3 Major problems attributed for Coir Corporation loss is due to high labour cost and problems due to existing purchase price system.
- 3.7.4.4 The main products manufactured/sold by the public sector enterprises are coir mats, mattings, jute mattings, sisal mattings, etc. Foam Mattings Ltd., purchase products from Small Scale units and Primary Co-operatives in semi finished form and carried out the finishing operations. Earlier both the companies used to produce coir products of their own. Now they de-centralised, procurement mostly because of changes in the demand patterns.

3.8 Co-operative Sector

3.8.1 Kerala State Coir Co-operative Marketing Federation (Coirfed) is the apex body of Co-operative units working in the coir sector. There are different categories of Coir Co-operative Societies in Kerala. They are:

1. Primary Coir Co-operative Societies
2. Manufacturing Societies
3. Small scale Producers Co-operative Societies
4. Husk Procurement and Distribution Societies
5. Fibre Societies (Defibring Mill Societies)
6. Co-operative Coir Marketing Federation

The details of Coir Co-operative Societies are given in Table No.3.4.

Table No.3.4
Coir Co-operative Societies in Kerala

Sl.No.	Type of Society	No. of Societies as on 31.3.2002	No. of Societies as on 31.3.2003
1.	Primary Coir Co-operative Societies		
	a) Working	424	395
	b) New Societies which have not started working	5	8
	c) Dormant societies	104	153
	Total	533	556
2.	Manufacturing Societies		
	a) Working (Started production)	53	82
	b) New Societies which have not started working	4	18
	c) Dormant societies	13	18
	Total	70	118

3.	Small Scale Producers Co-operative Societies		
	a) Working (Started production)	12	16
	b) New Societies which have not started working	5	6
	c) Dormant societies	0	0
	Total	17	22
4.	Husk Procurement and Distribution Societies		
	a) Working	1	0
	b) New Societies which have not started working	1	1
	c) Dormant societies	0	1
	Total	2	2
5.	Fibre Societies (Defibering Mill Societies)		
	a) Working (Started production)	29	31
	b) New Societies which have not started working	39	32
	c) Dormant societies	6	14
	Total	74	77
6.	Co-operative Coir Marketing Federation.1	1	1
7.	Total No. of coir Co-operative societies:		
	a) Working	519	524
	b) New Societies which have not started production	54	65
	c) Dormant societies	123	186
	d) Societies under liquidation	158	160
	Total	855	936

Source: Economic Review, Kerala State Planning Board



3.8.2 A number of units in the Co-operate Coir sector are not working satisfactorily.

Major problems faced by Co-operative Societies are

1. Product pricing is lower in relation to cost
2. Production is not commensurate with deployment of manpower
3. Unable to compete with products from other States like Tamilnadu, Andhra Pradesh, West Bengal
4. Inadequate availability of fibre

The district wise details of the Coir Societies are shown in the Table No. 3.5.

Table No.3.5
District-wise Details of Coir Co-op. Societies

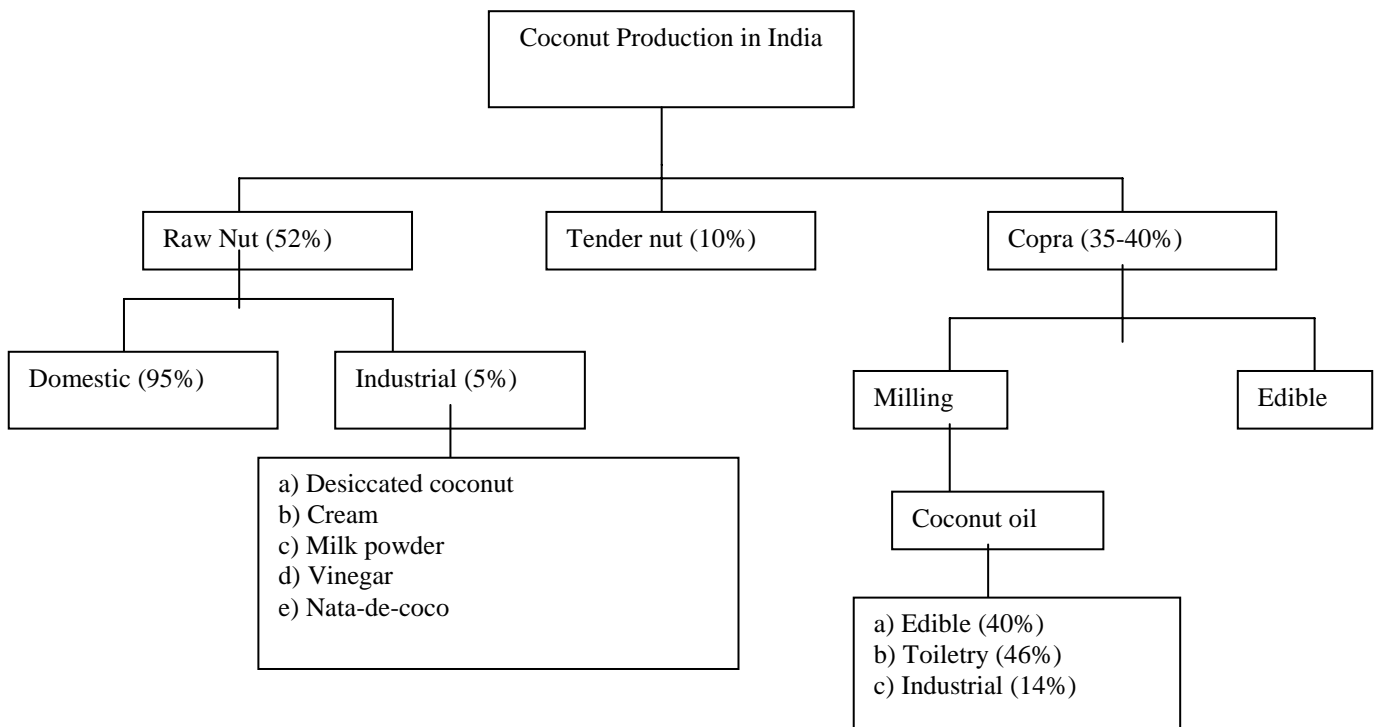
Sl. No.	District	Project Offices	No. of coir societies		
			Working & new	Dormant	Total
1.	Thiruvananthapuram	Chirayinki	44	21	65
2.	Kollam	Kollam	92	37	129
3.	Alappuzha	Alappuzha	134	16	150
4.	Alappuzha	Kayamkulam	53	28	81
5.	Kottayam	Vaikom	29	2	31
6.	Idukki	-	-	-	-
7.	Ernakulam	North Paravoor	14	13	27
8.	Thrissur	Thrissur	20	10	30
9.	Malappuram	Ponnani	27	2	29
10.	Palakkad	-	-	-	-
11.	Kozhikode	Kozhikode	71	18	89
12.	Kannur	Kannur	62	25	87
13.	Kasaragod	-	-	-	-
	TOTAL		546	172	718

Source : Economic Review, Kerala State Planning Board

3.8.3 Husk Collection

Husk is the principal input for the production of Coir and related products. Husk is available in almost all parts of Kerala. The consumption pattern of coconut is shown as a flow chart.

CONSUMPTION PATTERN OF COCONUT



3.8.3.1 The main problem related to shortage of fibre can be attributed to the inefficient and unscientific husk collection system prevailing. This is mainly due to the lack of initiative in organising the activities including logistic systems. Many of the husk are being under utilised and often used as fuel. As a result, there is an inadequate availability of fibre in the industry necessitating procurement from external sources especially from Tamil Nadu. The endemic mite disease popularly known, as Mandari has aggravated this situation. The price of husk varies from Rs.450-650 per thousand numbers in the southern districts mainly Thiruvananthapuram. It is only 250-500 in the northern districts especially in the Malabar Region. The major reasons for this variation are variations in quality and demand and supply position. On an average the yield from



1000 husk is 80-90 kg of fibre. But the yield has considerably reduced up to 20-25 per cent after spread of the fungal disease called Mandari.

3.8.3.2 The annual demand for the fibre in India on an average is 4,00,000 tonnes at the current level of production. Since efforts are being made to augment the coir production, the demand will increase considerably in the years to come. At present only 30 per cent of the husk available in the State is used for the fibre production. It is estimated that only 1,30,000 tonnes of fibre is available for coir production in the State. This has caused a shortfall of fibre in the State and at present the units are depending on the supply from outside the State. The main sources of fibre outside the State are Pollachi, Theni, Kambam, Thengapattanam and Nagercoil.

3.9 **The Credit Flow to the Coir Sector**

3.9.1 The major source of finance in the Co-operative sector was National Co-operative Development Corporation (NCDC) through their policies and programmes. NCDC was instrumental in extending finance for the establishment of factories by Coirfed developing units manufacturing various coir products throughout the State.

3.9.2 The State Government Establishments are operating through Government funding and finance from the State and Central Government, State Level Financial Institutes and Commercial Banks. The private firms are operating through finance from the Commercial Banks. The recent development in the coir sector is the formation of Self-Help Groups (SHGs) and Cluster Development. Self-Help Groups are mainly funded by co-operative banks where as cluster development scheme is developed and assisted by State Bank of India. The credit facility extended in the coir sector are term loan, working capital and revival and rehabilitation packages. In addition to this, the commercial banks are giving export credits to boost exports. The financial pattern of the commercial banks are in line with the advance programmes to other industries with interest rates fluctuating in the market as directed by Reserve Bank of India. NCDC schemes are available for modernisation of ratt, of which 50 per cent of the amount will be by way of grant and the balance portion as a loan bearing interest. The primary



co-operative societies are eligible for assistance up to Rs.18 lakhs. For rehabilitating the ailing units a rehabilitation package has been introduced. Under this primary co-operative societies are eligible for assistance up to Rs.5 lakhs and Matts and Matting Societies upto Rs.10 lakhs. This is intended for meeting their working capital requirements of the amount sanctioned, out of which 50 per cent will be treated as a grant and balance as loan with interest. The loan is repayable within a period of 5 years. In addition to these, Government of Kerala has also introduced a subsidy scheme on the investment in the coir sector. It is 15 per cent on investment subsequent to a maximum of Rs.2.50 lakhs.

3.9.3 *Credit Provided*

The total financial assistance to the co-operative sector from 1962-63 to 2002-03 through NCDC is Rs.50.08 crores. The Government support to Coir in the year 2002-03 was Rs.2.76 crores of which Rs.1.42 crores was by way of grant for 109 coir projects. The financial assistance to Coir sector in Kerala forms a partly as priority sector lending and finance to large scale units for export and asset creation. The detailed figures are not readily available.

3.10 **Marketing**

3.10.1 Marketing of coir products includes marketing coir fibre, yarn and finished products both in the domestic as well as in the export markets. India is one among the leading exporters of coir in the world. The domestic market is also large. While both public sector and private sector are engaged in export marketing, market development activities within the country are performed by agencies mostly in the public sector.

3.10.2 The trend in the overall volume of sale of coir and coir products significantly changed from the sixties when more than 50 per cent of the production used to be exported. Presently the domestic consumption has increased significantly to absorb about 85 percent of the total production. While the export volume has been increasing; the domestic market has become much more prominent.

- 3.10.3 The export trade is dominated by private merchants and manufacturers who control about 90 per cent of the export trade. A few Government companies and some large co-operatives account for the remaining 10 per cent. The exports of both yarn and products are mostly to Western Europe and USA with small quantities going to Japan and West Asia. The Coir Board has a system to regulate and control the export trade such as registration, minimum export price, etc. to avoid unhealthy competition and exploitation by foreign businessmen.
- 3.10.4 The export of coir from the country from 1998-99 to 2003-04 is given in Table No.3.6. We can see that the quantity as well as the value has been showing an upward trend. While the exports grew at an arithmetical average growth of little over 3 per cent per annum from 1998-99 to 2001-02, the growth has been impressive at 10 per cent from 71,335 tonnes in 2001-02 to 84,183 tonnes in 2003-04. As can be seen from Table No. 3.6 below the export of value added products are on the increase. The fibre component among the exported products is also decreasing indicating emphasis on value added products. There is good scope for export of coir in the coming years.

Table No.3.6
Export of Coir Products from India

Year	Quantity (Tonnes)	Value (Rs.lakhs)
1998-1999	55490	29,219
1999-2000	61030	30,305
2000-2001	67493	31,366
2001-2002	71335	32,058
2002-2003	84183	35,270
2003-2004	98798	40,000

- 3.10.5 The internal market has also been expanding steadily and the potential for growth requires to be fully exploited. Promotional agencies in the public and Government sector such as Coir Board, Coirfed, KSCC (Kerala State Coir Corporation) have been setting up show rooms and launching publicity campaigns to promote the use as well



as to facilitate sale of coir and coir products. Up-country market requires to be developed to sell the anticipated increase in production during the decade.

3.11 Classification of Coir Yarn

- 3.11.1 The coir industry recognises quality of yarn based on the characteristics of the fibre associated with the place of origin of the fibre besides other physical characteristics in spinning. The characteristics of the fibre differs based on natural factors and practices followed in different geographical areas. The varying characteristics are colour, runnage, twist, pith, strand, etc. brought about by natural variations and variations in the methods and conditions of retting, and spinning, seasonal conditions, etc.
- 3.11.2 Some of the yarns are wheel-spun while others are hand-spun. Hand-spun yarn is twisted rather loosely as compared with those spun by wheel. Most of the yarns are prepared from retted husks, while some coarse and inferior types are made from husks without retting that is known as unsoaked yarns.
- 3.11.3 The superior varieties of yarn are further sub-divided into several grades according to fineness and evenness of twist. For example, Anjengo yarn is classified as Anjengo superior, ordinary and special Anjengo yarn which represents the finest among this variety. Each grade is further sub-divided into two or three grades distinguished as “A”, “B”, “C”, or No.1, No.2, etc., according to colour. Bright golden colour yarns are considered the best, while the lower grades are comparatively dull and dark in colour. The cheaper types of yarn are classified into several grades generally distinguished by numbers (1), (2), (3), (4), etc., according to colour, evenness of twist and extent of associated pith. Another factor which is taken into consideration in classifying yarns, mainly by the manufacturers of mats and mattings is scorage which represents the number scores of yarn required for a 36” (91.44 cms) matting. Thus if 240 yarns of a particular type are required for a 36” wide matting, the yarn would be graded as 12 score yarn. Higher the scorage, finer the yarn.

3.12 Important Varieties of Coir Yarn

3.12.1 Classification based on Place or Origin

- ◆ Anjengo yarn:
- ◆ Mangadan yarn (Anjengo 'M')
- ◆ Ashtamudy yarn
- ◆ Alapat yarn
- ◆ Aratory yarn
- ◆ Vycome yarn
- ◆ Parur yarn
- ◆ Quilandy yarn
- ◆ Beypore yarn

3.12.2 Classification based on Other Characteristics

- ◆ Fine unsoaked yarn
- ◆ Muppiri yarn
- ◆ Rope yarn
- ◆ Beach yarn

3.12.2.1 The characteristics of yarns are given in Table No.3.7.

Table – No.3.7
Visual Characteristics of Different Varieties of Yarn

Sl. No.	Variety of yarn	Runnage (m/kg)		Scorage		Twists per 30 cm.	
		Minimum	Maximum	Minimum	Maximum	Minimum	Maximum
1.	Anjengo	170	454	11/12	19/20	30	39
2.	Mangadan	140	195	11/12	13/14	32	36
3.	Ashtamudy	80	120	8/9	9/10	17	20
4.	Alapat	150	285	9/10	14/15	15	20
5.	Aratory	210	415	12/13	18/19	27	34

6.	Beach	150	260	7/8	10/11	13	19
7.	Vycome	270	570	12/13	16/17	17	23
8.	Parur	110	140	8/9	10/11	21	27
9.	Quilandy	100	160	7/8	9/9	13	16
10.	Beypore	90	115	6/7	7/8	11	13
11.	Fine unsoaked	210	285	10/11	12/13	17	22

3.13 Types of Coir Products

3.13.1 Coir products can be broadly classified into the following varieties.

- ◆ Mats
- ◆ Matting
- ◆ Matting rugs
- ◆ Carpets
- ◆ Rubberised coir
- ◆ Others

3.13.2 *Coir Mats*

A number of varieties are manufactured for use in the coir mats. The most popular variety of coir mats are :

- ◆ Rod mats (Brush mats)
- ◆ Fibre mat
- ◆ Creel mat
- ◆ Bit mat
- ◆ Speciality mats- sinnet mats, corridor mats, rope mats.
- ◆ Cord, cable or ribbed mats

3.13.2.1 These are manufactured and supplied in various sizes, but the popular and stock sizes are given in Table No. 3.8.

Table - No.3.8
Sizes of Mats

Sl. No.	Size		Area	
	Inches	m.m	Sq.ft per dozen mats	Sq.m per dozen mats
1.	24" x 14"	600 x 350	28	2.52
2.	27" x 16"	700 x 400	36	3.36
3.	30" x 18"	750 x 450	45	4.05
4.	33" x 20"	850 x 500	55	5.10
5.	36" x 22"	900 x 550	66	5.94
6.	39" x 24"	1000 x 600	78	7.20
7.	42" x 26"	1050 x 650	91	8.19
8.	45" x 28"	1150 x 700	105	9.66
9.	48" x 30"	1200 x 750	120	10.80

3.13.3 *Classification of Mattings*

3.13.3.1 *Coir mattings*

Coir matting are good floor coverings and is commonly used in commercial buildings for wall to wall carpeting, gymkhana, corridors, stairs, paneling, etc. Coir mattings made on traditional handlooms reflect the skill of the craftsmen in their weaves and finish. In addition to natural colour, solid shaders, bleached and jasje mattings, a wide range of attractive woven and printged designs are produced. Semi-automatic and fully automatic looms (power looms) are also used in the production of mattings in a few units. Handlooms used are similar to textile (hand) looms.

3.13.3.2 Different varieties of matting based on weaving methods are the following.

- ◆ Two treadle plain weave
- ◆ Two treadle basket weave



- ◆ Three treadle weave
- ◆ Four treadle weave
- ◆ Ribbed mattings
- ◆ Multi-shaft mattings (power loom)

3.13.3.3 For complicated fancy patterns usually stenciling or printing is resorted to. For stenciled mattings, plain two shaft mattings are manufactured and the design printed on them by means of stencil plates. We have therefore the following grades of mattings.

- ◆ Three shaft plain and bordered
- ◆ Two shaft plain and fancy
- ◆ Four shaft fancy
- ◆ Two shaft tile (basket weave)
- ◆ Four shaft tile (plain weave)

3.13.4 *Geo Textiles*

3.13.4.1 Coir is already being used as a geo textile mostly for retaining earth on filled up areas, road embankments, slopes in landscaped areas etc.

3.13.4.2 Vinyl geo textiles are also used for improving settlement quality for the formation of roads paving etc. May be some more research is needed for using coir as an alternate material, especially for increasing its life span, improving tensile strength etc. Whether coir could be used as a composite material with other materials also should be thought of . If successfully developed this will find large-scale use for road under lays especially in soil with low bearing capacity.

Table No.3.9

Application Areas of Natural Geotextiles

Sl.No.	Application areas	Percentage (%)
1.	Reinforcement	4
2.	Silt fences	6
3.	Erosion control	7
4.	Linings	8
5.	Drainage	16
6.	Asphalt overlay	17
7.	Separation/Stabilization	42

3.13.4.3 Some of the important properties and characteristics are highlighted below:

- ◆ The high tensile strength of coir fibres protects steep surfaces from heavy flows and debris movement.
- ◆ Five to ten years longevity (under different soil, temperature, rainfall and climatic conditions), allows for full plant and soil establishment, natural invasion and land stabilisation Totally biodegradable, 100% natural coir fibre functions as a soil amendment
- ◆ Water absorbent fibres act as a mulch on the surface and as a wick in the soil mantle.
- ◆ Provides and excellent micro climate for plant establishment, natural invasion and balanced healthy growth.
- ◆ Re-vegetation measures encourage the restoration of terrestrial and aquatic riparian habitat
- ◆ Environmentally friendly, biodegradable and aesthetically pleasing
- ◆ Easy to install and follows the contour of the soil surface.

3.13.4.4 The advantages of geo-textiles are given in Table No. 3.10.

Table No. 3.10
Advantages of Natural Geotextiles

Features of Geotextiles	Benefits Derived
Shield soil against wind jet efflux and rain	Prevent soil loss and controls erosion
Protects seeds/plants against wind, rain & birds	Increases germination rate of seeds
Retains moisture by storage of water and shading	Promotes vigorous growth of vegetation
Fertilizes soil-increases humus content of soil as natural organic constituents degrade	Enhances soil fertility and permeability
Reinforces turf – against general wear and tear	Greater turf durability and stability of soil surface
Insulates soil & roots – against extremes of temperature	Provides optimum conditions for seeds and early growth of vegetation
Mulching-prevents moisture loss from soil	Moisture retention
Weed control – totally opaque	Environmental friendly and suppresses weed growth
Temperature moderation – the matrix/blankets moderates temperature changes	More roots survive to give stronger plant growth
Increased fertility – as the matrix degrades it adds to the humus in the soil	Improves long term condition for plant growth
The economics – can easily handled manually, in roll form, no special labour, very easy to install, takes the contour of the soil, provides for long term weed control, mulching, etc.	Reduces laying time, quantum of site labour utilized, cost spread over several financial years, eco friendly & biodegradable

3.14 Technological Development in the Coir Industry.

3.14.1 Coir industry by and large remained traditional till very recently irrespective of the sector whether the Public, Co-operative or Private. The concept of mechanisation



was introduced in 70's but due to political reasons it was a slow starter in the State of Kerala but of course the concept of mechanisation has been widely accepted now and earnest steps are being taken in that direction. The major technological changes are in the fields of spinning and weaving.

3.14.2 *Mechanised Ratt*

3.14.2.1 The mechanised ratt was introduced in the early 90's so as to improve productivity as well as to bring the spinning activity in the fold of factory. The objective of reducing dredgery was also a reason for this. A number of projects and institutions have set up in the State of Kerala at different locations. But due to certain inherent drawbacks the functioning of these machines, the schemes did not take-off well. The problem was that the machine made yarns were inferior to hand spun yarns. Hence, if provided an improved version which can produce acceptable yarn varieties is developed and introduced, this will enhance productivity in the segment.

3.14.3 *Weaving*

3.14.3.1 Weaving remained in the traditional sector but after introducing the concept of textile technology mechanised and automatic looms are being in a big way. By this not only it has been possible to improve productivity but also to introduce new varieties of products.

3.14.3.2 The role played by Central Coir Research Institute is significant in this direction.

3.15 **Other Products**

- ◆ Ropes
- ◆ Screens
- ◆ Acoustic ceiling
- ◆ Rubberised coir mattresses
- ◆ Acoustical back panels

3.16 Building Construction Materials from Coir

3.16.1 Central Building Research Institute has developed building materials using coconut fibre and cement to be used as pre-fabricated building components. The advantages are the panels of different forms can be made depending upon the requirements which are light in weight satisfying various requirements such as sound installation/transmission, fire resistance, etc. Coir cement panels are another product which can be used for partition works and it will be useful in the modern type of construction where high rising building are constructed first and partition is being done subsequently.

3.16.2 The properties of fibre reinforced cement panels are given in Table No.3.11 and fire behaviour in Table No.3.12.

Table – No.3.11
Properties of Coir Fibre Reinforced Cement Panels

PROPERTY	COIR-CEMENT PANEL	ISO : 8335-1987
Density, kg/m ³	1300 – 1400	1000 min
Moisture content, %	6 – 7	6 – 12
Water absorption, %	14 – 16	-
Swelling thickness, %	0.8 – 1.2	2 max
Bending strength, N/mm ²	9.0 – 11.0	9 min
Modulus of elasticity, N/mm ²	2500 – 2800	3000
Tensile strength, N/mm ²	3.2 – 3.5	-
Impact strength*, Weight - 2 kg Height - 100 cm	No indentation Or cracking	

* Tested as per IS:2380-1977

Table – No.3.12
Fire Behaviour of Coir Fibre Reinforced Cement Panel

Product	Tests			
	Ignitability	Fire propagation index		Surface spread of flame, class
	P	I	I	
Coir cement	P	2.94	4.98	1
Wood cement panel	P	<6.00	<12.0	1
Particle Board				
Sample I	P	14.21	36.52	3
Sample II	P	13.29	32.62	2
Fibre Board				
Sample I	P	33.10	56.82	4
Plywood				
Sample I	P	18.56	36.52	4
Sample II	P	7.47	25.42	3

P – Not easily ignitable
I – Initial propagation indices
I – Total fire propagation index

3.16.3 Coir cement blocks and coir cement piles are the other products which is increasingly used in the building construction.

3.17 Coir Ply

3.17.1 Coir Board, had developed a technology to produce coirply. With the help of United Nations Development Programme (UNDP) and World Bank has successfully commercialized this technology. This product has been test-marketed in the country and the response from the market shows that it has been well accepted as an alternative to plywood. For the last ten years Coirply has been accepted as an alternative to tropical timber products.



3.17.2 This is an innovative product that is set to replace solid products from timber and scarce forest resources in the market. Coirply is a board that uses renewable natural hard fibres such as coir and jute, impregnated with phenolic resin and limited pretreated plantation timber.

3.17.3 The Coirply Products have already been approved by the following Institutions and the products have been put into regular use.

- ◆ Bureau of Indian Standards (BIS)
- ◆ Indian Railways
- ◆ D.G.S & D
- ◆ C.P.W.D.,
- ◆ D.O.T. (Civil Wing)
- ◆ Road Transport Corporation (RTC)
- ◆ Products for General Market
- ◆ Coirply has been approved for Roofing (in lieu of Asbestos Sheets)
- ◆ Coirply has been used as Shelters for the Earthquake affected victims of Gujarath and has been proved as Earthquake proof shelters.

3.18 Support Price System

3.18.1 Wages paid to work persons in the coir sector in Kerala inequitably lower. There are many reasons for this. The prime reason is that the price realised for finished products does not justify payment of attractive or fair wages and this in turn works back throughout the supply chain. In fact the price realized by the exporters is perhaps not the maximum possible, as their strategy is to compete in the international scenario mainly through lower prices and entering into contracts with the segment of buyers who are more sensitive to price than quality. Low prices, in their turn have led to low wages and poor quality of products which ultimately affected the exports.

3.18.2 Generally the overseas buyers (Importers) wants price stability, timely delivery and assured quality. It was in the background of such unhealthy competition among the



exporters that the minimum Export price was introduced in 1966 for specified products and extended in a phased manner to most of the products in coir industry.

3.18.3 *Purchase Price*

3.18.3.1 The Coir Board 1976 introduced the Purchase Price Enforcement Scheme for the industry. The scheme included inter-alia the prices payable for raw materials, and considerations such as wages, dearness allowance, contributions to the coir workers welfare fund, annual fringe benefits etc.

3.18.3.2 The purchase price was revised on a number of occasions times since its introduction. It is generally accepted that the scheme as a whole could not be implemented effectively because of the complexities of the structure of the industry and practical difficulties of the authorities in enforcing the provisions without adverse impact on the industry itself. The exporters invariably were not paying purchase price list their competitiveness in the international market will result in loss of business. Even Co-operatives committed for abiding to regulations found it difficult to pay the prescribed purchase price. The Coirfed in fact had to hold a high level of stocks because they were not able to find buyers prepared to pay higher prices. The scheme cannot be operated effectively unless the price of the products are fixed at a level which the industry can bear.

3.18.3.3 Thanks to realization that the scheme is not bringing the desired results, the Ministry of Textiles, Government of India withdrew the Purchase Price Enforcement Scheme in April 2002,

3.18.4 *Fair Price System*

3.18.4.1 The current scenario for the coir industry in Kerala is extremely complex with many socio-economic and techno-economic issues confronting the industry. The sector is labour intensive, highly female labour oriented and is also predominantly household oriented. On the one hand, there are nearly 10000 – 15000 small scale manufacturing



house holds in Kerala involving about 5 lakhs work persons. On the other hand, the large exporters in the organised manufacturing sector undertaking production with sophisticated, imported machinery. Therefore the interests in different segments of the industry are not the same.

- 3.18.4.2 The exporters, both medium and large do not support the introduction of a support price in any form. The small scale manufacturers feel that there should be a bench mark price or a floor price in some form to protect their interests. Similarly, the trade unions feel the need for a support price or a bench mark price to protect wages.
- 3.18.4.3 Earlier the Purchase Price Enforcement Scheme was not working effectively, due to a combination of factors. One factor was the complexity of the structure of the industry and the other factor was unrealistic fixation of purchase price without taking into consideration the capability of the industry to pay. The interests of the small scale manufacturers and the work persons engaged in the sector can be taken care of only through an overall development strategy.

CHAPTER – IV

FIELD SURVEY

A. SOCIO ECONOMIC ASPECTS

A4.1 Preface

A4.1.1 The location of Coir Industry in Kerala is along the coast, being concentrated more in the Southern Districts. The industry has mostly developed in the private and co-operative sectors with Government assistance. Upto the production of yarn, the industry is widely dispersed, spread along the retting fields and adjoining areas. Since 1951, a number of co-operatives have come into existence to provide maximum benefits to the workers engaged in the industry. The role of private entrepreneurs has been quite considerable in every sector of the industry. There are husk dealers, retters and spinners, manufacturers of coir products and market leaders who have been operating on a large scale as well as exerting considerable influence on the development of the industry.

A4.1.2 For the purpose of this study, all the large sector units in the manufacturing sector concentrated in Alappuzha and all other districts as well as a number of Co-operative Societies and other smaller units spread all over the State were visited. The study also contains the various aspects related to coir sector with respect to Kerala such as

- Availability and consumption of Coconut husks in Coir Industry.
- Coir products of the State
- Economic conditions and social analysis of workers in Coir Industry
- Mechanisation in Coir Industry
- Movement of fiber, yarn and coir products from and to Kerala by road
- Socio economic aspects of Coir Industry in Kerala
- Opportunities for technological innovation in Coir Industry
- Credit flow to Coir Sector

- A4.1.3 During the visit, detailed discussions were held with the Promoters/Secretaries of the units concerned regarding problems they are facing, history of the unit, their perception about the feature of their industry and about the various schemes of the Government, Coir Board, Coirfed, Coir Corporation, etc. for the development of the industry.
- A4.1.4 Discussions were also held with number of households engaged in Coir field, husk dealers, coir project officers, Government officials, coir associates representatives, representatives of coir factories in the unorganised sector, Co-operative sector, organised private sector and in the Government sector, Coir exporters, etc. at different level.

A4.2 Method Adopted

- A4.2.1 There are about 3,000 units in Kerala engaged in the production of Coir and Coir products and out of which one third of the units are located in Alappuzha District. Most of these units are in cottage and co-operatives sector. There are about 150 exporting units mainly located in Alappuzha district. Due to militant trade union activities and other problems established units manufacturing coir products followed the decentralisation mode of production. Except established units in the manufacturing as well as some of the units in the co-operative sector operating on medium scale, overall working is the same. For the purpose of the study representative units from each segment of the industry and units situated in different part of the state were visited.

In the survey, units engaged in the production of yarn, ropes, mats and mattings, power looms and mechanical fibre extractions were visited to get an overall idea about the status of technology, problems facing industry as well problems faced by workers engaged in the industry.

- Discussions were held at different levels with representatives of workers, husk dealers, coir factory representatives, exporters, trade union leaders, Government officials, etc.

- Discussions were held with prominent personalities in the industry to get their views of the coir sector.
- The total number of contact points covered was about 2800 spread all over Kerala.

A4.3 Analysis of Data Collected

A4.3.1 Data collected from the units were analysed using computer to get details like type of the unit (organisation), number of years of operation, product, machinery used, turnover and labour employed, etc.

A4.4 Findings of the Survey among Coir Workers

A4.4.1 The survey covered ten districts in Kerala. The primary survey covered 2500 coir workers. More than three fourth of the respondents (78.6 per cent) were female workers.

A4.4.2 Break-up of District-wise Samples

A4.4.2.1 The district-wise sample break-up is presented in Table No.4.1 and Gender of respondent district-wise percentage in Table No.4.2

**Table No.4.1
District- wise Sample Breakup**

District	No. of Respondents	Percentage to Total
Thiruvananthapuram	273	10.9
Kollam	341	13.6
Alappuzha	1000	40.0
Kottayam	214	8.6
Ernakulam	35	1.4
Thrissur	96	3.8
Malapuram	53	2.1
Kozhikode	289	11.6
Kannur	86	3.4
Kasargode	113	4.5
Total	2500	100.0

Table No.4.2

District wise Gender Breakup

District	Male	Female	(%) Total
Thiruvananthapuram	5.1	94.9	100.0
Kollam	10.9	89.1	100.0
Alappuzha	32.0	68.0	100.0
Kottayam	21.5	78.5	100.0
Ernakulam	40.0	60.0	100.0
Thrissur	32.3	67.7	100.0
Malapuram	28.3	71.7	100.0
Kozhikode	11.4	88.6	100.0
Kannur	4.7	95.3	100.0
Kasargode	18.6	81.4	100.0
Total	21.4	78.6	100.0

A4.4.2 Age Distribution of Workers

A4.4.2.1 The age distribution of the workers is presented in Table No.4.3 and 4.4. Table No.4.3 reveals that nearly three fourth of the coir workers (72.4 per cent) are aged between 30 and 60 years. Less than one fifth of the workers are aged below 30. The proportion of the aged coir workers (above 60 years) is less than the proportion of the aged in the State's population. The average age of the coir worker is 43. The average age of male workers is marginally less than that of the female workers. The table also reveals that the proportion of younger generation (below 30 years) among the male workers is higher than that of female workers. The age-wise distribution of workers is shown in Figure No.4.1.

Table No.4.3
Age Distribution of Coir Workers

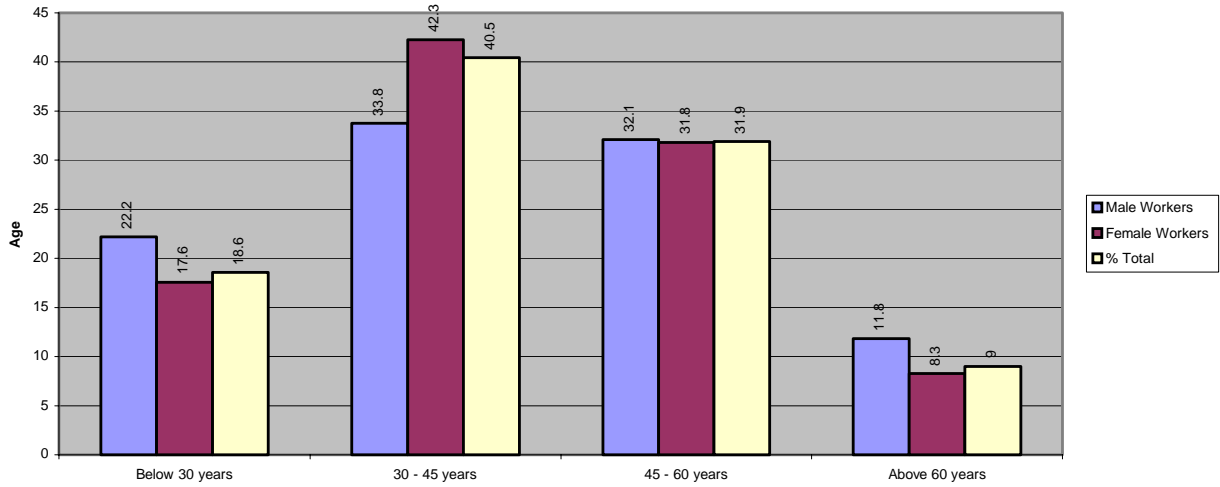
Age	Male Workers	Female Workers	% Total
Below 30 years	22.2	17.6	18.6
30 - 45 years	33.8	42.3	40.5
45 - 60 years	32.1	31.8	31.9
Above 60 years	11.8	8.3	9.0
Total	100.0	100.0	100.0
Average Age	43.5	42.8	43.0

Table No.4.4
Age Distribution of Coir Workers- District wise

District	Below 30 years	30 – 45 years	45 - 60 years	Above 60 years	% Total
Thiruvananthapuram	26.7	34.4	34.4	4.4	100.0
Kollam	15.2	38.4	34.0	12.3	100.0
Alappuzha	20.7	43.6	27.2	8.5	100.0
Kottayam	14.5	37.4	36.9	11.2	100.0
Ernakulam	5.7	20.0	54.3	20.0	100.0
Thrissur	6.3	55.2	37.5	1.0	100.0
Malapuram	0.0	45.3	41.5	13.2	100.0
Kozhikode	6.2	37.0	42.9	13.8	100.0
Kannur	30.2	47.7	20.9	1.2	100.0
Kasaragod	44.2	34.5	15.0	6.2	100.0
Total	18.6	40.5	31.9	9.0	100.0

A4.4.2.2 The proportion of younger generation (below 30 years) is the highest in Kasaragode district followed by Kannur and Thiruvananthapuram districts. It is the lowest in Malappuram district. Other districts in which the industry was not successful in attracting the young generation are Ernakulam, Kozhikode and Thrissur.

Figure No.4.1
Age Distribution of Coir Workers



A4.4.3 Educational Qualification

A4.4.3.1 Table No.4.5 and 4.6 present the educational qualification of the respondent workers. Table No.4.5 brings out that more than half of the coir workers did not reach the high school level. However, only 7.2 per cent of the workers are illiterate. Only 4 per cent have completed matriculation. It is also revealed from the table that the male workers are slightly better educated compared to female workers. The education level of workers is represented in Figure No.4.2.

Table No.4.5
Education Level of Coir Workers

Education	Percentage of Workers		
	Male	Female	Total
Illiterate	2.6	8.4	7.2
Some schooling but below 8th standard	52.5	59.3	57.8
High School but not matriculate	38.9	29.1	31.2
Matriculate	5.1	2.8	3.3
Graduate and above	0.9	0.4	.5
Total	100.0	100.0	100.0

Figure No.4.2
Education Level of Coir Workers

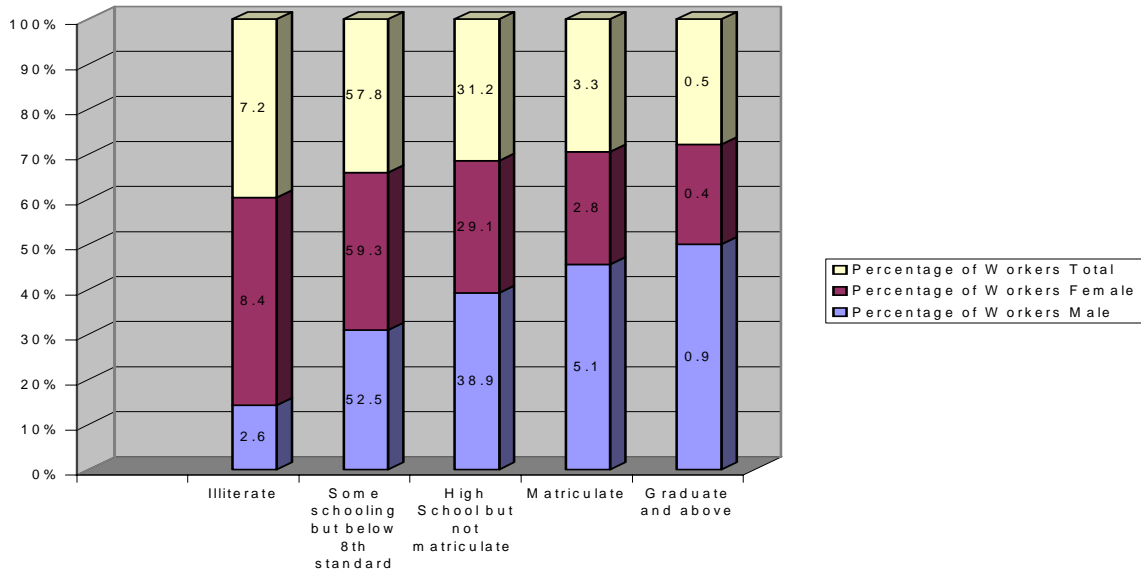


Table No.4 6
District wise Education of Coir Workers

District	Illiterate	Some schooling but below 8th standard	High School but not matriculate	Matriculate	Graduate and above	% Total
Thiruvananthapuram	12.1	69.6	17.9	.4	0.0	100.0
Kollam	7.9	70.4	19.4	2.1	.3	100.0
Alappuzha	2.5	52.1	39.8	4.8	.8	100.0
Kottayam	4.2	65.4	26.6	3.3	.5	100.0
Ernakulam	2.9	77.1	17.1	2.9	0.0	100.0
Thrissur	0.0	53.1	46.9	0.0	0.0	100.0
Malappuram	15.1	69.8	13.2	0.0	1.9	100.0
Kozhikode	20.4	59.2	19.4	1.0	0.0	100.0
Kannur	7.0	31.4	53.5	7.0	1.2	100.0
Kasargode	10.6	37.2	43.4	8.0	.9	100.0
Total	7.2	57.8	31.2	3.3	.5	100.0

A4.4.3.2 The proportion of workers who have completed matriculation is the highest in Kasargode followed by Kannur and Alapuzha districts.

A4.5 Community Distribution

A4.5.1 Table Nos.4.7 and 4.8 present the details of the respondent coir workers according to the community they belong to. Table No.4.7 reveals that a large majority of the coir workers belong to the “Other Backward Communities”. Coir Workers belonging to the Scheduled Castes formed just 10 per cent of the workers. There were only 15 ST workers in the sample.

Table No.4.7

Community-wise Distribution of Coir Workers

Community	Number of Respondents	Percentage to Total
Forward Communities	191	7.6
OBC/OEC	2025	81.0
Minority	29	1.2
SC	240	9.6
ST	15	.6
Total	2500	100.0

Table No.4.8

District wise Community of Coir Workers

District	Community					% Total
	Forward	OBC/OEC	Minority	SC	ST	
Thiruvananthapuram	3.3	69.6	0.0	27.1	0.0	100.0
Kollam	15.0	65.1	4.1	13.5	2.3	100.0
Alappuzha	8.2	87.7	0.7	3.3	0.1	100.0
Kottayam	5.1	91.1	0.0	3.7	0.0	100.0
Ernakulam	0.0	82.9	8.6	8.6	0.0	100.0
Thrissur	29.2	54.2	5.2	5.2	6.3	100.0
Malapuram	0.0	62.3	0.0	37.7	0.0	100.0
Kozhikode	3.1	86.9	0.0	10.0	0.0	100.0
Kannur	0.0	82.6	0.0	17.4	0.0	100.0
Kasargode	0.9	92.9	0.0	6.2	0.0	100.0
Total	7.6	81.0	1.2	9.6	0.6	100.0

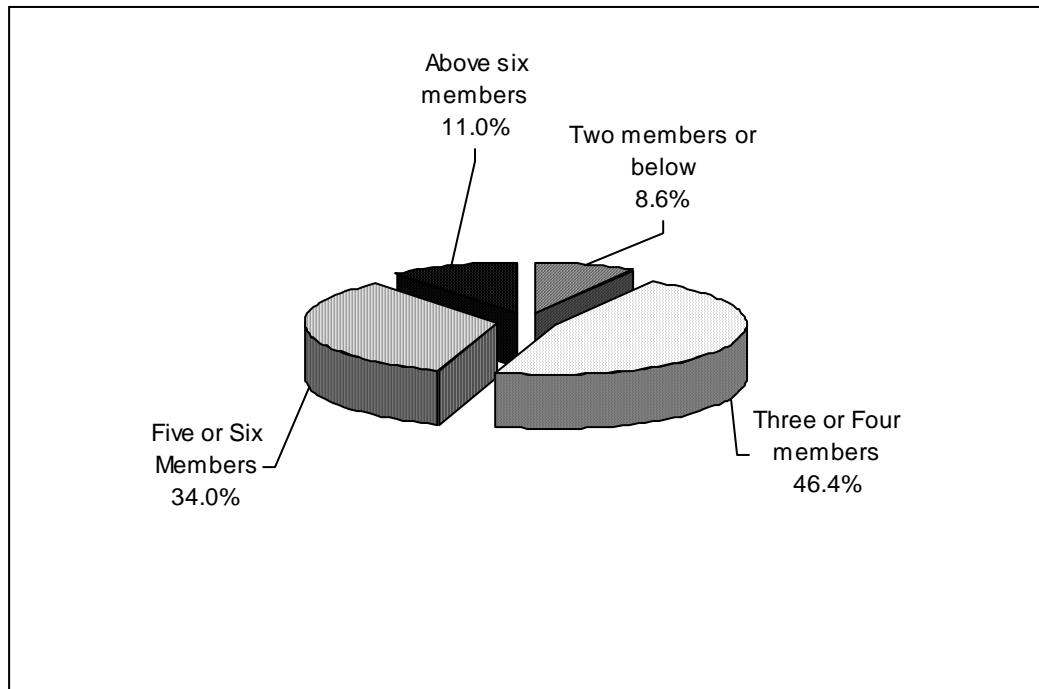
A4.5.2 District-wise analysis of the community distribution of the coir workers shows that the involvement of the Scheduled Caste community is the highest in Malappuram district. More than one third of the coir workers in this district belong to Scheduled Castes. Coir

workers belonging to Scheduled Tribes were found mostly in Thrissur and Kollam district. Just 0.1 per cent of the coir workers in Alapuzha also belong to ST community.

A4.6 Family Size

A4.6.1 The distribution of the size of the family is presented in Figure No. 4.3. The chart reveals that 55 per cent of the families have less than four members. Just 11 per cent have more than six members.

Figure No.4.3
Size of the Family of the Coir Workers



A4.7 Living Condition of Workers

A4.7.1 Just 2 per cent live in houses not owned by them as shown in Figure No. 4.4. The type of roofing of the houses of the workers is presented in Table No.5.9. Nearly three fourth of the respondents live in concrete or tiled house. Of the remaining, 11 per cent live in houses with sheet roofing. Only 10 per cent of the workers live in thatched houses.

Figure No. 4.4
Do you own a house or not?

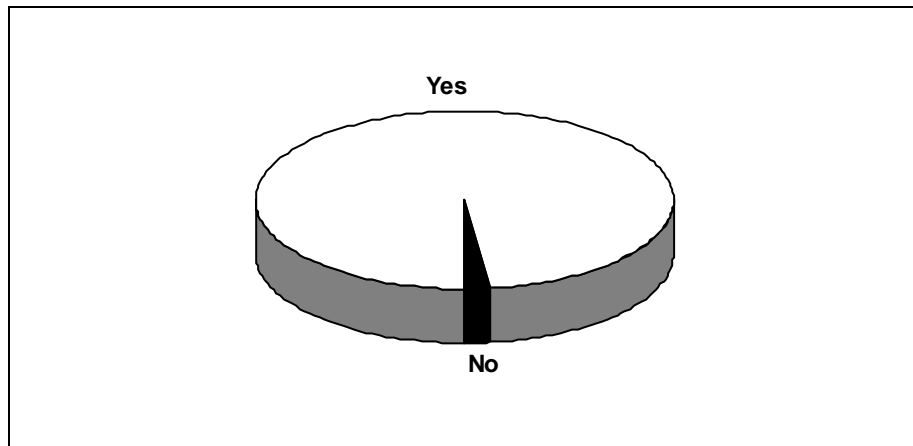


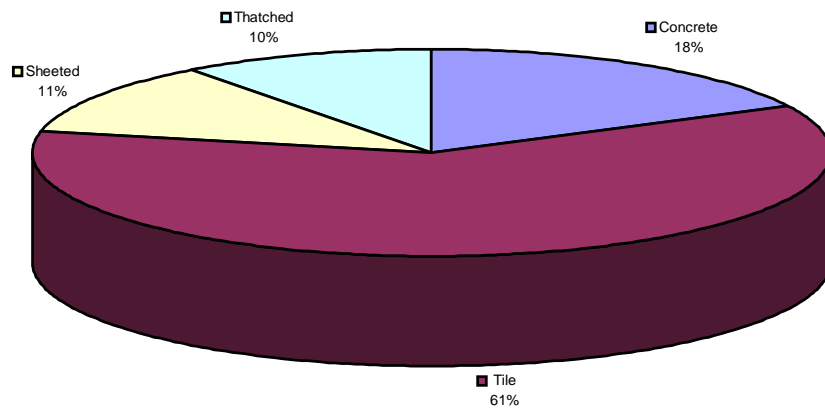
Table No.4.9

Type of Roofing of the Houses of Respondents who Live in Owned Houses

Type of Roofing	No	%
Concrete	429	17.5
Tile	1490	60.7
Sheeted	281	11.4
Thatched	256	10.4
Total	2456	100.0

The type of dwelling is represented in Figure No.4.5.

Chart No.4.5
Type of Roofing of the Houses of Respondents who Live in Owned Houses



A4.8 Family Income

A4.8.1 The distribution of the annual household income of the families of the respondents is presented in Table No.4.10 and 4.11.

Table No.4.10

Distribution of the Annual Household Income of the Respondents

Income Group	No. of Respondents	Percentage to Total
Below Rs. 10,000	694	27.8
Rs. 10,001- Rs. 20,000	1049	42.1
Rs. 20,001 - Rs.30,000	530	21.3
Rs. 30,001 - Rs. 50,000	182	7.3
Above Rs. 50,000	38	1.5
Total	2493	100.0

Base=2493

A4.8.2 The table brings out the deplorable financial position of the families of the coir workers. As much as 70 per cent of the coir worker families have an income below Rs. 20,000. Just 9 per cent have an income above of Rs. 30,000 per annum (i.e. above Rs. 2500 per month). The coir workers in Kollam and Kannur are relatively well off compared to their counterparts in other districts.

Table No.4.11

District wise - Distribution of the Annual Household Income of the Respondents

District	Below Rs. 10,000	Rs. 10,001- Rs. 20,000	Rs. 20,001- Rs.30,000	Rs. 30,001- Rs. 50,000	Above Rs. 50,000	Total
Thiruvananthapuram	38.1	57.9	2.6	1.1	.4	100.0
Kollam	6.2	24.9	41.3	22.3	5.3	100.0
Alappuzha	43.2	41.9	8.8	5.1	1.1	100.0
Kottayam	20.6	51.9	23.8	3.7	0.0	100.0
Ernakulam	26.5	11.8	61.8	0.0	0.0	100.0
Thrissur	2.1	79.2	18.8	0.0	0.0	100.0
Malapuram	43.4	18.9	34.0	3.8	0.0	100.0
Kozhikode	14.2	41.9	35.3	6.9	1.7	100.0
Kannur	12.8	33.7	38.4	14.0	1.2	100.0
Kasargode	8.8	34.5	46.0	8.8	1.8	100.0
Total	27.8	42.1	21.3	7.3	1.5	100.0

Base=2493

A.4.9 Income from Coir Sector

A4.9.1 Table Nos.4.12 and 4.13 present the distribution of the income from coir sector as a percentage of total family income of the households of the respondents. 21 workers did not reveal either the income from coir sector or the total family income.

Table No.4.12

Income from Coir Sector as a Percentage of Total Family Income

Share of Coir Sector in Family income	No. of Respondents	Percentage to Total
Below 25%	433	17.5
26% - 50%	809	32.6
51% - 75%	330	13.3
75% - 99%	104	4.2
100%	803	32.4
Total	2479	100.0

A4.9.2 The above table reveals that about one third of the families of the coir workers depends solely on the income from coir sector. Another 18 per cent of the families have coir sector as their main source of income.

Table No.4.13

District wise-Income from Coir Sector as a Percentage of Total Family Income

District	Share of Coir Sector in Family income					
	Below 25%	26% - 50%	51% - 75%	75% - 99%	100%	Total
Thiruvananthapuram	1.8	39.9	23.6	1.1	33.6	100.0
Kollam	18.1	61.7	8.1	2.4	9.6	100.0
Alappuzha	10.7	19.4	11.5	4.2	54.2	100.0
Kottayam	10.3	52.3	10.3	1.4	25.7	100.0
Ernakulam	2.9	32.4	11.8	5.9	47.1	100.0
Thrissur	0.0	24.0	51.0	24.0	1.0	100.0
Malapuram	39.6	30.2	3.8	0.0	26.4	100.0
Kozhikode	54.5	20.8	10.1	3.5	11.1	100.0
Kannur	46.5	27.9	10.5	7.0	8.1	100.0
Kasargode	18.9	51.4	9.0	6.3	14.4	100.0
Total	17.5	32.6	13.3	4.2	32.4	100.0

A4.9.3 Table No. 4.13 reveals that the dependence of families of the coir workers on income from coir sector is the highest in Alapuzha district. More than half of the families of the respondent coir workers solely depend on the income from coir sector for their survival. Nearly half of the coir workers' families in Ernakulam district also solely depend on income from the coir sector. One third of the workers' families in Thiruvananthapuram district and one fourth of the families in Kottayam and Malappuram do not have any other source of income.

A4.10 Nature of Job

A410.1 Table Nos. 4.14 and 4.15 present the nature of the job performed by the respondents

Table No.4.14
Nature of Job Performed by the Respondents

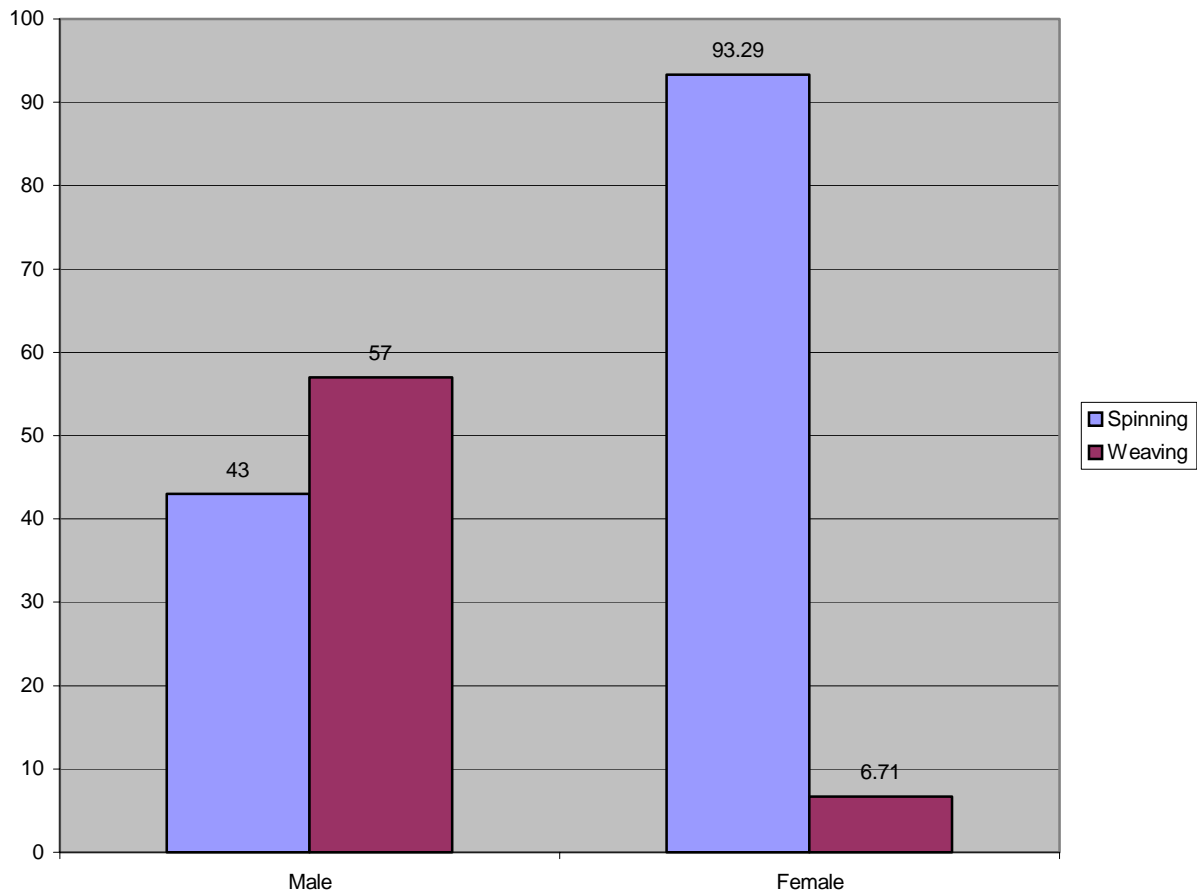
Nature of Job	Male		Female		Total	
	No.	%	No.	%	No.	%
Spinning	230	43%	1833	93.29%	2063	82.52%
Weaving	305	57%	132	6.71	437	17.48

A4.10.2 The three major occupations in the coir sector viz., spinning, weaving and extracting together contribute 90 per cent of the employment in the coir sector. As high as 70 per cent of the workers are engaged in spinning. Another 11 per cent is into weaving. While large majority (84 per cent) of the women workers undertake the job of spinning, only one fifth of the men workers are engaged in spinning. Nearly half of the men workers (46 per cent) are into weaving. Other jobs in which significant number of men are engaged include retting and extracting. Ten per cent of the men are also engaged in other works not listed in the table. Extracting, weaving and spooling are the opportunities for the female workers other than spinning. The job-wise classification is shown in Figure No. 4.6.

Table No.4.15
District wise - Nature of Job Performed by the Respondents

Job	Trivan- drum	Kollam	Alap- puzha	Kotta- yam	Erna- kulam	Thrissur	Mala- ppuram	Kozhi kode	Kannur	Kasar -gode
Spinning	93.8	90.00	68	94.4	65.7	100	100	100	100	100
Weaving	6.2	10.00	32	5.6	34.3	0	0	0	0	0

Figure No.4.6
Nature of Job Performed by the Respondents



A4.10.3 The share of spinning activity varies from 51 per cent in Thrissur District to 94 per cent in Kottayam District. Significant proportion of coir workers in the districts of Ernakulam (34 per cent) and Alappuzha (24 per cent) are engaged in weaving. About one third of the workers in Kasaragode and Thrissur are engaged in extracting.

A4.11 Number of Working Days

A4.11.1 Tables No.4.16, 4.17 and 4.18 present the details about the number of days in which the respondents worked in a year.

Table No4.16
Number of Days Employability

Number of Working days	Male		Female		Total	
	No.	%	No.	%	No.	%
100 days or below	28	5.4	88	4.5	116	4.7
101 days- 150 days	65	12.4	287	14.8	352	14.3
151 days -200 days	200	38.2	609	31.4	809	32.8
201 days - 250 days	150	28.7	615	31.7	765	31.0
Above 250 days	80	15.3	343	17.7	423	17.2
Total	523	100.0	1942	100.0	2465	100.0

Note: 35 Respondents could not remember the number of days they worked.

A4.11.2 Nearly two third of the workers get work in the range of 151-250 days. Only 16 per cent of the workers are getting less than 150 days of work. It is significant to note that 17 per cent of the workers are employed for more than 250 days.

Table No.4.17

District-wise Employability

District	100 days or below	101 - 150 days	151 -200 days	201 - 250 days	Above 250 days	Total
Thiruvananthapuram	4.9	59.1	33.3	2.3	0.4	100.0
Kollam	9.3	27.1	49.1	8.4	6.0	100.0
Alappuzha	4.4	6.9	27.1	39.6	22.0	100.0
Kottayam	4.7	4.2	47.9	29.6	13.6	100.0
Ernakulam	0.0	34.3	62.9	0.0	2.9	100.0
Thrissur	1.1	0.0	44.7	31.9	22.3	100.0
Malapuram	24.5	5.7	43.4	11.3	15.1	100.0
Kozhikode	1.4	3.8	22.0	36.6	36.2	100.0
Kannur	0.0	2.4	26.2	58.3	13.1	100.0
Kasaragod	0.0	0.9	13.4	76.8	8.9	100.0
Total	4.7	14.3	32.8	31.0	17.2	100.0

Table No.4.18

District-wise Employment Days

District	Male	Female	Total
Thiruvananthapuram	147	160	160
Kollam	187	183	183
Alappuzha	219	239	232
Kottayam	196	215	211
Ernakulam	185	217	204
Thrissur	244	207	219
Malapuram	152	195	183
Kozhikode	195	240	235
Kannur	195	228	226
Kasaragod	225	231	230
Total	211	215	214

A4.11.3 The table reveals that, on an average, female workers are getting employed for slightly larger number of days of work compared to male workers. District-wise analysis shows that the average number of working days was the highest in Kozhikode district closely followed by Alappuzha and Kasargod districts. Workers in Thiruvananthapuram District received the lowest number of days of work. Only in Kollam and Thrissur

districts, the male workers got more days of work than female workers. In the districts of Kozhikode, Malappuram, Kannur, Ernakulam, Alappuzha and Kottayam, the female workers got work for significantly larger number of days than male workers. It is in Kozhikode and Alappuzha districts that women workers are getting largest number of working days.

A4.12 **Nature of Employment**

A4.12.1 Table No.4.19 presents the details on whether the workers were working on a full time basis or not. The study revealed that most of the workers are employed on a full time basis. Only 5 per cent of the workers were employed on a part time basis.

Table No.4.19
Nature of Employment- Full time or Part time

District	Full time	Part time	Total
Thiruvananthapuram	76.3	23.7	100.0
Kollam	77.1	22.9	100.0
Alappuzha	74.1	25.9	100.0
Kottayam	79.5	20.5	100.0
Ernakulam	74.3	25.7	100.0
Thrissur	59.4	40.6	100.0
Malapuram	72.5	27.5	100.0
Kozhikode	79.0	21.0	100.0
Kannur	100.0	0.0	100.0
Kasaragod	89.1	10.9	100.0
Total	74.6	25.4	100.0

A4.13 Sector of Employment

A4.13.1 Table No. 4.20 and 4.21 present the details about the sector in which the workers are employed. The figurative representation is given in Figure No.4.7.

Table No.4.20
Sector-wise Employment Classification

Sector	Male		Female		Total	
	No.	%	No.	%	No.	%
Co-operative	92	17.2	552	28.1	644	25.8
Factory	99	18.5	25	1.3	124	5.0
Government	4	0.7	8	0.4	12	0.5
Unorganised sector	340	63.6	1380	70.3	1720	68.7
Total	535	100.0	1965	100.0	2500	100.0

A4.13.2 More than two-third of the coir workers are employed in the unorganized sector. The share of factory sector in employment is about 5 per cent. The cooperative sector contributes 26 per cent of the employment. The employment in the Government sector is insignificant. The table also reveals that the proportion of workers employed in the organized sector ie. in cooperatives, factories and Government owned firms are higher among male workers than female workers.

Figure No.4.7
Sectors of Employment

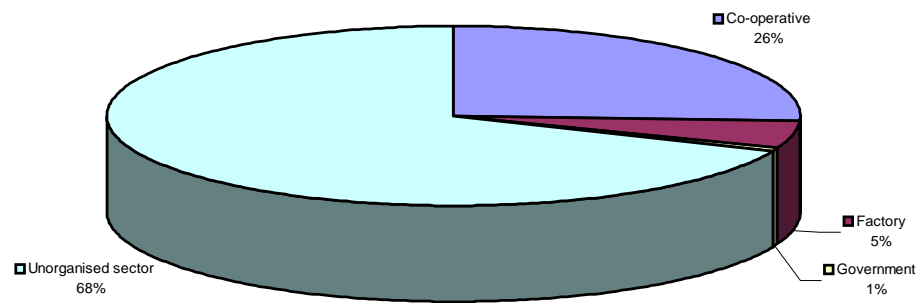


Table No.4.21

District wise- Details of Sectors of Employment

District	Cooperative	Factory	Government	Unorganised sector	Total
Thiruvananthapuram	50.2	0.7	0.0	49.1	100.0
Kollam	2.3	0.6	0.0	97.1	100.0
Alappuzha	5.7	11.8	0.5	82.0	100.0
Kottayam	0.0	0.0	0.0	100.0	100.0
Ernakulam	100.0	0.0	0.0	0.0	100.0
Thrissur	62.5	0.0	0.0	37.5	100.0
Malapuram	22.6	1.9	0.0	75.5	100.0
Kozhikode	69.2	0.0	0.3	30.5	100.0
Kannur	84.9	1.2	7.0	6.9	100.0
Kasaragod	54.9	0.0	0.0	45.1	100.0
Total	25.8	5.0	0.5	68.7	100.0

A4.13.3 While large majority of the coir workers in Alapuzha, Kottayam, Kollam and Malappuram work in the unorganized sector, majority in other districts work in the organized sector particularly cooperatives.

A4.14 Work Related Diseases

A4.14.1 About 30 per cent of the respondent workers (754 workers) reported that they were affected by work-related diseases of which a few have reported more than one disease. The work related diseases reported are presented in Table No.4.22.

Table No.4.22

Work Related Diseases Reported by the Respondent Workers

Work Related Diseases	No.	Percentage to Total Number of Workers
Allergy	446	17.8
Body pain/Hand pain/ Back pain	208	8.3
Cough	21	0.8
Skin disease	21	0.8
Asthma	19	0.8
Sneezing	15	0.6
Arthritis	12	0.5
Chest pain	7	0.3
Bronchitis	7	0.3
Other diseases	19	0.8

A4.14.2 Allergy and body pain are the most common work related diseases. The incidence of allergy was reported by 18 per cent of the coir workers. Body pain was reported by 8 per cent of the workers.

A4.14.3 Table No.4.23, clearly shows the occurrence of job related disease according to the nature of job performed by the workers.

Table No.4.23

Occurrence of Job Related Diseases According to the Type of Job

Activity	Male	Female	Total %
Spinning	22.9	29.7	29.3
Extracting	25.2	31.3	25.9
Weaving	36.4	33.3	33.9
Retting	28.9	0.0	28.9
Spooling	25.0	30.8	30.0
Rolling	60.0	--	37.5
Others	20.0	35.1	28.7
Total	26.0	30.7	30.0

Note: % Column gives the percentage to total number of workers engaged in the activity

A4.14.4 While 34 per cent of those engaged in weaving reported that they were affected by occupation related diseases, the proportion of those engaged in spinning and retting affected by diseases related to their occupation was lower at 29 per cent. The proportion was slightly lower in extracting.

A4.15 Mechanisation

A4.15.1 Table No.4.24 gives the details about the degree of mechanisation in the units where the respondents work.

Table No.4.24

District wise - Degree of Mechanisation

District	Fully	Partially	Not mechanised	Total
Thiruvananthapuram	2.6	1.1	96.3	100
Kollam	1.2	63.3	35.5	100
Alappuzha	0.6	11.6	87.8	100
Kottayam	0.0	1.9	98.1	100
Ernakulam	34.3	14.3	51.4	100
Thrissur	0.0	49.0	51.0	100
Malapuram	1.9	7.5	90.6	100
Kozhikode	24.6	1.4	74.0	100
Kannur	70.9	0.0	29.1	100
Kasaragod	63.7	2.7	33.6	100
Total	9.4	16.1	74.6	100

A4.15.2 Only 9 per cent of the coir workers are employed in fully mechanised units. Another 16 per cent are employed in partially mechanised units. The remaining work in non-mechanised units. Proportion of coir workers employed in mechanised units is highest in Kannur District closely followed by Kasaragod District. In Thiruvananthapuram, Kottayam, Malappuram and Alapuzha districts, large majority of the workers are employed in non-mechanised units.

A4.16 Self Help Groups

A4.16.1 The respondents in Alapuzha District only are members of Coir SHGs. Only 45 of the 1000 respondents in Alappuzha District are members of SHGs engaged in coir related activities. Among the respondents who are members of the coir SHGs, 18 (58 per cent) are engaged in coir production. Of the remaining, 18 (40 per cent) are engaged in selling coir products. The only other respondent who is a member of the coir SHG is into yarn making.

A4.17 Cluster Development Scheme (CDS)

A4.17.1 CDS in coir sector is functioning only in Alappuzha district. It was found that the awareness about Cluster Development Scheme was very low even among the coir workers in Alapuzha district. Just 21 out of the 1000 respondents in Alapuzha District are aware of the scheme. Of the 21 respondents who are aware of the scheme, 16 are members of CDS. The members associate with CDS mainly in raw material procurement. A few of the respondents associate with CDS in marketing and in availing credit facility.

A4.17.2 *Characteristics of Coir Industry in Kerala*

Coir, one of the strong traditional industries in Kerala, is having a unique position in the economy of the state. Any shift in the techno-related to the coir sector will affect the society. Based on the survey conducted the important characteristics of the industry have been shown. Pictorial representation is given in Figure No.4.8.

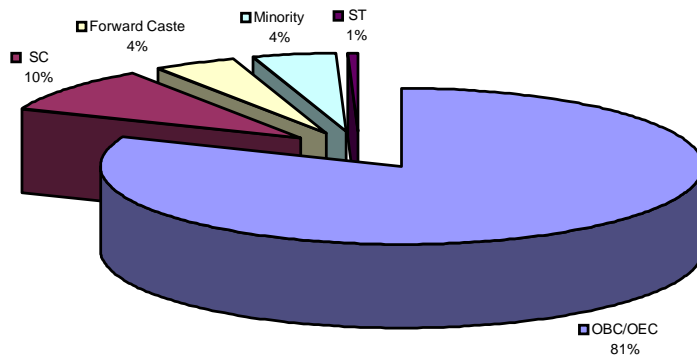
A4.17.3 *Distribution of Workers – Community wise*

Community	Nos.	Percentage
OBC/OEC *	2,91,600	81
SC	34,560	9.6
Forward Caste	15,840	4.4
Minority **	15,840	4.4
ST	2,160	0.6
Total	3,60,000	100

* Muslim community workers included in OBC category.

** Minority represents workers belonging to Christian community.

Chart No.4.8
Distribution of Workers - Community wise



A4.17.4 *Distribution of workers – Gender wise*

Sex	Nos.	Percentage
Male	77,040	21.5
Female	2,82,960	78.5
Total	3,60,000	100

Female workers dominate the spinning segment and male workers dominate the weaving segment as shown in Figure No.4.9.

A4.17.5 *Distribution of workers – Establishment wise*

Establishment	Nos.	Part time	Full time
Co-operative	1,08,000	32,400	75,600
Unorganised	2,16,000	54,000	1,62,000
Organised (Public & Private)	36,000	-	36,000
Total	3,60,000	86,400	2,73,000

It is estimated that about 30 per cent of the workforce is employed in co-operative enterprises and about 10 per cent in organised enterprises that include both private and public sector. The latter includes about 5000 workers belonging to the recently formed Self Help Groups through about 200 SHGs. The remaining 60 per cent constitutes the majority working in an unorganised manner as represented in Figure No.4.10.

Chart No.4.9
Distribution of Workers - Gender wise

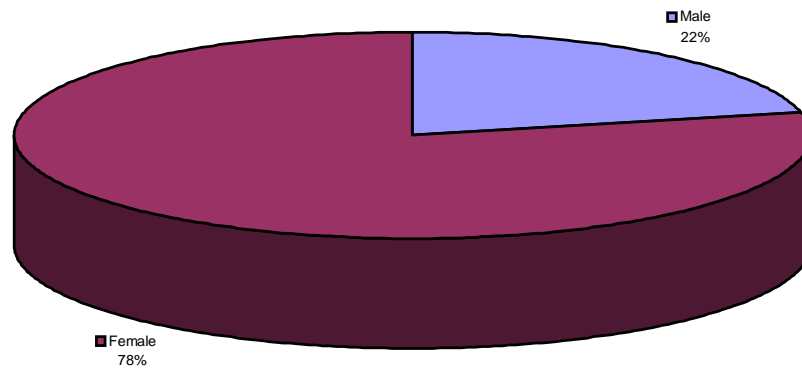
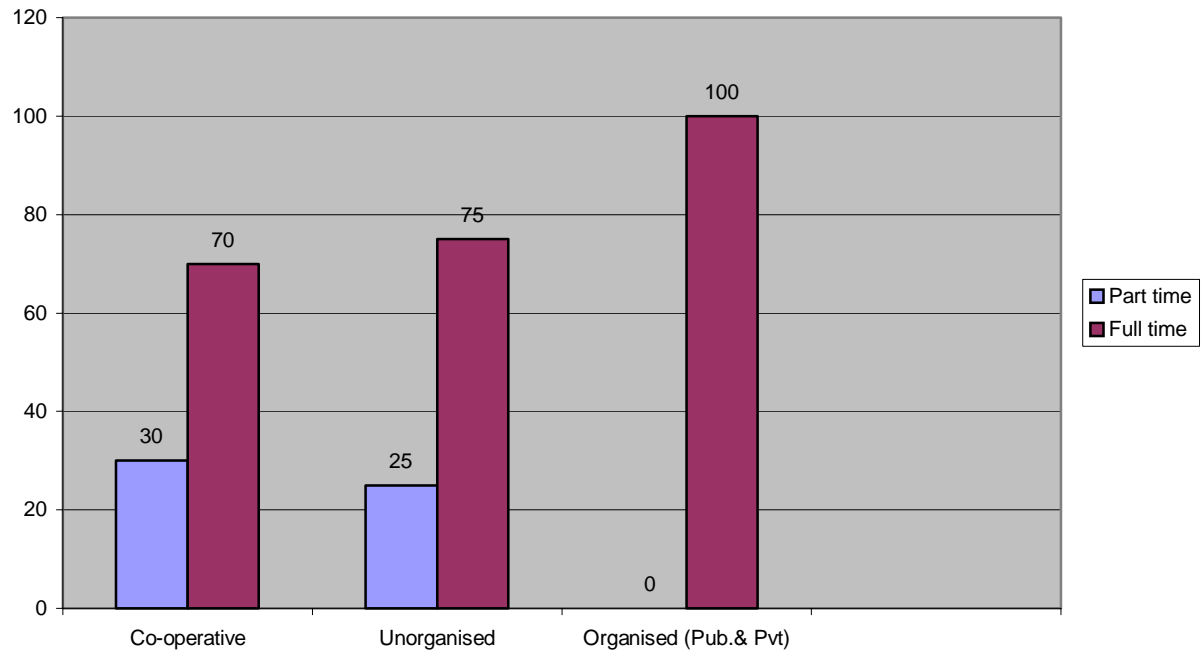


Figure No.4.10
Distribution of workers - Establishment wise



A4.17.6 *Machines and its capacity utilisation*

Type of Machine	Nos.	Capacity Utilisation (%)
Traditional Ratt	48,000	60
Motorised Traditional Ratt	12,000	70
Motorised Ratt	5,000	40
Hand loom	28,000	50
Semi Automatic and Automatic Powerloom	28	60

Most of the Exporting units outsource product from small scale manufacturing units.

About 99% of Motorised ratts is in the co-operative sector and very little in private enterprises. Utilisation of the installed capacity is low because of a combination of factors that include the attitude of workers to modernisation, lack of proper training and quality wise misconceptions.

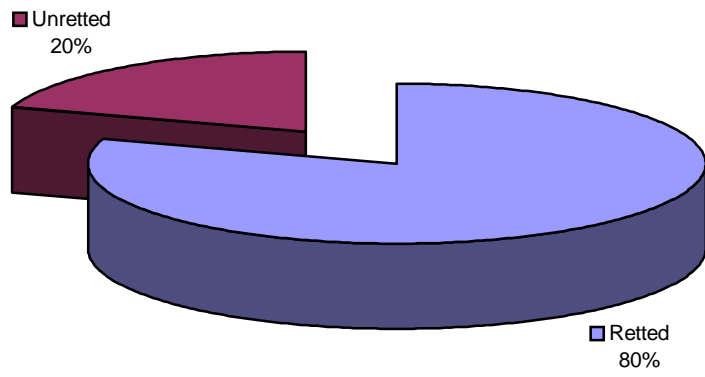
Lion's share of handlooms is in the small scale category. SHG (Self Help Groups) are mainly formed in the Weaving Sector in this category.

A4.17.7 *Fibre Production in Kerala*

Type	Quantity in Tonnes	Percentage
Retted	1,04,000	80
Unretted	26,000	20
TOTAL	1,30,000	100

Out of the current level of production of about 1,30,000 tonnes per year the share of the retted fibre is about 80%. The retting process is carried out by mostly private operators in an unorganised manner although certain Co-operative Societies are also in the field. Besides the local production of unretted fibre, a large quantity of unretted fibre is also brought from Tamil Nadu. The pictorial representation is given in Figure No. 4.11.

Chart No.4.11
Fibre Production in Kerala



A4.17.8 *Registration with Coir Board*

Management	Percentage of units
Public Sector	100
Private organised	75
Unorganised	60
Co-operative Sector	20

Most of the operators in the Primary Sector engaged in retting, extracting and spinning both in Co-operative and Private Sector are not registered with the Coir Board. The percentage figures relating to units registered with the Board represent those engaged in the Product segment.

A4.17.9 *Registration with Workers Welfare Board*

Management	Percentage
Public Sector	100
Private Organised	60
Unorganised	10

Only the organised sector have taken registration with Welfare Board. Co-operative and public sector establishments have invariably taken the registration. Lower representation in the unorganised segment is partly attributable to their method of working following a piece wage system and without adequate safeguard.

B.4 MANUFACTURING AND COMMERCIAL ASPECTS

B. 4.1 Introduction

Coir Industry is one of the major employment generating and foreign exchange earthing traditional industry in Kerala. The major segment includes the production and marketing activities. The production segment mainly consists of retting and fibre extraction, spinning yarn and weaving. The segment mainly consists of unorganised units and co-operative societies. Fibre extraction takes place both in conventional method (retting) and mechanical method (defibring). Spinning is done mainly by manual methods.

B. 4.2 Characteristics of Samples

B. 4.2.1 The district-wise breakup of the coir units in the sample is presented in Table No.4.25

Table No. 4.25
District- wise Sample Breakup

District	No. of Units	Percentage to Total
Thiruvananthapuram	7	7.2
Kollam	10	10.3
Alappuzha	50	51.5
Kottayam	4	4.1
Ernakulam	2	2.1
Thrissur	4	4.1
Malapuram	2	2.1
Kozhikode	6	6.2
Kannur	12	12.4
Total	97	100.0

B.4.2.2 Table No. 4.26 presents the details about the year of establishment of the coir units included in the sample.

Table No. 4.26

Year of Establishment

Year of Establishment	No. of Units	Percentage to Total
1950 or Before	9	9.3
1951-1970	28	28.9
1971-1990	33	34.0
After 1990	27	27.8
Total	97	100.0

B. 4.2.3 Table No.4.27 presents the details about the type of management of the units. Private sector players in the coir industry are classified as organised and unorganised and are presented separately as seen in Figure No.4.12.

Table No.4.27

Type of Management of the Units

Type of Management	No. of Units	Percentage to Total
Government	6	6.2
Private Sector Units (Organised)	16	16.5
Cooperative	40	41.2
Unorganised Private Sector	32	33.0
SHG	3	3.1
Total	97	100.0

B. 4.2.4 Table No.4.28 presents the level of operation of the units.

Table No. 4.28

Level of Operation of the Units

Level of Operation	No. of Units	Percentage to Total
Small Scale	87	89.7
Medium Scale	8	8.2
Large Scale	2	2.1
Total	97	100.0

B. 4.2.5 Table No. 4.29 presents the distribution of units according to the main activity of the firm. Apart from the main activity, they may also be involved in other activities. For example, a marketer may be involved in spinning or weaving but has been classified under ‘marketers’. The distribution is pictorially shown in Figure No. 4.13.

Table No. 4.29

Distribution of Units Based on Prime Activity

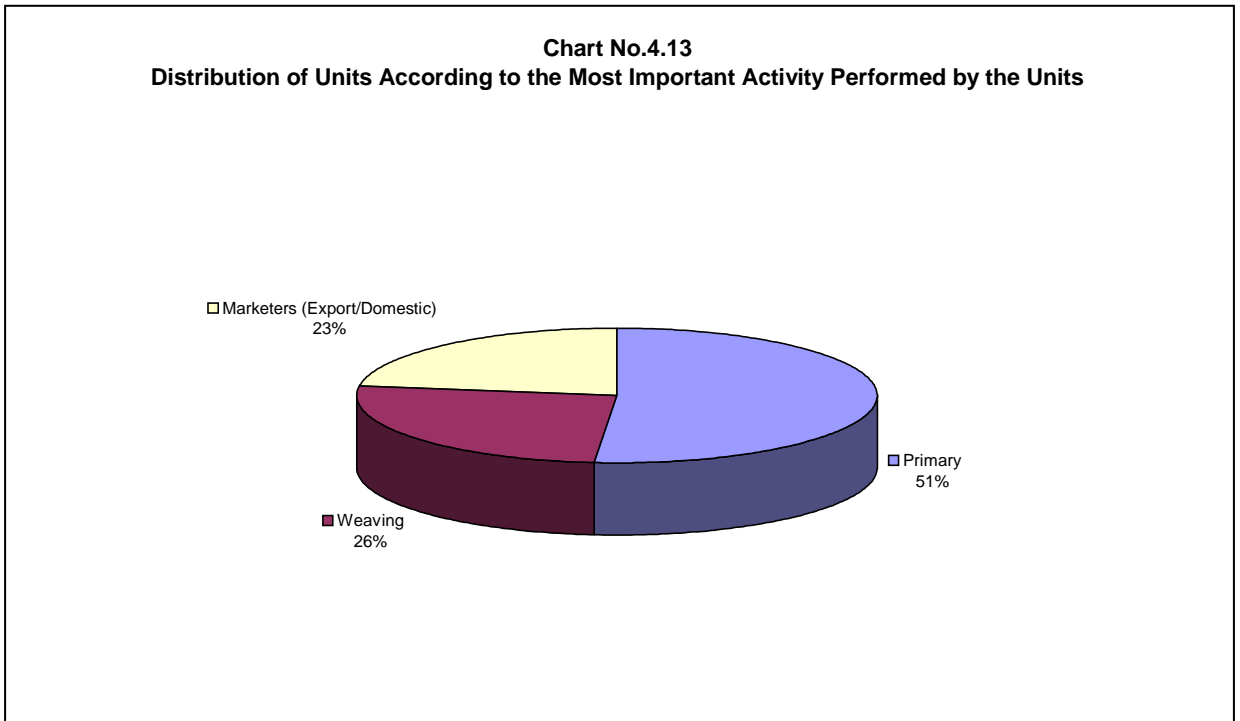
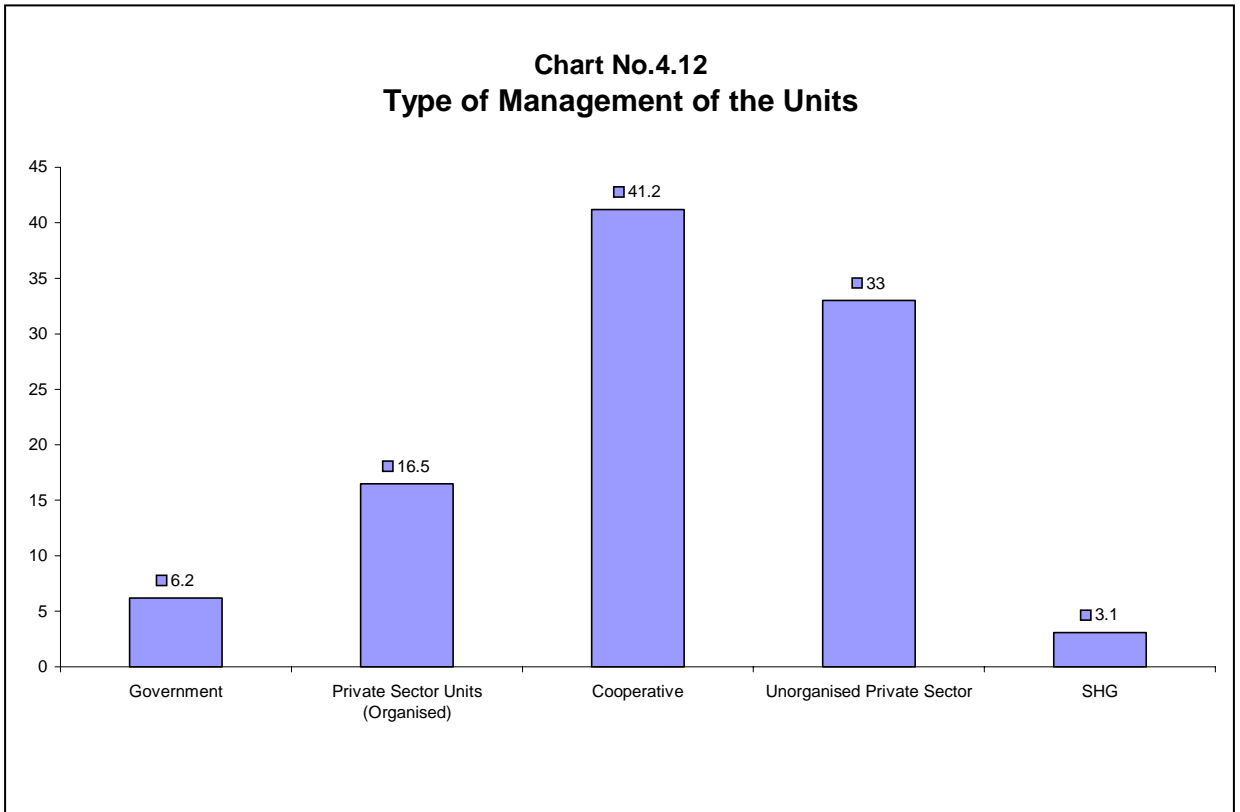
Main Activity	No. of Units	Percentage to Total
Primary	50	51.5
Weaving	25	25.8
Marketers (Export/Domestic)	22	22.7
Total	97	100.0

Table No. 4.30

Main Activity of the Unit according to the Type of Management

Management	Primary		Weaving		Marketing (Export or Domestic)		Total	
	No. of Units	Percentage	No. of Units	Percentage	No. of Units	Percentage	No. of Units	Percentage
Government	3	50.0	0	0.0	3	50.0	6	100.0
Private Sector Units (Organised)	1	6.3	0	0.0	15	93.8	16	100.0
Cooperative	29	72.5	9	22.5	2	5.0	40	100.0
Unorganised Private Sector	16	50.0	14	43.8	2	6.3	32	100.0
SHG	1	33.3	2	66.7	0	0.0	3	100.0
Total	50	51.5	25	25.8	22	22.7	97	100.0

B. 4.2.6 Of the forty cooperatives in the sample, 29 are mainly engaged in spinning. Of the remaining eleven cooperatives, two are primarily marketers and the remaining are weaving units. Of the sixteen private sector units in the organised sector, all except one are primarily marketers. The private players in the unorganised sector and the SHGs are mostly into spinning and weaving.



B. 4.2.7 Table No. 4.31 presents the classification of units according to the products manufactured by the unit.

Table No.4.31
Products Manufactured

Products	Cases	%
Mats & Mattings	54	55.7
Yarn	41	42.3
Fibre : Retted	4	9.3
Defibering	5	
Coir Bed /Mattress	4	9.3
Coir Ropes	6	6.2
Curled Coir	3	3.1
Others	2	2.1

B. 4.2.8 More than half of the units is engaged in making mats and mattings. While 41 units are into yarn making, nine units are engaged in producing fibre. Six units in the sample produce coir ropes. Nine units are manufacturing coir beds or mattresses.

B. 4.3 Degree of Mechanisation

Details about the degree of mechanisation in the units selected for the study are presented in Table Nos. 4.32 to 4.35

Table No. 4.32

Degree of Mechanisation

Degree of Mechanisation	No. of Units	Percentage to Total
Fully Mechanised	19	19.6
Partially Mechanised	31	32.0
Non-Mechanised	47	48.4
Total	97	100.0

B.4.3.1 More than half of the units has mechanised their operations either fully or partially. One fifth of the units have resorted to full mechanisation and another one third to partial mechanisation. The facts are also shown in Figure No.4.14.

Table No. 4.33

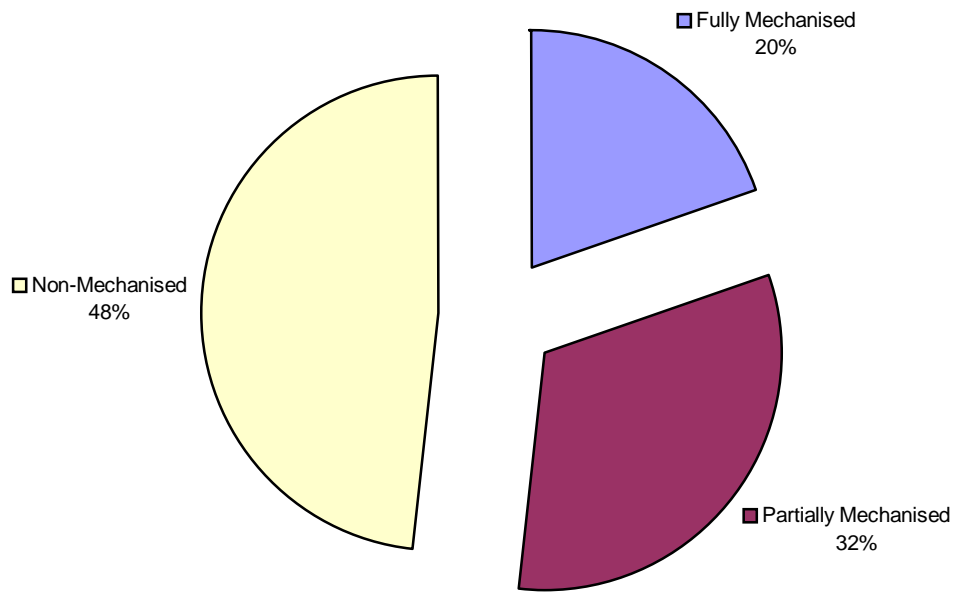
Degree of Mechanisation – Segment wise

Type of Activity	Fully Mechanised		Partially Mechanised		Non-Mechanised		Total	
	No. of Units	%	No. of Units	%	No. of Units	%	No. of Units	%
Primary	16	32.0	14	28.0	20	40.0	50	100.0
Weaving	0	0.0	4	16.0	21	84.0	25	100.0
Marketers (Export/Domestic)	3	13.6	13	59.1	6	27.3	22	100.0
Total	19	19.6	31	32.0	47	48.5	97	100.0

B. 4.3.2 It appears from the above table that mechanisation has largely bypassed the weaving sector. Just 16 per cent of the units with weaving as their primary activity could mechanise at least partially. Sixty per cent of the primary units have adopted mechanisation with almost equal share for fully mechanised and partially mechanised units.

Tables Nos. 4.32 and 4.33 given above and Table Nos. 4.34 and 4.35 given below may be bringing slightly conflicting results as there are primary units without any ratt and weaving units with out any loom.

Chart No.4.14
Degree of Mechanisation



B. 4.3.3 The details about the ratts used by the primary units are presented in Table No. 4.34.

Table No. 4.34

Number of Ratts Installed in Primary Units

No. of Ratts	Mechanised Ratts		Manual Ratts		Mechanised + Manual	
	No. of Units	Percentage to Total	No. of Units	Percentage to Total	No. of Units	Percentage to Total
None	32	64.0	18	36.0	12	24.0
Up to 10	3	6.0	14	28.0	12	24.0
11-50	4	8.0	10	20.0	9	18.0
51-100	9	18.0	2	4.0	4	8.0
Above 100	2	4.0	6	12.0	13	13.0
Total	50	100.0	50	100.0	50	100.0

B. 4.3.4 The details about the looms used by the weaving units are presented in Table No. 4.35.

Table No. 4.35

Number of Looms Installed in Weaving Units

No. of ratts	Mechanised Looms		Manual Looms		Mechanised + Manual	
	No. of Units	Percentage to Total	No. of Units	Percentage to Total	No. of Units	Percentage to Total
None	22	88.0	3	12.0	3	12.0
2-3	3	12.0	4	16.0	4	16.0
4-5	0	0.0	8	32.0	8	32.0
6-10	0.0	0.0	4	16.0	4	16.0
Above 10	0.0	0.0	6	24.0	6	24.0
Total	25	100.0	25	100.0	25	100.0

B. 4.4 Fibre Used

The type of fibre used by the coir units is presented in Table No. 4.36.

Table No. 4.36

Type of Fibre Used by the Primary Units

Type of Fibre	No. of Units	Percentage to Total
Retted	24	48.0
Unretted	16	32.0
Retted & Unretted	4	8.0
Not Applicable	6	12.0
Total	50	100.0

B. 4.4.1 Majority of the primary units uses retted fibre either fully or partially. The respondents were asked about the major source from which they procure fibre. The results are presented in Table Nos. 4.37 and 4.38.

Table No.4.37

Major Source of Retted Fibre

Source	No. of Units	Percentage to Total
Retted husk	17	60.7
Local dealers	10	35.7
Yarn suppliers	1	3.6
Total	28	100.0

B.4.4.2 Of the 28 primary units using retted fibre, 17 are using retted husk. While ten units source retted fibre from the local dealers, one unit gets it from yarn suppliers.

Table No. 4.38

Major Source of Unretted Fibre

Source	No. of Units	Percentage to Total
Tamilnadu	11	55.0
Local dealers	6	30.0*
Coir fed	1	5.0
Lakshadweep Unit	1	5.0
Own Production	1	5.0
Total	20	100.0

(* combines from Kerala and Tamil Nadu sources)

- B. 4.4.3 Of the 20 units which used unretted fibre, 11 reported that they were buying it mainly from Tamil Nadu. Six units depend on local dealers.

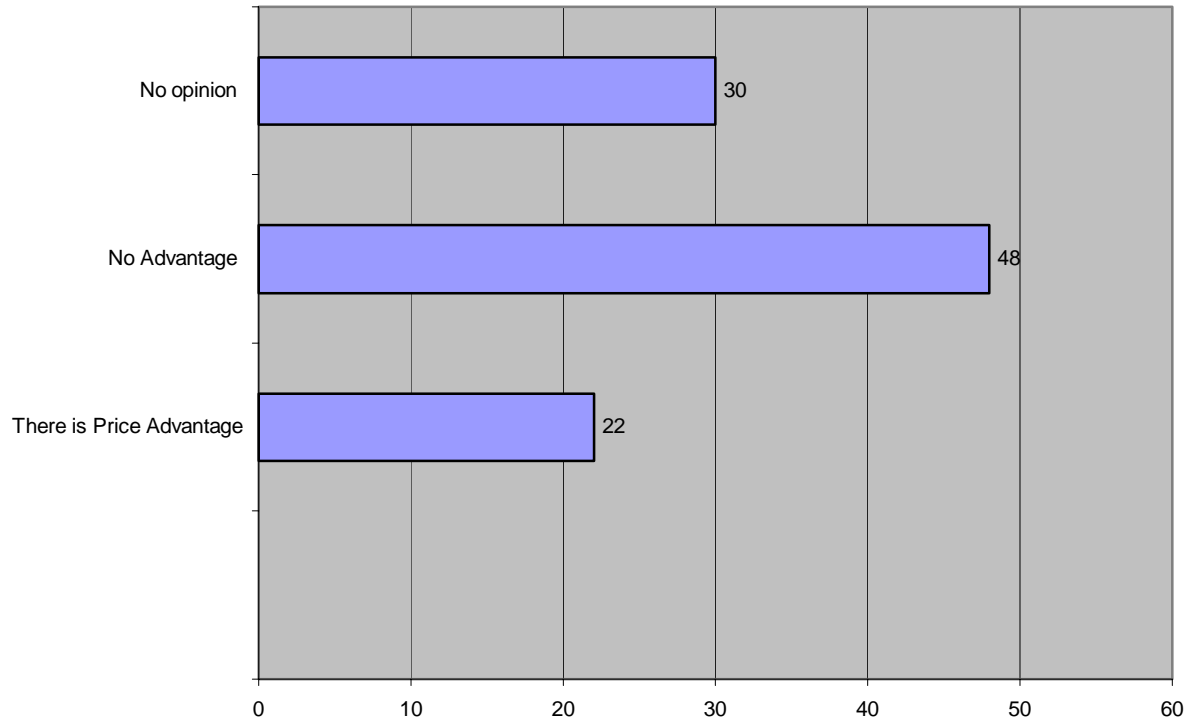
Table No.4.39

Perception about Price Advantage in Procuring Raw Material from Outside Kerala

Opinion	Number of Units			Total
	Small	Medium	Large Scale	
There is Price Advantage	11	0	0	11
No Advantage	23	1	0	24
No opinion	15	0	0	15
Total	49	1	0	50

- B. 4.4.4. One fifth of the respondents in the primary units opined that there is price advantage in procuring raw material from outside Kerala. When further enquired about the quality and dependability of the raw materials from outside Kerala, only two out of the 11 had a bad opinion about the quality and one of the respondents had a bad opinion on dependability. The pictorial representation is given as Figure No.4.15.

Chart No.4.15
Perception about Price Advantage in Procuring Raw Material from
Outside Kerala



B4.5 Registration with Coir Board and Coir Worker’s Welfare Board

B4.5.1 Table No.4.40 and Table No. 4.41 present the details about the units registered with the Coir Board and Coir Worker’s Welfare Board.

Table No. 4.40

Units Registered with the Coir Board

Management	No. of units registered with Coir Board	% to total number of units
Government	4	66.7
Private Sector-Organised	14	87.5
Cooperative	14	35.0
Private Sector-Unorganised	16	50.0
SHG	1	33.3
Total	49	50.5

B 4.5.2 Of the 97 units in the sample, half of the units (49 units) are registered with the Coir Board. While large majority of the government owned units and those in the private organized sector were registered with the Coir Board, only 35 per cent of the cooperatives and 50 per cent of the small players in the unorganized sector did so. Only one of the three units run by the SHGs was registered with the Coir Board.

Table No. 4.41

Units Registered with Coir Worker's Welfare Board

Management	No. of Units Registered with Coir Worker's Welfare Board	Percentage to Total Number of Units
Government	6	100.0
Private Sector-Organised	11	68.8
Cooperative	36	90.0
Private Sector-Unorganised	2	6.3
SHG	0	66.7
Total	55	58.8

B4.5.3 While all the Government owned units are registered with Coir Worker's Welfare Board, large majority of the units in the unorganized sector did not register with the Board. More than two third of the units in the private organised sector and 90 per cent of the Co-operative Units have registration with the Worker's Welfare Board.

B. 4.6 Loans

B. 4.6.1 Table No. 4.42 presents the details about the units availing of term loans and working capital loans.

Table No. 4.42

Units Availing Loans

Activity	Term Loan		Working Capital Loan	
	No. of units	% to total number of units	No. of units	% to total number of units
Primary	11	22.0	31	62.0
Weaving	7	28.0	10	40.0
Marketers (Export/Domestic)	2	9.1	6	27.3
Total	20	20.6	47	48.5

B. 4.6.2 Only 20 units reported that they are availing of term loans. While about one fourth of the primary units and weaving units availed term loan, only 9 per cent of the units with marketing of coir as the primary activity availed term loans. Working Capital loans were availed by a relatively larger number of units compared to term loans. Among the primary units, 62 per cent have availed of working capital loans. While 40 per cent of the weaving units availed of capital loans, only one fourth of the marketers have done so.

B. 4.7 Capacity Utilisation

B. 4.7.1 Capacity utilization has been analysed for the 50 units which have adopted partial or full mechanisation. The results are presented in Table No.4.43.

Table No. 4.43

Capacity Utilisation among Fully or Partially Mechanised Units

Percentage Utilisation	No. of Units	Percentage to Total
25% or less	8	16.0
26%-50%	15	30.0
51%-75%	9	18.0
Above 75%	5	10.0
No response	13	26.0
Total	50	100.0

Base=50

B. 4.7.2 Majority of the fully or partially mechanized units are running much below their capacity.

B. 4.8 Employment

B. 4.8.1 Details regarding the employment in the sample units are presented in Table Nos. 4.44, 4.45 and 4.46.

Table No. 4.44

Average Number of Employees Per Unit

Activity	Average Number of Employees Per Unit		
	Permanent	Contract	Total
Primary	1	82	83
Weaving	1	68	69
Export or Domestic	44	46	89
Total	11	70	81

B. 4.8.2 Table No. 4.44 indicates that on an average, there are 81 employees per unit. While the average for primary units and marketers is above 80, the average number of employees

per weaving unit is only 69. The table also indicates that large majority of the employees are on contract. Table No.4.45 and Figure No.4.16 explore the issue further.

Table No.4.45
Share of Contract Employees in Total Employment

Activity	Share of Contract Employees (%)		
	Male	Female	Total
Primary	94.9	99.5	98.5
Weaving	98.3	98.6	98.4
Marketers	52.4	47.9	51.2
Total	79.1	93.4	87.0

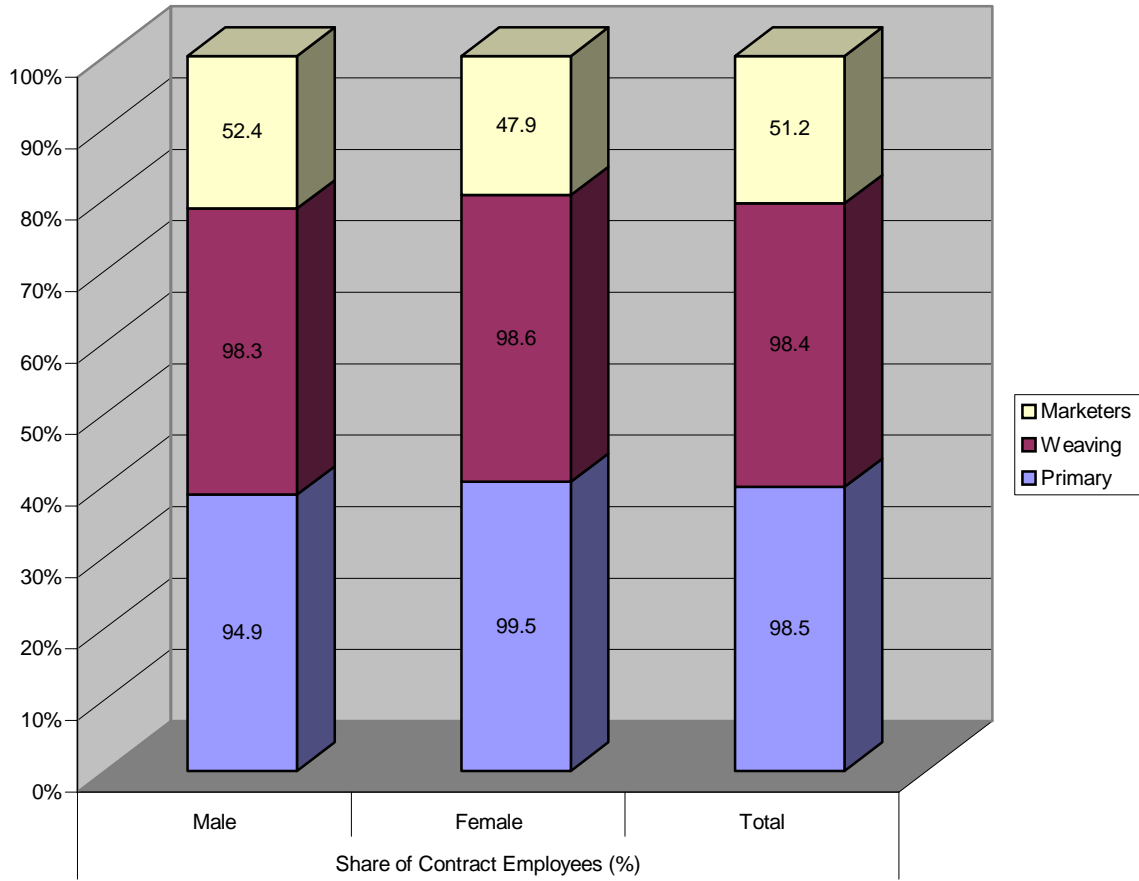
B. 4.8.3 Table No. 4.45 shows that more than 98 per cent of the employees in the primary and weaving units are contract employees. However, about half of the employees in the units engaged primarily in marketing work on a permanent basis. While 93 per cent of the women employees are contract employees, the proportion of male employees who are employed on a contract basis is only 79 per cent.

Table No. 4.46 presents the share of women in employment in the coir sector.

Table No. 4.46
Share of Women in Employment

Activity	Share of Female Workers		
	Permanent	Contract	Total
Primary	26.7	79.5	78.7
Weaving	25.0	30.1	30.1
Marketers (Export or Domestic)	28.0	24.5	26.2
Total	27.8	59.1	55.0

Figure No.4.16
Share of Contract Employees in Total Employment



B. 4.8.4 The above table indicates that while majority of the contract employees are women, their representation is much lower among permanent employees. Only about one fourth of the permanent employees are women. It is also clear from the above table that primary units are women dominated. While 79 per cent of the employees in the primary units are women, only 30 per cent of those in the weaving units are women and 26 per cent units primarily engaged in marketing.

B. 4.9 Annual Turnover

B. 4.9.1 The distribution of the annual turnover of the units in the sample is presented in Table No. 4.47

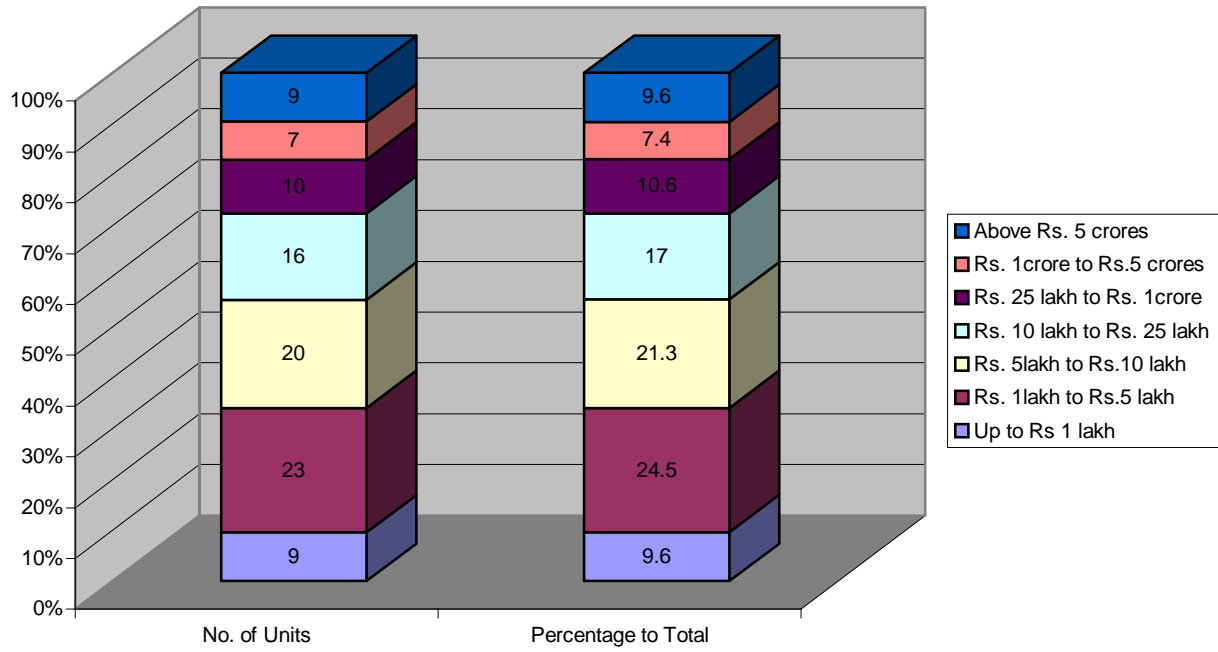
Table No. 5.47
Annual turnover of the Units

Turnover	No. of Units	Percentage to Total
Up to Rs 1 lakh	9	9.6
> Rs. 1lakh & ≤ Rs.5 lakh	23	24.5
> Rs. 5lakh & ≤ Rs.10 lakh	20	21.3
> Rs. 10 lakh & ≤ Rs. 25 lakh	16	17.0
> Rs. 25 lakh & ≤ Rs. 1crore	10	10.6
> Rs. 1crore & ≤ Rs.5 crores	7	7.4
Above Rs. 5 crores	9	9.6
Total	94	100.0

Note: Three units did not reveal their turnover.

B. 4.9.2 Only 10 per cent units had an annual turnover below Rs. 1 lakh. Nearly two third of the units had a turnover in the range of Rs.1.1 lakhs to Rs. 25 lakhs. Of the 16 units which had turnover above one crore, nine had a turnover above Rs. 5 crores. The classification is shown in Figure No. 4.17.

**Figure No.4.17
Annual Turnover of the Units**



B. 4.10 Cluster Development Scheme

B. 4.11 Only three units availed of cluster development facilities. One export unit, one is under an SHG. The second unit, which has been involved in CDS, is in the Spinning Sector. Another one is in the Weaving Sector.

B. 4.12 Export Credit

B. 4.12.1 Ten out of the 97 units included in the study are availing export credit. While 8 of them are private limited companies, one is in the government sector and another is under a cooperative management.

B. 4.13 ISO Certification

B. 4.13.1 Five units in the sample have acquired ISO certification. Only Coir Corporation has acquired ISO certification in the public sector.

B. 4.14 Problems Faced by the Units

B. 4.14.1 Of the 97 units, 90 reported problems with raw materials. Another problem relates to manpower. More than three fourth of the units felt problems with manpower. Yet another important problem faced by the coir units is the lack of governmental support. Then comes the issues related to marketing, technology and shortage of funds. When asked whether the units faced any shortage of funds for operations, 46 per cent of the primary units and 44 per cent of the weaving units reported that they had problems due to fund shortage. But none of the units with marketing as the primary activity face such a problem as seen in Table No.4.48.

Table No. 4.48

Major Problem Areas of Coir Units

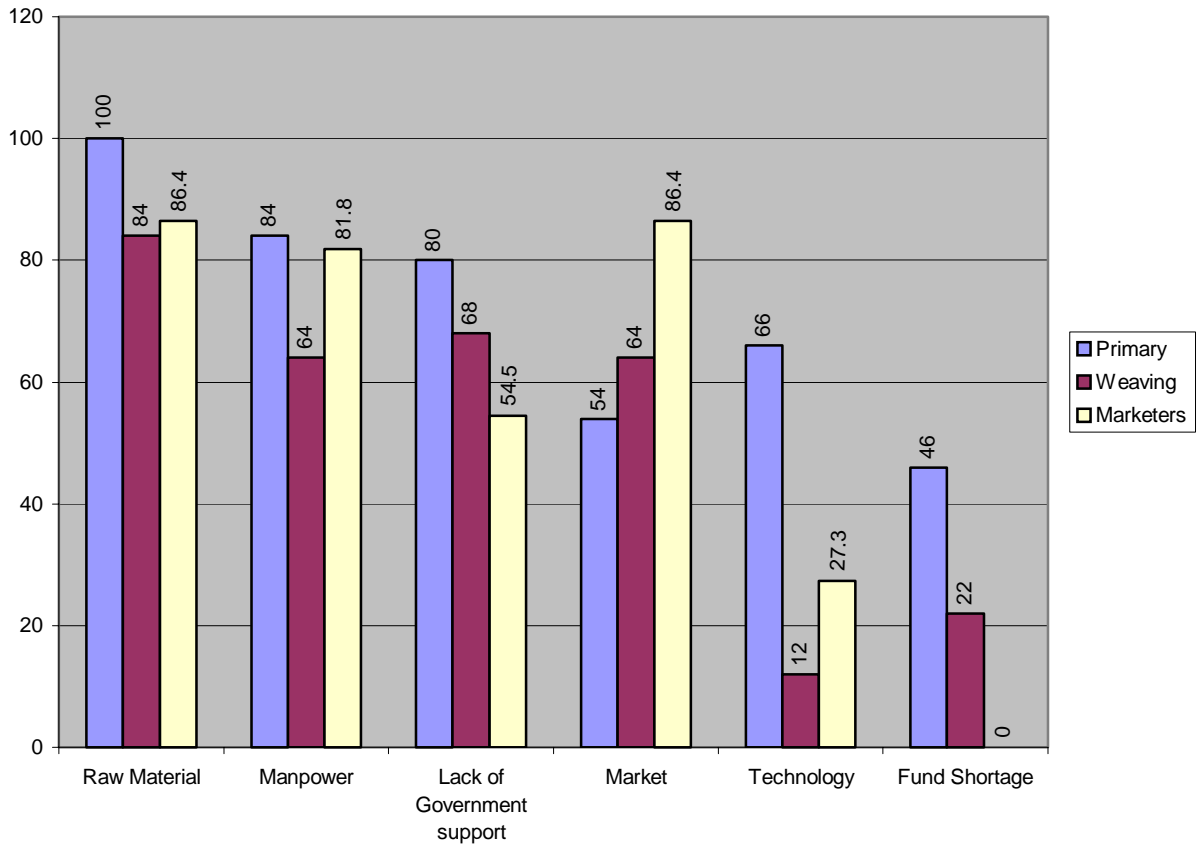
Problem Area	Primary		Weaving		Marketers		Total	
	No.	% to Total	No.	% to Total	No.	% to Total	No.	% to Total
Raw Material	50	100.0	21	84.0	19	86.4	90	92.8
Manpower	42	84.0	16	64.0	18	81.8	76	78.4
Lack of Government support	40	80.0	17	68.0	12	54.5	69	71.1
Market	27	54.0	16	64.0	19	86.4	62	63.9
Technology	33	66.0	3	12.0	6	27.3	42	43.3
Fund Shortage	23	46.0	11	22.0	0	0.0	34	35.1
Base	50		25		22		97	

B. 4.14.2 We have found that as high as 93 per cent of the units faced problems relating to raw materials. When further explored about the problems, 40 units were affected by the non-availability of raw materials at one time or the other. But the more important problem, the respondents feel, is that they had to pay high price for the raw materials. Of the 97 respondents, 83 felt so. Twenty nine respondents also felt that the quality of the raw materials is bad while the remaining did not have any such problem. The details are shown in Figure No.4.18.

B. 4.14.3 Though more than three fourth of the respondents reported that they faced problems relating to manpower, when further explored, it appears that this aspect is not very critical. Only 13 faced problems due to the non-availability of required manpower. While 7 respondents felt that the trade unionism has affected them very much and 18 felt that it had some impact, vast majority did not feel so. Labour turnover also seems to be not a major issue in the coir industry. Just one respondent faced major problems due to labour turnover. Almost all the respondents rated quality and the skills of the employees to be good.

- B. 4.14.4 While most of the respondents felt that though the government is interested in the coir industry, 43 respondents felt that this interest has not been backed by favourable governmental policy. Twenty three respondents also opined that no specific schemes to improve the condition of the coir industry have been made by the government. Thirty seven respondents expected some form of financial support from the government.
- B. 4.14.5 Market related problems include competition, product substitution and low demand. Of the 97 respondents, 55 rated the competition as 'very high' or 'high'. Of the respondents surveyed, one fourth (24 units) felt that substitution of coir by other products is a major problem. Problems on the demand side seem to be not critical. Just 5 respondents felt that 'reduced demand' is a major problem.
- B. 4.14.6 On the technology side, availability of effective products is a major problem. While 34 respondents felt that the available technology is not as effective as expected, 14 felt that the price is high.

Figure No.4.18
Major Areas in Which the Coir Units Face Problems



B 4.15 Production and Consumption of Fibre

B 4.15.1 Kerala State has a total coconut production of 533 crores of nuts per annum. The coconut husk is being used for various purposes such as substitute for firewood, agricultural purposes and soil conditioning process besides coir production. Various applications of coconut husk reduce the availability of coconut husk for coir production. At present, about 30 per cent of the total available coconut husk is being used for coir production. Two methods of fibre production are in practice, thus producing retted and un-retted fibres. The total number of nuts used both in Co-operative and Private Sectors work out to 130 crores, giving a yield of 1,04,000 tonnes of retted fibre. The balance fibre is being used through de-fibreing system making the total availability at the current level of production of 1,30,000 tonnes of fibre. The production of Co-operative sector amounts to only 25 per cent of the total production of the retted fibre. The main reason attributing to these phenomena is the non-performance of Co-operative sector units. Against a demand of 2,45,000 tonnes of fibre, the units in the State are importing fibre from outside the State mainly from Tamil Nadu to tune of 86,000 tonnes. This results in a shortfall of 29,000 tonnes. The major entry points are Govindapuram, Gopalapuram, Parassala, Thenmala and Kumali, etc.

B 4.15.2 There is a decrease in the domestic production of fibre owing to the following reasons:

- Shift from coconut plantation to other crops
- Shrinkage in the retting area
- Change in the approach of workers towards the conventional retting process
- Spread of fungal diseases
- Application of coconut husk as industrial fuel
- Increased use of coconut husks for agriculture purposes
- Decrease in the productivity of coconut farming

B 4.16 Spread of Ratts and Looms

B 4.16.1 *Ratts*

B 4.16.1.1 There are 48,000 Nos. traditional ratts which are operational, spread all over Kerala. The majority of this operates in the coastal areas of the southern districts. Besides this, there are about 12,000 Nos. treadle motorised ratts and 5000 Nos. fully motorised ratts operating in these areas. The treadle motorised ratts are mainly working in Alappuzha district. The fully motorised ratts are spread over all the areas, however it is reported that only about 2000 Nos. of these are in effective operation.

B 4.16.1.2 The spread of the above type of ratts covers house holds, Co-operative Societies, Private Small Scale units, etc. While the traditional and treadle ratts are used in house hold and Co-operative Societies, the fully motorised ratts are used only in the organized factory set up.

B 4.16.2 *Looms*

B 4.16.2.1 There are about 28,000 hand looms spread all over Kerala, mainly concentrated in Alappuzha district. Power looms (automatic) and semi automatic looms are approximately 28 Nos. operating in large scale units in Alappuzha district.

B 4.16.3 *Defibring Machines*

B 4.16.3.1 Initially there were 50 defibring units in operation in Kerala. Subsequently some of them were closed down due to operational constraints. At present about 30 units are in operation.

B 4.16.3.2 The major problems faced by these units are the absence of a system for the effective utilization of pith generated during the process. The machines available with these units are found defective due to deficiencies in the design of the machine.

B 4.16.4 *Husk Beaters*

B 4.16.4.1 It is used to produce retted fibre in the conventional areas of operation replacing manual work. It is widely used in Alappuzha and Kollam districts. It will be a boon to the coir industry as the workers of late show some reluctance towards manual operation. Generally one unit will have one beater and it will be in operation for 250 days per annum. It is understood that nearly 800 machines are in operation in the retting areas.

B 4.17 *Logistic Support for Transportation*

B 4.17.1 Coir is a bulky product and is carried over long distances during various stages of operation. It includes:

- Transport of husk
- Transport of fibre
- Transport of intermediary products
- Finished goods

B 4.17.2 *Transport of Husk*

B 4.17.2.1 Husk is collected from the source of generation, that is the coconut growing areas which are wide spread in Kerala. But the major coconut producing areas are Kasaragod, Kannur, Kozhikode, Thrissur, Kollam and Thiruvananthapuram districts. In earlier days it was mainly by waterways, which was cost effective.

The shift to road transport reduced the movement time but increased the cost. In spite of being a low value item, the bulkiness of the product makes the transportation cost significant. Considering that the load per truck is 4 tonnes, it may be noted that the cost per kilometer is Rs.15 to Rs.18.

B 4.17.3 *Transport of Fibre*

B 4.17.3.1 The fibre is produced within the State as well as brought from outside by road and each truck load weighs approximately 4 tonnes. The cost of transportation is a major deterrent but the producers are opting for fibre produced outside the State only because of non-availability factor.

B 4.17.4 *Transport of Intermediary Products*

B 4.17.4.1 The intermediary products generally include, fibre, yarn and mats, both semi finished and finished. The entire movement is mainly dependent on the road.

B 4.17.5 *Transport of Finished Products*

B 4.17.5.2 The finished products of the coir include yarn, coir products such as matts and mattings, rubberised bed etc. The major markets are located within the State, outside the State and abroad. The products are being exported through Cochin Port through containers. The road movement is mainly between Alappuzha and Cochin Port for export.

B 4.17.5.3 The movement of products within the State is by road and outside the State is a duplex system of road and rail. The export of coir products from Kerala is 70,000 tonnes inclusive of all products. The balance 1,75,000 tonnes is being marketed within the State and outside. It is observed that the Private Sector units mainly thrust on road transport for movement of materials. Earlier days sea transport was

also made use of. At present, a substantial quantity of material is being transported outside the State through lorries which return empty after discharging their goods bound to Kerala, either on sharing or full load basis to the extent possible bringing in substantial saving in the cost of transportation.

B.4.18 Substitution of Coir Fibre

It has been observed that natural fibres such as Sisal, Jute, etc., are being used increasingly in combination with the coir fibre in various products. Jute bags and other products that do not contain coir are also being manufactured in Alappuzha district in place of coir products. Use of jute and sisal is more significant in the production of mattings. The practice is prevalent in all sectors like co-operative, private, unorganised and Government sectors. Maximum extent of substitution takes place in mattings for exports in which 60 to 80 per cent is substituted fibre. Since mattings account for 9.33% of the total exports of coir products, about 6.5 per cent of the value of total exports is contributed by other fibres. The extent of utilisation of jute/sisal in matting products is indicated in Table No.4.49.

Table No.4.49

Percentage Utilisation – Sisal and Jute

Sl. No.	Type of Firm	Nos.	Production in Sq.m.	Percentage of usage of substitute
1.	Co-operative Society	5	3,13,300	60
2.	Private Un-organised	7	3,00,800	80
3.	Government	1	80,000	65

CHAPTER V

WELFARE MEASURES FOR COIR WORKERS

5.1 Introduction of Welfare Board

5.1.1 In the year 1987, the Government of Kerala passed The Kerala Coir Workers Welfare Fund Act for the constitution of a fund to promote the welfare of coir workers in the State. Following this the Kerala State Coir Workers Welfare Fund Board was also established in the year 1987. The objective of the Board is to organise and provide facilities for welfare of the coir workers and monitor the utilisation of the fund provided by the Government as per the Act.

5.1.2 The fund is to be utilised for carrying out welfare measures for coir workers and self employed persons in the coir industry. A small part of fund amount is set apart as administration fund of the Board. To start with, 15 per cent of the expected total receipts for the first year of operation of the fund was provided and for subsequent years 15 per cent of the actual receipts for the previous year can be utilised.

5.1.3 The number of workers registered with the Board comes to around 2 lakhs. The Board is striving towards enrolling more workers under its preview. The expenses incurred for administering the fund such as allowances payable to the members of the Board, salaries, gratuities, pension legal expenses, cost of books, stationery and printing, telephone and telegram charges, all expenses connected with the instruction or hiring of buildings, purchase, maintenance and running expenses of vehicles are to be met from the administration fund. The Government can for valid reasons enhance or reduce the 15 per cent ceiling in any particular year. The following are the welfare measures or schemes which the Board is required to implement.

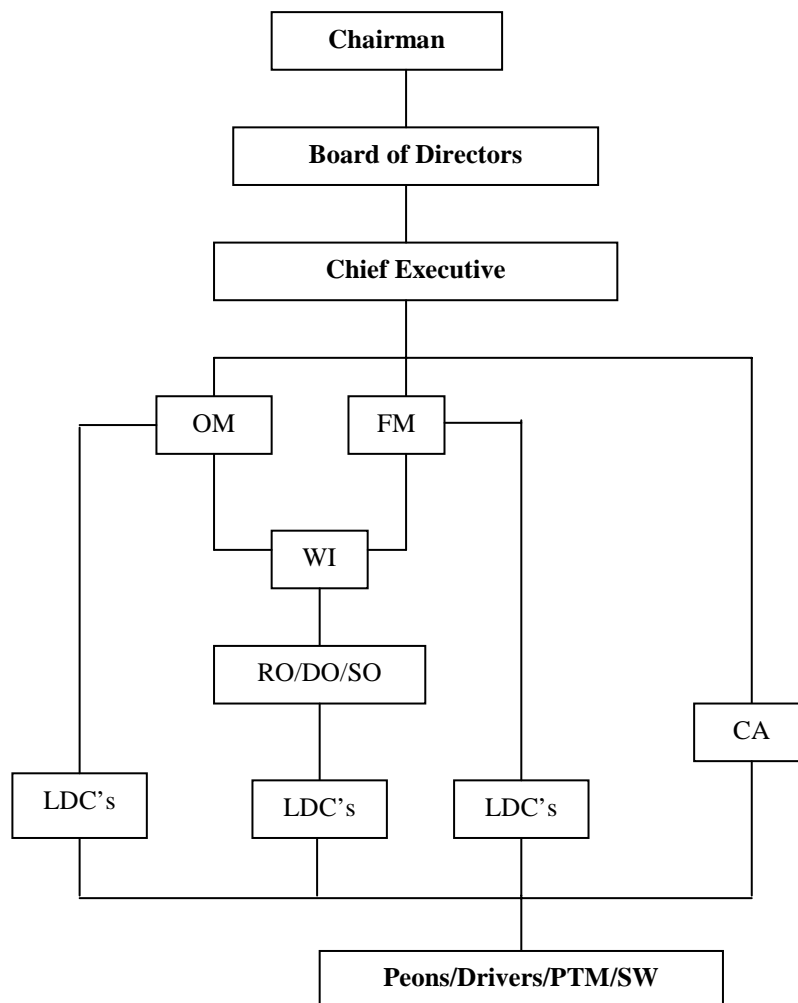
5.2 Details of Representation in the Board

5.2.1 The Board shall consists of 15 directors as may be appointed by the Government and they shall consist of:-

1. Five directors representing coir workers and the self employed persons.
2. One director each representing Govt. in the industries and Finance departments
3. One Director representing Coir Board.
4. Director of Coir Development
5. Chief Executive Officer of the Board
6. Five directors representing EXPORTERS, DEALERS, EMPLOYERS, PRODUCERS, of coir products and coir co-operative societies registered or deemed to be registered under Kerala Co-operative Societies Act 1969 (21 of 1969).

5.3 Organisational Setup

Management Structure





OM: Office Manager, FM: Finance Manager, WI: Welfare Inspector
 RO: Regional Officer, DO: District Officer, SO: Sub Officer, CA:
 Confidential Assistants
 LDC's: Lower Division Clerks, PTM: Part Time Menial, SW: Security
 Worker
 Number of Offices : 9

5.4 Coverage

The coverage of the Board has been given below:

1.	Total number of workers in the concerned sector in the State (2003)	Male	100,000	
		Female	400,000	
		Total	500,000	
2.	Total numbers of the scheme (as on 31.3.2003)	<35 years	Male	11760
			Female	47040
			Total	58800
		36-50 years	Male	16660
			Female	81340
			Total	98000
		51-60 years	Male	7840
			Female	31360
			Total	39200
		>60 years	Male	--
			Female	--
			Total	--
Grand Total	Male	36260		
	Female	159740		
	Total	196000		
3.	Members benefited (2002-03)	Male	26460	
		Female	149940	
		Total	176400	

5.5 Registration and Membership

Coir workers, self employed persons, employers, dealers, producers and exporters (as amendment of Section 13 of 1998) of coir products are eligible to become members in the establishment.



5.6 Contribution from Members

As per Section 3 of the Kerala Coir Workers Welfare Fund Act 1987 a Fund is constituted with the contributions from the following sections of the industry and government/government bodies as specified in section (4) and annexure to the Amendment Act 1998.

- a. Rs.5/- Per Month from each member coir worker
- b. Contribution from every employer, producer, dealer, exporters, societies of coir products as stated in the annexure to the Amendment Act 1998.
- c. An amount equal to twice the amount contributed by coir workers and self employed persons by way of grant.
- d. Grants or loans or advances made by Govt. of India, Govt. of Kerala, Coir Board or any institution.
- e. Donation from whatever source.

5.7 Source of Income to the Board

- | | |
|-------------------------|--|
| 1. Government of Kerala | Matching Grant-
twice the amount collected from
coir workers & self employed
persons. |
| Govt. of India | Voluntary contribution |
| 2. Employee | Rs.5/- per month |
| 3. Employer | As per Annexure 1 attached |
| 4. Others (Specify) | Donation/contributions from other
source/agencies |

Annexure No.1

Sl. No.	Category	Rate of Contribution
1.	Employers engaged in production of yarn Using spinning ratts: a. Traditional Ratt b. Motorised Ratt	Rs.30/- per Ratt installed or used Rs.25/- per Ratt installed or used
2.	Persons engaged in the extraction or production of fibre using defibering machinery from a. retted husk b. unretted husk	Rs.150/- Rs.500/-
3.	Persons engaged only in cleaning or curling of fibre using power: a. for willowing or cleaning unit b. curling unit	Rs.50/- per unit Rs.200/- per unit
4.	Persons engaged in the production of coir mats, Mattings and carpets using: a. handlooms producing mats b. handloom capable of producing mattings of width upto and including three meters c. handlooms capable of producing mattings of width above three meters d. semi-automatic looms e. automatic looms or powerlooms	Rs.60/- per loom Rs.240/- per loom Rs.480/- per loom Rs.900/- per loom Rs.1200/per loom
5.	Persons engaged in the production of rubber backed coir products including those carrying out job work utilising a. hand press only b. power press	Rs.100/- per unit/factory Rs.250/- per unit/factory
6.	Persons engaged in the production of rubberised coir products including rubberised coir mattresses and PVC, rubber, foam, synthetic foam or any other foam backed coir products.	Rs.15000/- per unit/factory
7.	Persons engaged in sheering, stenciling and other finishing work of coir products	Rs.1500/-
8.	Persons engaged in the production of coir products not specified elsewhere: a. for installed capacity in terms of value of production upto and including rupees one lakh b. for installed capacity in terms of	Rs.500/- Rs.1500/-

	<p>value of production above one lakh and upto and including rupees ten lakhs</p> <p>c. for installed capacity in terms of value of production above rupees ten lakhs and upto and including rupees fifty lakhs</p> <p>d. for installed capacity in terms of value of production above rupees fifty lakhs</p>	<p>Rs.3000/-</p> <p>Rs.10000/-</p>
9.	Dealers of husk	Rs.50/- for every 50000 Nos. Husks or fraction thereof
10.	Retters of husk	Rs.25/- for every 50000 Nos. Husks or fraction thereof
11.	Dealers of fibre, pith, yarn or coir products	Rs.100/- per Rs.1,00000 or part their of the annual turn over, subject to a minimum of Rs.260/-

5.8 Benefits Granted to Coir Workers

5.8.1 Eligibility

The persons eligible for assistance under these items are:

- i) A member of the fund, who has completed the age of sixty years or who is unable to work due to old age or infirmity provided he had valid membership at the time of completing the age of sixty years or occurrence of infirmity and
- ii) A person who before commencement of the Act was a coir worker or self-employed person and who completes the age of sixty years or who suffers from permanent disablement and is out of employment.

5.8.2 Payment of Pension

5.8.2.1 Payment of pension to persons in category

- i) shall be payable from the month succeeding the month in which the coir workers/self-employed person completed the age of sixty years or became unable to work due to infirmity or permanent disablement and arrears till date of sanction will be paid along with the first payment of pension.

5.8.2.2 Payment of Pension to persons in category

- ii) Shall be payable with effect from 1st April 1987 and the arrears till the date of sanction will be paid along with the first payment of pension.

The amount of monthly pension is fixed at 100 rupees only. The pension is to be sent by money order to the pensioner on the first working day of the succeeding month. The money order charges will be met by the Board. The pension shall cease to be payable in the event of death of the pensioner. Arrears of pension, if any, shall be paid to the surviving spouse and in the absence of surviving spouse to legal heirs.

5.9 Family Pension

Persons eligible for assistance under the family pension scheme are:

- i) Eligibility
 - a) spouse of a deceased coir worker or a self-employed person who had valid membership in the fund at the time of his death.
 - b) spouse of a pensioner under the scheme.
- ii) The amount of family pension is Rs.75/- per month only.
- iii) The family pension to the spouse of a deceased member becomes payable from the month in which the death of the member takes place.
- iv) The family pension cease to be payable in the event of the death or remarriage of the family pensioner.
- v) The family pension is to be sent by money order as far as possible, on the first working day of the succeeding month.

5.10 Financial Assistance to a Member who suffers from Permanent or Temporary Disablement

5.10.1 The assistance under this scheme is in the form of grant.

- i) It is paid only to a member who has valid membership at the time of occurrence of disablement.

- ii) The amount of financial assistance in the event of permanent disablement incapacitating the coir worker or self-employed person from continuance of his work is fixed at Rs.2,500/- (Rupees Two thousand and Five hundred only) or an amount equal to Rs.100 (Rupees One hundred only) per month for the number of months remaining for the coir worker or self-employed person concerned to complete sixty years of age whichever is less. The assistance under permanent disablement is to be paid only once in the lifetime of a member.
- iii) The amount of assistance for temporary disablement is fixed at the rate of Rs.100 (Rupees One hundred only) per month during the period of disablement subject to a ceiling of Rs.300/- (Rupees Three hundred only) in a year. No assistance under this scheme is available if the period of disablement is for less than one month.
- iv) The financial assistance under permanent or temporary disablement is to be paid only against certificate issued by a qualified medical practitioner in Government service not below the rank of an Assistant Surgeon.

5.11 Financial Assistance to the Spouse of a Member meeting with a Fatal Accident.

The assistance extended will be as follows:

- i) The amount of assistance under this scheme is fixed at Rs.5000 (Rupees Five thousand only) and it is in the form of grant which is available in the event of accidental death of a member.
- ii) This assistance is given to the spouse of the member having valid membership at the time of occurrence of the fatal accident.

5.12 Financial Assistance to meet the Expenses in connection with the Funeral of the Father, Mother, Spouse or Children of the Member

- i) The assistance under this scheme is fixed as Rs.200/- (Rupees Two Hundred only) in each case and it is in the form of grant.



- ii) It is to be paid only to a member who has valid membership.

5.13 Reimbursement of Medical Expenses of the Member or His Family

5.13.1 The reimbursement will be as follows:

- i) The assistance under this scheme is in the form of grant and it is limited to Rs.350/- (Rupees Three hundred and fifty only).
- ii) The assistance is available for the medical treatment of the member, his/her father, mother, spouse, sons, daughters and dependent grand children. But this assistance is not available to sons or daughters who are married and settled as separate families.
- iii) The amount is to be reimbursed only against bills certified by a qualified medical practitioner in Government service not below the rank of an Assistant Surgeon.
- iv) The assistance under this scheme is to be given only to those members who are not eligible for medical assistance under any other schemes like Employees State Insurance.

5.14 Payment of Scholarship or Stipend for Post-Metric Education

5.14.1 The education assistance will be as follows:

- i) The assistance under this scheme is to be available to the children of the members having valid membership at the time of application for undergoing post-metric education including vocational and technical training subject to a ceiling of Rs.500/- (Rupees Five Hundred only) per annum per student. In the case of those studying in Engineering or Medical or Veterinary or Agricultural Colleges, the annual limit is Rs.1500/- (Rupees One Thousand Five Hundred only).
- ii) The assistance is to be given in the form of grant.

- iii) Subject to prior approval of the Government, the Board is supposed to earmark the annual provision of funds under this scheme for each category of course and the assistance in any year is to be limited to the funds set apart.
- iv) The criteria for selection of scholars is based on the marks obtained in the qualifying examination for selection to the course.

5.15 Payment of Financial Assistance for Maternity Purposes to a Woman Member

5.15.1 The payment will be as follows:

- i) The financial assistance under this scheme is Rs.300/- (Rupees Three Hundred only) at a time.
- ii) The assistance will be in the form of grant and will be extended to women members having valid membership.

5.16. Payment of Financial Assistance for the Marriage of Daughter of the Member

The assistance for the marriage will be given as follows:

- i) The amount of assistance under this scheme is fixed at Rs.1000/- (Rupees One thousand only) and it is to be given as grant to a member having valid membership.
- ii) This assistance to be given only once for the marriage of any daughter, unless the second marriage is owing to the death of the first husband.

5.17 Suggestions for Improved Welfare Measures

For improving welfare measures for coir workers a number of scheme can be designed and implemented. A few of them are:

- The number of registrations of workers should increase and efforts should be undertaken in this direction.

- Issues such as housing and education should be given priority in the context of welfare measures. Schemes for payment of fees for higher education may be worked out. Schemes for construction and renovation of houses, work sheds etc. may be considered.
- Health, sanitation and hygiene are important issues. For women workers in particular, nursery and creche facilities should be provided. A scheme of health insurance may be worked out by the Board especially for women workers in the coir industry.
- Schemes which provide financial assistance for training on traditional motorised ratts for women can be worked out. In addition, financial assistance may be provided to women for purchase of ratts.
- The provision for old age pension for coir workers should be increased. It is very meager at present.
- All shareholders, namely workers, Government, exporters and producers should contribute their shares on a regular basis to the Welfare fund to ensure that coir workers can benefit from the fund.

5.18 The workers being stagnant at the entry level the motivation among them for performance is poor. They generally lack the working knowledge and development achieved in the sector. The isolated workers often possess a negative aspect on their industry. This is one of the major reasons for the present position. To tideover the situation it is essential:

- To impart training to workers for better performance and motivation.
- To educate the concepts of savings through concepts like thrift.
- To reorganise the working of coir units in such a way that a vertical mobility is possible for the eligible workers.

CHAPTER - VI

PRO-ACTIVE APPROACH

6.1 Present Scenario

6.1.1 Coir is one of the major traditional industries of the State employing more than 3.60 lakh of persons with a predominance of female labour, needs a growth-oriented strategy. The contributions of the Coir Sector are important to the economy of the State. The outstanding features of the coir industry are:

- Widely spread in all the coastal districts
- Products are enviro-friendly
- Value addition significantly contributes to the economy of the State.
- Earns valuable foreign exchange through exports
- Substitutes many environmentally unfriendly products

6.1.2 Though the coir sector got developed as Industry in the middle of 19th Century, it is yet to catch up with other sectors in terms of technology, economic aspects and productivity. Notwithstanding the positive features, the industry has not been performing in a healthy manner, due to associated problems, which are mainly socio-economic. Hence, a holistic and innovative approach is needed for an accelerated and healthy growth of the sector. The areas requiring improvement or changes in approach are:

- System and methods of husk collection
- Extent of mechanisation in fibre production
- High level of dependence on nature in the retting process
- Hesitation to popularise improved gadgets or machines for spinning

- Absence of norms for productivity and recognition of quality
- Inability to meet specific requirements of foreign buyers especially for high value and more environment friendly products
- Indifference to technology absorption.
- Lack of initiative to systematise and acquire international quality accreditation to enjoy the confidence of buyers.
- Inadequate training for skill upgradation.

6.1.3 The processes involved in the coir sector can be segregated as upstream and downstream segments. The activities that fall in the upstream side include:

- Husk Collection
- Retting
- De-fibering
- Spinning

6.1.4 The activities in the downstream include:

- Weaving
- Dyeing
- Product manufacturing
- Packing and shipping

6.1.5 The growth and sustainability of growth of the sector as a whole demands a tandem approach based on through analysis of the problems and shortcomings in the upstream as well as the downstream activities. Both are to be developed and operated with higher levels of efficiency and economy so as to balance each other and optimise costs. If upstream side activity is not streamlined, it will result in:

- Inadequate availability of husk
- Inadequate availability of fibre

- Inferior yarn quality
- Environmental problems.

6.1.6 If the downstream activities are not given due attention, it will result in:

- Imbalance between yarn availability and demand for finished products
- Imbalance between sales and production
- Rejections in quality checks
- Low productivity due to lack of planning
- Environmental problems

6.2 **Development Strategy**

6.2.1 Development strategy should encompass all the segments such as retting, defibering, spinning and product manufacturing. To evolve a growth oriented strategy each activity is to be critically examined protecting the present socio-economic aspects but targeting value addition, productivity improvement and sustaining quality with a futuristic vision. The possibilities and constraints have to be evaluated and the most suitable ones are to be adopted.

6.2.2 ***Husk Collection***

6.2.2.1 During the survey it has been observed that there is no organised system for the husk collection as well as for logistic support. The units in the State face shortage of husk, considering the fact that the fibre content has gone down by 22 per cent due to spread of disease on the crop. It is to be noted that the present yield of fibre per 1000 husk is 85 kg against 110 kg earlier. To improve the situation the following measures are to be considered.

- Development of an organised collection system with logistic support

- Collaboration of agencies like Kudumbashree for husk collection
- Concerted effort in liaison with Agriculture Department to increase coconut production and control of diseases on plant and crop.

6.2.3 *Retting*

6.2.3.1 At present, the labour availability, unpleasant working environment, risk to occupational health and environmental limitations do not encourage expansion of traditional activities. However, before containing the operations a detailed environmental impact assessment (EIA) to study the carrying capacity and labour working conditions is to be carried out and expansion plans made consistent with findings of this study.

6.2.3.2 If the present retting process is limited to the present level of operations, further growth can be planned only on alternative methods of fibre separation. By changing the concept the flow of husk are to be directed towards defibering centres. Mobile defibering units can also considered. When it is decided to set up alternative processes, the locations need not necessarily be limited to the back waters region. Defibering units can be best set up in places determined by availability of husk and logistics of collection and movement and availability of infrastructure.

6.2.3.3 Alternative de-fibering process may be based on mechanical defibering or bacterial process also may be developed and promoted commercially. This will improve productivity in terms of time and money and will also ensure conducive working conditions.

6.2.4 *Spinning*

6.2.4.1 A plan to widen spectrum of defibering units is essential to increase the yarn production through mechanised spinning units in an organised commercial

manner. When defibering units are established in non-traditional areas such mechanised spinning units may also be established there. To achieve improved performance the following methods are to be adopted.

- Organised production methods
- Commercialisation of activity
- Control of product quality for consistency
- Productivity improvement

6.2.4.2 However enough care should be taken not to disturb the production process of traditional areas.

6.2.4.3 It is a problem observed that many varieties of coir in the traditional sector are disappearing on introduction of mechanised spinning. So to maintain traditional varieties or equivalent development of suitable spinning machines and techniques are essential. To compete in the market proper specifications and standards are to be developed and implemented. A factory based production system will be helpful to achieve the objectives of increased production. By developing the machine spinning it is possible to fetch a premium price for the hand-worked products that are exported.

6.2.5 ***Bleaching and Dyeing***

6.2.5.1 Bleaching and dyeing operations are done both in the organised and unorganised sectors. Of late though the level of technology has improved in the organised sector, the unorganised sector remains unchanged. The consistence of quality is rated poor in the unorganised sector bringing loss of reputation to the industry. The indiscriminate use of chemicals and waste disposal without treatment is harmful to the environment. Solution to this problem is establishment of Common Facility Centre for bleaching and dyeing, with proper system for treatment of effluents.

6.2.6. *Production Units*

6.2.6.1 Mats, mattings and beds constitute bulk of products manufactured in the sector. It often finds difficult to meet the challenges posed by other natural fibres like sisal and jute, where the market acceptability and product range are better when compared to coir. Hence, methods are to be developed for better quality products with product diversification highlighting the positive characters of coir fibre. Efforts should be made for the mixed coir products, popularising the commercial production of organic manure from coir pith, promoting enviro-friendly products like coir ply and soil conditioning products.

6.2.7 *Packaging*

6.2.7.1 It has been observed that due attention for packaging is not being given. This hampers the financial performance of the industry. To have better price and to enhance customer appeal it is now time for the industry to go for packaging system. For this the services of Indian Institute of Packaging can be availed of.

6.3 **Making Kerala a Hub**

6.3.1 Kerala is endowed with a good supply of coir fibre with a long tradition spanning nearly two centuries. With the factory based production system, Kerala can be made a centre of coir industry for the entire world. The development plans/schemes should be conceived and implemented in such a way as to utilise the maximum of available inputs into a product mix that brings optimum realisation. This should encompass all the areas of the coir sector including associated areas as broadly listed below:

- Co-ordination with the Agricultural sector for facilitating yield of coconuts and control of infestations such as 'Mandari', that adversely affects the quality of husk and resultant yield of fibre
- Organising methods for improving the logistics of husk collection to maximise utilisation and for obtaining more green husk
- Planning and establishing retting and fibre production centres based on modern methods and scales of operations in places other than traditional retting centres, without causing adverse impact on the operations carried out in traditional retting areas.
- Establishing organic fertiliser producing units utilising the coir pith released from traditional and non-traditional defibering processing centres. Such utilisation improves the economics of the retting and defibering operations
- Fixation of minimum economic sizes of mechanised spinning units for improving quality, productivity and economics.
- Training for workers in modern processing operations
- Introduction of schemes to attract the younger generation to the industry
- Establishment of research and development centres for product development and productivity improvements.

6.4 Cluster Development

6.4.1 The cluster development scheme promoted in association with State Bank of India (SBI) is in operation in the District of Alappuzha. However it will take some more time to assess the effectiveness of this scheme. Subject to tangible results coming out of this, the scheme can be extended to other areas in the State, modelled on Peoples Planning Programme. This will enable improved availability of fibres and yarn of higher quality for downstream operations.

6.5 Common Facility Centre

6.5.1 Most of the coir units are in the small scale sector. This often hinders to the manufacturer in using new technology and concepts where consistency of inputs is critical. To avoid such a situation common facility centres are to be established considering the economic viability. The centre may provide the following facilities.

- To design new products using CAD.
- To test the products
- To carry out operations like dyeing economically

6.5.2 To achieve the above objectives the Common Facility Centre should have the following

- Computer aided Design Centre
- Testing Laboratory
- Model Production Centre
- Dyeing Centre
- Training Centre
- Data Centre

6.6 Self Help Groups

6.6.1 The SHGs were formed under the initiative of National Bank for Agriculture and Rural Development (NABARD). This is a step in the right direction to ensure social justice and a due compensation to the coir workers in the unorganized sector. The concept of SHG is widely accepted throughout India in many fields. Even in Kerala the Kudumbashree has designed and developed by involving SHG in their activities. Hence it is now time to establish SHGs in all the districts,

particularly in coir sector. To achieve a healthy operational growth and to ensure equitable opportunities a regional based committee is to be formed.

6.7 Institutional linkage for Technology Implementation

6.7.1 The present problem of the industry rests on the shortage of technology support. To overcome this problem a linkage with technical and management institutes is essential for the conceptualisation, development and implementation of technological innovations. The major objectives of such linkages are:

- To study the total management related to coir industry including life cycle management of macro (total) and micro (individual) systems.
- To develop an operational structure for ensuring the sustained supply of raw materials to the industry.
- To conduct basic technological studies and strategic research on Coir Fibre to generate Scientific, Physico-Chemical, Engineering and Textile properties of major coconut variety wise fibres from different agro-climatic regions.
- To evolve appropriate technology for enhancing quality by up-gradation, softening/strengthening, increasing durability etc., and increase productivity and improve quality of fibre and yarn.
- To evolve a suitable technology to eliminate environmental pollution and health hazard to the workers, population living in the vicinity and to protect the water bodies and atmosphere in the coastal region from pollution during the process of setting up any other activity.
- To develop diversified and value added products including products for high-tech industrial use for domestic and international market viz. yarns or any other form with value addition and of high quality for various uses.
- To find out diversified economic use of bye-products of coir industry viz. coir pith and industrial waste.

- Modernisation of the coir fibre industry with affordable high-tech machines to produce high grade fibers final products.
- Evolution of decentralised rural based technology using the state of the art coir mini-spinning machines by identifying weakness in the present systems
- To bring in improvements in defibering machine with further improvement for better cleaning, grading of the fibre, etc.
- To develop more diversified products such as geotextiles, and coir composites, identifying appropriate specific areas for their sustainable application and production of diversified products in rural areas with blends/treatments with other natural/synthetic fibres (woven and non-woven).
- To develop a life cycle marketing structure and strategy in the coir sector of Kerala.
- Human Resource Development comprising training programmes, interactive workshops, seminars, etc. involving scientists and entrepreneurs, need based publicity awareness programmes, application of Information Technology, on the job training for entrepreneurs to improve the adaptability of industry in accordance with the changing face of market demand and engineering infrastructural needs, etc.
- To have management information studies related to coir industry including application of commerce in development of coir marketing.

6.8 Establishment of Special Economic Zone

6.8.1 Establishment of Special Economic Zone (SEZ) in the coir sector is a new idea to be explored. Since large business houses in India and multinationals are not present in the present scenario, establishment of a Coir based SEZ could attract such houses to establish facilities for manufacturing value added products with the state-of the art technology and higher scale of operations. This could even

indirectly influence the present trader-exporters to manufacture goods under stringent quality control in a healthier and competitive environment. Once the SEZ is established the manufacturers within the zone will be able to liberally import the right technology and the right quality of inputs for making composite products that bring more income. This will in turn facilitate rolling out more products and import of fibre which is in short supply.

6.8.2 Establishment of a SEZ could also induce a product quality approach in their scope of manufacturing. This may also entail change in the concept of upstream and downstream operations. Instead of starting with yarn, the units may also include yarn making as part of their operations as they will be able to make them consistent with quality and to suit the needs of end products.

6.8.3 SEZ is also bound to make an impact on the upstream side activities and the economy of the State as a whole including more sustained employment to the population directly employed in the Zone as well as the coir sector in general.

6.9 Management Approach

6.9.1 A well concerned designed and developed strategy is to be evolved to convert the coir sector enabling to meet the challenges of the present and future:

- Product diversification
- Development of market driven products
- Alternative strategies in procurement, manufacturing and production
- Efforts for implementing quality assurance systems.
- Development of new logistic concepts in raw material procurement storage and delivery
- Development of the concept of raw material bank to make it more effective.
- Reengineering the working of coir sector for an overall positive change.

- Establishment of training centres for technological and managerial inputs at the worker level, supervisor level and managerial level.
- Development of management information system linking with various production and communication centres for data based scientific development
- A warehousing network at various locations in the State, supported on computer based information system for the movement of raw materials, semi-finished products and finished products throughout the State and also to the market destinations.
- Implementation of unit friendly credit policy for procurement of raw materials and export.
- Introduction of suitable financial package to reactivate sick units with potentials to rehabilitate.

6.10 Outsourcing

6.10.1 The concept of outsourcing is widely accepted all over the world. The main aim is to minimise the product cost, maximise quality and improve the delivery time. This concept has got good prospects in the coir industry. A number of operations can be outsourced. This will reduce the cost of project at the same time provide working opportunity to other units. This will also help keep the costs down while serving the society in many a ways. That means it is a society oriented approach. The operations like spinning, weaving, dyeing and design, etc. can be outsourced.

6.11 Research and Development

6.11.1 During the survey it has been observed that many units lack the facilities for research and development. A centralised research institution modeled on SITRA can be considered essential. The service of experts in the field of textiles and jute are needed for product diversification. The institution can develop and obtain

patent for their works. This will lead to product diversification, product innovation and value addition.

6.12 Consortium

6.12.1 At present there is a lack of a forum for the people in industry for discussion on product upgradation and betterment of industry as well as to present their problems at the appropriate levels. Hence a consortium of non-governmental organisation on the lines of Confederation of Indian Industry (CII) can be mooted to bring professionalism in the sector.

6.12.2 In brief, it should be kept in mind while conceiving, designing, developing, implementing and practicing the projects and programmes for the development of coir industry, it should be kept in mind that coir at present is a low value and high volume item. Hence, efforts should be made for increasing the productivity while achieving higher level of production. However, due attention shall be paid to convert the coir products systematically over a period of time to a high value item.

6.13 Market Promotion

6.13.1 Coir sector includes both domestic and export markets. The domestic market is more prominent in terms of value and quantity. But to sustain in the market and to increase the market share of the State by 10 per cent at a conservative scale in a programmed manner during the next five years arresting the sliding tendency of the present a multi-pronged strategy is to be adopted ferociously. To attract the units in market development and business promotion the following steps could be adopted.

- Unit friendly financial packages for export promotion
- Assistance for participation in trade fairs
- Organising B2B International Conference in the State

- Promotion campaign in the potential areas in their country
- Effective use of web-based portals for market promotion
- Standardisation of tariff for exports
- Development of logistics supports like warehousing.
- Steps for better market sustainability

6.14 **Product Segmentation**

6.14.1 Coir industry, dominated overwhelmingly by handmade products, does not benefit from the present trends and market demand. There is no premium realised for hand made products, though there is demand for such products. In order to get a premium price a product segmentation is to be adopted for analysis, product application and of production.

6.15 **Strengthening Co-operative Set Up**

6.15.1 Co-operative sector is a vital element in the coir sector. They function from the procurement of husk to marketing of products. It ensures fair wages to the workers and prevents exploitation. But, of late, the co-operative sector is not as effective in the past. A co-operative venture in the model of AMUL will be a boon to the coir workers. The areas to be strengthened in the co-operative sector are:

- Management
- Professionalism
- Technology transfer
- Product development
- Enlargement of workers base
- Financial position
- Linkage with national level co-operatives

6.16 Information System

6.16.1 One of the major problems faced in the coir sector observed during the survey is the paucity of information. The units in general do not have a proper management information system to monitor their working. Most of the units find it difficult to take strategic decisions in the absence of data. To avoid this a management information system and documentation are to be implemented. The Coir Board can extend necessary assistance by way of consultancy or financial assistance for obtaining external assistance.

6.16.2 The dissemination of information is an area neglected by this sector. As a result most of the small scale units are unaware of the developments that have come about in coir or allied sector. A periodical publication is a tool that can be considered for data circulation. The consortium proposed for the sector can bring out these publications in a professional way.

6.17 Welfare Measures

6.17.1 It has been found in the survey that the workers in the coir sector especially in the upstream side are suffering from certain diseases. The younger generation is reluctant to undertake such work. Employees lack training and are working without protective gears in sensitive areas. It is no doubt that the development based approach will benefit not only the industry but also mitigate the hardship of workers. The problems that requires attention are:

- Poor health condition
- Inability to meet medical expenses both during the service period and retirement period.
- No income during the post employment period.

6.17.2 To ward of such a situation and to ensure better living condition the following steps are suggested:

- Introduction of Health Card for periodical medical check up
- Group Medical Insurance scheme to meet medical expenses during the working period as well as post-employment period for the workers and his/her family.
- A scheme through insurance companies for payment of pension after attaining the superannuation for the employee and his/her spouse after death.

6.17.3 The above measures would be possible only through statutory provisions.

6.18 Credit Scheme

6.18.1 The financial assistance and packages at present are not really tailor made to bring improvements in the coir sector. The specific schemes available exclusively for the co-operative ventures are designed and developed by NCDC. The outlay of NCDC scheme is Rs.44 crores. Because of the lack of growth oriented funding schemes, the units often face paucity of funds for technology upgradation and expansion programmes. The major source is the budgetary support for revival of primary, co-operatives, secondary production units, etc. on an annual basis. Hence to meet the challenges, growth oriented support packages are to be incorporated to the existing schemes. Some of the measures suggested are:

- Locating raw material banks (RMB) at strategic places. The raw material will include basic raw materials, semi-finished products, etc.
- Declare coir sector as the most favoured thrust area and thereby increasing credit flow including subsidy to the sector.
- Soft loan packages for expansion and modernisation

- Financial assistance for obtaining ISO certifications/international accreditations.
- Financial support for implementing energy saving schemes
- Creation of an international organisation/ funding agency for natural fibres for financial assistance and technology development as in the rubber sector.
- Provision for foreign direct investment (FDI) for the units coming in the SEZ proposed
- An evaluation and monitoring set up to assess the funding and resultant performance is to be established.

6.19 Financial Outlay

6.19.1 To achieve a sustainable growth, it is highly essential to adopt a planned strategy of systematically implemented credit flow linking up-stream and down stream activities. The objective of the development programme as aforesaid is:

1. To increase the husk availability
2. Implement technologically updated units
3. Providing gainful employment to the coir workers

6.19.2 This will not only be a solution for the present problem such as low productivity, fibre shortage, etc. but also a requirement for sustained growth. The production of coconut in the State has recorded an annual average growth rate of 1.5 per cent in the last five years and it is also expected that this trend will continue in the years to come through productivity improvement measures. At present, the production of coconut is estimated at 533 crores of nuts which is expected to be increased to 573 crores with the projected growth pattern.

6.19.3 The present husk utilisation will work out to 30 per cent and steps should be initiated to increase this at an annual growth rate of 5 per cent through an integrated strategy of development with the association of SHGs and

Kudumbasree programmes. The husk availability for fibre production therefore will be 40 per cent of the total at the end of 5 years from now which will be 40 per cent of 573 crores ie., 229 crores. The fibre production from this @ 80 kg per 1000 husk will be 1,85,000 tonnes. The incremental quantity will be 55,000 tonnes. The shortage of fibre in the existing operations is 29,000 tonnes. Therefore the extra fibre that will be available for new facilities to be created will be 26,000 tonnes. The cost estimate of the schemes has been worked out based on the above.

6.19.4 *De-fibring Units*

6.19.4.1 To produce 55000 tonnes of fibre, 150 de-fibring units are to be installed. Based on the estimates more than 100 Blocks of the State can be covered and at least one de-fibring unit can be provided in one block. The scheme for implementation is taken as 5 years i.e.30 de-fibring units per annum at a cost of Rs.40 lakhs per unit. The total requirement per annum is Rs.12 crores.

If it is possible to commercialise alternative retting processes that are under development; a part of this additional capacity may be achieved through the improved retting process.

6.19.5 *Spinning Units*

6.19.5.1 Mechanical spinning units are essential at the present level of technology. It can be seen that the first two years of implementation phase (Phase-I) will be required to meet the present demand and hence the balance 26,000 tonnes can be processed during the subsequent three years (Phase-II) by installing 300 units @ 50 machine per unit. The total cash outlay requirement is Rs.75 crores at the rate of Rs.25 crores per annum.

6.19.6 *Weaving Units*

6.19.6.1 To utilise 26,000 tonnes fibre produced additionally after meeting the present shortfall, it is expected that there is a requirement of 350 semi-automatic looms in the second phase of 3 years. The expected amount to be spent annually is Rs.25 crores to install weaving units, after giving provision for use of yarn in other areas. The total requirement will be Rs.75 crores.

6.19.7 *Organic Manure*

6.19.7.1 After achieving the targetted growth, the State will produce 1,85,000 Tons of fibre generating 3,70,000 tonnes of pith which will cause environmental problems if not converted to useful products such as manure. Considering the utilisation of pith from newly installed facilities entirely for organic manure, there is a potential for using 2,40,000 tonnes of pith. This emphasises a scope for 600 units in the next 5 years requiring an investment of Rs.150 crores. The capacity estimated for one unit is 400 tonnes of pith.

6.19.8 *Design And Training Centre*

6.19.8.1 It has been observed that new designs and patterns are not introduced in the industry as in other fibre sectors. Hence, to rectify the lapses a Design centre with CAD/CAM facility is essential and the cost for such a centre including land and building, software, etc. is estimated at Rs.100 lakhs.

6.19.9 *Common Facility Centre*

6.19.9.1 To assist the small manufacturing units by providing technical improvement and quality input the common facility centres are to be located at the major producing centres. Such facilities are lacking in the districts of Thiruvananthapuram,

Kollam, Thrissur and Kozhikode. The cost of one centre with facilities for dyeing, weaving etc. will work out to Rs.3 crores. Cost of five such centres will be Rs.15 crores.

6.19.10 *ISO Certification*

6.19.10.1 It is highly desirable that all units in the organised sector adopt quality management systems. This will improve the quality of products and services and hence the marketability. It is estimated ISO Certificates can be obtained by 500 units coming under the organised sector. As a first step towards getting international accreditation 20 per cent of the units should be facilitated in the first phase at a cost of Rs.1 lakh per unit. The Coir Board may consider extending an appropriate subsidy to the units eligible in addition to the schemes in practice. The amount required to be spent by the Board for the certification is estimated at Rs.0.50 lakh.

6.19.11 *Logistic Support*

6.19.11.1 The storage of husk and fibre is a problem either at the generating station or at the application centre. To avoid such difficulties a logistic support facility is proposed at 5 places. The locations can be decided after a logistic study. The godown facility is expected to have an area of 5,000 Sq.m. The cost estimated to set up the logistic support is Rs.5 crores for one centre. The total expected outlay will be Rs.25 crores.

6.19.12 *Turnaround of Sick Units*

6.19.12.1 The total funding assistance in the co-operative is Rs.50.08 crores through NCDC. But a significant number of units are ailing for various reasons. Hence to

turnaround these sick units by appropriate revival package an amount of Rs.12 crores is proposed for the next five years.

6.19.13 *Technological Upgradation Fund*

6.19.13.1 To improve the performance of the present units by providing system and facilities for technological upgradation an amount of Rs.12 crores is estimated for the next five years.

6.19.14 *Training and Development*

6.19.14.1 As a part of modernization, quality of human resources is also to be improved. To achieve this mission an amount of Rs.4.50 crores has been provided for training and development, which may include specialised training outside India.

6.19.15 *Fund for Market Development*

6.19.15.1 To boost the sales performance, it is a must to have a multi-pronged strategy such as

- ◆ Expansion of sales outlet network
- ◆ Renovation of existing show rooms in line with the changing trends at the rate of 25 numbers in a year.
- ◆ Computerisation of sales network of different agencies.
- ◆ Setting up of coir malls in metros.
- ◆ Training for improving new market concepts among the professionals.
- ◆ Conducting five regional and one national trade fair once in a year and bi-annually international trade fare.
- ◆ Organising tours for the professional and entrepreneurs to make the aware of the latest trends in the natural fibre sector abroad.

6.19.15.2 To meet the expenses for the above programmes by way of grant, subsidy and soft loans an amount of Rs.25 crores is estimated for the next five years.

6.19.16 *Special Economic Zone*

6.19.16.1 To find a solution to the problem generated on account of the fibre shortage it is appropriate to set up a Special Economic Zone exclusively for the Coir and Coir related products. This will enable the units to buy inputs from within the country or import at international prices, carry out the value addition and export the finished products giving a fillip to the export. The minimum area required for such Special Economic Zone is 100 acres and the preferable location will be Alappuzha District. On the assumption of a land value of Rs.25,000 per cent, the cost of developing a special economic zone providing roads, drainages, compound wall, effluent treatment plant of 50,000 litres capacity per day, etc. will be Rs.70 crores.

6.19.17 *Total Cash Flow*

6.19.17.1 The total financial outlay projected for the next 5 years is Rs.525 crores as summarised in Table No.6.1. The basic assumption is that the production of fibre will be increased by 55,000 Tons at a CAGR of 6 per cent. The expenditure on SHG and the formation and the development of Kudumbasree units, creation of Technology Centre, etc. has not been included as they already form a part of the ongoing schemes of State Government with budgetary support. It is expected that on implementation of schemes envisaged, there will be an additional employment potential for 50,000 persons. In addition to this it will provide additional days of employment for the existing employees.

Table No.6.1
Financial Outlay

(Rs. Crore)

Sl.No	Activity	Year					Total
		1	2	3	4	5	
	Defibring	12.0	12.0	12.0	12.0	12.0	60
	Spinning	-	-	25.0	25.0	25.0	75
	Weaving	-	-	25.0	25.0	25.0	75
	Organic Manure	30.0	30.0	30.0	30.0	30.0	150
	Design Centre	0.1	0.4	0.5	-	-	1
	Common Facility Centre	3.0	3.0	3.0	3.0	3.0	15
	ISO Certification	0.1	0.1	0.1	0.1	0.1	0.5
	Logistic Support	2.5	7.5	5.0	5.0	5.0	25
	Sick Unit Revival	1.0	2.0	3.0	3.0	3.0	12
	Technology Upgradation	1.0	2.0	3.0	3.0	3.0	12
	Market Development	3.8	6.8	3.8	6.8	3.8	25
	SEZ	1.0	30.0	20.0	19.0	-	70
	Training and Development	0.5	1.0	1.0	1.0	1.0	4.5
	Total	55.0	94.8	131.4	132.9	110.9	525

CHAPTER VII

CONCLUSION

7.1 Preface

7.1.1 Coir is the traditional industry of the State providing direct employment to 3.60 lakhs people. Most of the coir workers are women especially from socio-economic backward class. Coir industry is passing through a period of uncertainty it never faced before. The problems are multifaceted. Low level of technology, shortage of fibre, steriotype products, inefficient management, reduced income level, absence of training to workers and supervisors, increased competition from other natural fibres, failure in sustaining quality standard, etc. In this context to win over the situation, timely actions to implement remedial measures are absolutely essential. Therefore, Coir Board as a prelude to this, decided to conduct a comprehensive study on coir sector in Kerala. Based on that KITCO has conducted a detailed study covering the various segments related to coir industry and prepared a report.

7.1.2 Field Survey

7.2.1 To assess the situation KITCO has conducted a survey in the State of Kerala covering coir workers, production centres, manufactures, opinion makers, traders, exporters, etc. The contact points selected are drawn from Private firms, Co-operative, Public sector and Government establishments so as to generate a fairly representative at the same time comprehensive picture. The details of the survey are given in the Chapter related to field survey highlighting the type of contact points and number of contact points. The tools used for the survey are structure questionnaires and personal interviews. Data collected from the field survey was analysed using statistical tools and allied software. The inferences arrived from such an analysis and the resultant observations and suggestions are described in the following paragraph.

7.3 Observations and Suggestions

7.3.1 *Availability and Utilisation of Husk*

7.3.1.1 The present system of husk collection in the State is not conducive to the economical working of coir units. It has been found that the present system of husk collection results in shortage of raw materials apart from wastage or diversion of husk into other less economical operations. As a result, the production units in the State depend to a large extent on fibre from outside the State, which adds to the cost. Besides, quality of husk from other states is also not satisfactory.

7.3.1.2 To avoid this a more workable logistic based programme is to be developed and implemented for collecting the husk. The assistance of Kudumbashree and Self Help Groups can be sought.

7.3.1.3 The quality of husk has gone down in the recent past as a result of endemic disease of Mandari on the coconut crop. Concerted action plans are required to improve coconut yield and control of diseases to obtain healthy husk and in larger quantities. An inter ministerial approach will be required.

7.3.2 *Fibre*

7.3.2.1 The problems relating to fibre includes inadequate availability of husk, process problems and quality. It has been seen that the fibre content in the husk is reduced by 22 per cent due to fungus attack. The fibre produced by retting though it is still considered as the best available, the sustainability of retting process requires consideration of environmental impacts before planning growth in the present retting areas. Alternative processes to the

traditional methods of retting requires consideration in traditional as well as non-traditional retting areas.

7.3.2.2 Mechanical defibering units are to be established near centres husk where is available to reduce the transportation cost, handling expenses and storage volume. The concept of mobile defibering units are to be implemented with due planning.

7.3.2.3 Pith is the waste generated during the defibering process and causes considerable ecological problems. Traditionally, pith is used only for landfills. However, the recent trend in the agriculture and soil conditioning indicate increasing use of organic manure. Pith can be advantageously used as an organic manure, if it is biodegraded through well established process already available. Pith produced in dry form from the mechanical defibering operation has the potential to be used as fuel briquettes. The rate of growth in the exports of pith is showing a positive trend. Continuation of the same shall be made on economic evaluation like social cost benefit analysis.

7.3.3. *Spinning*

7.3.3.1 Traditional ratts are still being used extensively for spinning in household. Although improved ratts that reduce the physical effort required for spinning, have been introduced, use of such ratts have not picked upto the desired extent. Mechanisation in this segment is required for improving production and productivity as well as to reduce the drudgery involved in the present methods. To find out solution to this, the following steps are suggested.

- Introduction of improved machines with a pilot study and testing.
- Introduction of appropriate technology with traditional methods.
- Providing training to the workers and supervisors in operation, maintenance and product quality betterment.

- Scope for producing varieties of yarn is to be explored.
- Introduction of standardisation of machine spun yarns.
- Promotion of the concept of factory based production.

7.3.4 *Weaving*

7.3.4.1 There is heavy dependence on manual looms for production of mats and mattings. Although mechanised looms are in successful operation, the structural set up in the sector is not conducive for a total change over to mechanised spinning. Further developments are essential in this segment including structural changes that will ensure overall development similar to revolution that occurred in the textile sector in late seventies. To bring in more mechanisation in weaving it is essential:

- To introduce soft financial package for technology upgradation and modernisation
- To impart training to the workers and supervisors.
- To accelerate the Research and Development progress association with national-level research organisations in textile and jute.

7.3.4.2 A product segmentation is to be introduced as machine product and hand worked product. Utilising the present preference for hand-made products, appropriate pricing strategy is to be adopted, thus benefiting the industry.

7.3.5 *Bleaching and Dyeing*

7.3.5.1 Bleaching and dyeing are carried out in the organised as well as in the unorganised sectors. In consistent quality of products that are dyed in the unorganised sector result in loss of reputation for quality. However, these operations are best done in an organised manner with due care towards environment. The establishment of common facility centres for bleaching and dyeing is a remedy for this problem. The promotion of natural dyes and

introduction of improved colour impregnation technology is essential for better acceptability in the export market.

7.3.6 *Product Development*

7.3.6.1 The coir sector presently relies heavily on the traditional products. The newly introduced varieties in the recent past are coir ply, geo textiles, etc. But even in this field the market acceptability and wide spread commercialisation are yet to be achieved. Market is flexible and looks forward for new trends and products.

7.3.6.2 To sustain in the market in the long run, it is essential to set up common facility centres on need based locations to carry out.

- Product design through CAD
- Product development in model factory
- Product testing
- Technology absorption

7.3.6.3 This will provide an opportunity for more effective functioning and taking initiative for developmental programmes.

7.3.7 *Marketing*

7.3.7.1 Coir products are being marketed in the age old tradition. Compared to the other product sector innovation is virtually absent. To tide over the situation a multipronged strategy is to be adopted including

- Introduction of new product packaging and design
- Introduction of product branding in virgin areas
- Introduction of incentive for higher exports
- Credit support for participation in international fairs
- Govt. supported trade fares/B2B in the country

- Coir Board shall function as a Nodal agency and facilitator for internal market development and exports.
- Seminars/trade fares are to be organised by the Consortium proposed for market promotion and market penetration.

7.3.8 *Apex Body Development*

7.3.8.1 Coir sector includes public sector, Government and private sector organisation. An apex body of these organisation is essential for exchange of ideas, development of product concepts and interaction with the Governments and international organisation to familiarise the problems faced by this sector at the appropriate fore.

7.3.9 *Socio-Economic Conditions of Workers*

7.3.9.1 During the survey the following observations were made:

- Employability among workers is less in general
- The income level is low in spinning sector
- Most of the workers are from low income group
- The level of education is low
- The percentage of younger generation among the workers is low.
- There is no wide district wise/regional wise disparity in the living condition
- The health condition of the workers is a matter of concern.

7.3.9.2 When the total development scheme is introduced the economic conditions of the workers will improve and to an extent, the other problems will be solved. New generation workers can be attracted. However, to ensure their better health and social well being welfare measures like Health Card and Group Insurance Scheme are to be introduced. This will enable them to

meet their medical needs even after retirement and provide a pension for their economic stability.

7.3.10 *Workers' Welfare*

7.3.10.1 Coir a traditional industry often lacks modern concepts about the workers welfare in terms of monetary as well as skill aspects. The workers after retirement live in poor conditions. Moreover, all the workers retire from the level they joined. This is generating a negative attitude among the workers. Therefore, incentive by way of hierarchical promotion is required to motivate them. To achieve this objective revamping of the coir production is essential. It necessitates:

- Training the workers
- Implementation of new production methods for motivation of workers and quality improvement
- Improvements in productivity by introduction of new technology for better wages.
- Educate the workers on the concepts of savings.

7.3.11 *New Paths*

7.3.11.1 Coir sector is still toying with age-old concepts and practices. As a result the industry is lagging in many ways. It can be seen that low productivity, low level of technology, poor return, etc. are the basic shortcomings of the industry.

7.3.11.2 To find a solution to these problems the following options are to be considered.

- Industry institution linkage for product development testing and training
- Implementation of quality concepts, specifying product standards and ISO certification

- Develop the concept of Special Economic Zone (SEZ) for fuelling export.
- Establishment of an Institution for technology upgradation and management input.
- Development of Cluster Development Scheme and Self Help Group
- Participating/association with agencies like Kudumbashree
- Creation of management information and publication of journals for sharing of ideas and experience.
- Training programmes for improving quality of employees
- Redefining the existing responsibilities and authorities at managerial levels to arrive at data based decisions.
- Creation of consortium of all people linked with the industry for future development and for solving problems.
- Introduction to the concept of outsourcing for better quality and productivity.

7.3.12 *Credit Facilities*

7.3.12.1 The present schemes are inadequate to armour the coir sector with strengths to face the competition from natural fibre industry from other states and from abroad. A total metamorphosis is to be brought in on a time bound basis. To achieve the objects and for ensuring improved performance of the sector adequate credit facilities are to be assured. The financial outlay projected amounts to Rs.525 crores to achieve a total development in the sector. The major points to be considered are:

- Financial assistance for modernisation
- Creation of international agency for funding and development
- Establishment of monitoring and evaluation methods for funding, utilisation of amount availed and performance approval.

7.3.12.2 In brief with holistic approach in areas like management, production, research and development, procurement, training, marketing and financial areas a total change can be brought about in the industry as a remedy for the stagnation now being experienced in the industry. This will help the Coir industry not only to grow, but also to regain its past glory and make it forward looking and market-driven. Moreover, providing job security and attractive packages and living conditions to the coir workers will attract younger generation to the sector, which in turn will improve productivity.



PROFILE NO: 1

Product : **Coir fibre and Coir pith**

Production capacity at 100% utilisation : Coir fibre 720 tonnes/year
Coir pith 720 tonnes/year

Turn over at 100% capacity : Coir fibre @ Rs 12 per kg Rs 86.40 lakhs
Coir pith @ Rs 0.50 per kg Rs 3.6 lakhs

Maximum achievable capacity in the third year of operation : 80%

Major machinery

SL NO	Name	No
1	Husk crusher	1
2	Defibring Machine	2
3	Screener	1
4	Turbo cleaner	1

Major raw materials : Green coconut husk

Land required : 60 cent

Built up area : 228.5 sq.m.

Type of building : AC sheet roofing

Connected load : 46 kW

Details of Man Power

Category	No
a. Administration	
1. Supervisor	1
2. Office assistant	1
b. Wages	
1. Skilled worker	2
2. Semi skilled worker	8
3. Helper	18
Total	30



Cost of Project

Sl. No.	Particulars	Cost (Rs.Lakhs)
1	Land and development	23.5
2	Building	10.5
3	Machinery	11.5
4	Misc. fixed assets	6.00
5	Contingency	5.15
6	Preliminary & Pre operative expenses	3.52
7	Margin money	4.10
Total		64.27

Financial Indicators

Term loan	: 50% of project cost
Rate of Interest	: 12%
Profit before tax during the third year of operation	: Rs 11.56 lakhs
Cash flow	: Positive
Break-even point	: 42.07%
Cash break-even	: 35.34%
Debt Service Coverage Ratio	: 1.99
Internal Rate of Return	: 12.50%



PROFILE NO: 2

Product : **Coir yarn**
Production capacity at 100% utilisation : 233 tonnes/year
Turn over at 100% capacity : Rs 81.5 lakhs
Maximum achievable capacity in the third year of operation : 85%

Major machinery

SL NO	Name	No
1	Willowing Machines	4
2	Motorised ratts	80
3	Winding Machines	2

Major raw materials : Coir fibre
Land required : 50 cent
Built up area : 714 sq.m.
Type of building : AC sheet roofing
Connected load : 30 kW

Details of Man Power

Category	No
a. Administration	
1. Supervisor	1
2. Clerk	1
b. Wages	
1. Mechanic	1
2. Spinners	78
3. Winding machine operators	5
4. Helper	5
Total	91



Cost of Project

Sl. No.	Particulars	Cost (Rs.Lakhs)
1	Land and development	17.00
2	Building	32.13
3	Machinery	14.00
4	Misc. fixed assets	9.00
5	Contingency	7.21
6	Preliminary & Pre operative expenses	1.91
7	Margin money	4.40
Total		85.65

Financial Indicators

Term loan : 50% of project cost

Rate of Interest : 12%

Profit before tax during the third year of operation : Rs 14.95 lakhs

Cash flow : Positive

Break-even point : 55.76%

Cash break-even : 50.81%

Debt Service Coverage Ratio : 1.94

Internal Rate of Return : 12.34%



PROFILE NO: 3

Product : **Mats and Matting**

Production capacity at 100% utilisation : 684 tonnes/year

Turn over at 100% capacity : Rs 313 lakhs

Maximum achievable capacity in the third year of operation : 80%

Major machinery

SL NO	Name	No
1	Standard mat	7
2	Semi automatic loom 1m width	10
3	Semi automatic loom 2m width	2
4	Shearing machine	1
5	Air compressor	1
6	Rope remaking machinery	2 sets

Major raw materials : Coir fibre

Land required : 40 cent

Built up area : 1066 sq.m.

Type of building : AC sheet roofing

Connected load : 65 kW

Details of Man Power

Category	No
a. Administration	
1. Supervisor	2
2. Clerk	1
b. Wages	
1. Weavers type I	14
2. Weavers type II	28
3. Weavers type III	10
4. Helper	2
Total	57



Cost of Project

Sl. No.	Particulars	Cost (Rs.Lakhs)
1	Land and development	12.00
2	Building	42.64
3	Machinery	45.00
4	Misc. fixed assets	9.00
5	Contingency	10.86
6	Preliminary & Pre operative expenses	6.02
7	Margin money	14.65
Total		140.17

Financial Indicators

Term loan : 65% of project cost

Rate of Interest : 12%

Profit before tax during the third year of operation : Rs 19.52 lakhs

Cash flow : Positive

Break even-point : 55.23%

Cash break-even : 47.16%

Debt Service Coverage Ratio : 1.55

Internal Rate of Return : 13.54%



PROFILE NO: 4

Product	: Pith fertiliser
Production capacity at 100% utilisation	: 383 tonnes/year
Turn over at 100% capacity	: Sales value for 50% (unpacked) @ 4500 /T Rs 8.6 lakhs : Sales value for 50% (packed) @ 5500 /T Rs 10.5 lakhs
Maximum achievable capacity in the third year of operation	: 85%
Major raw materials	: Coir pith, Pith plus and Urea
Land required	: 100 cent
Built up area	: 2100 sq.m.
Type of building	: Light roofing with bamboo poles & purline
Connected load	: 3 kW

Details of Man Power

Category	No
a. Administration	
1. Supervisor	1
2. Clerk	1
b. Production	
1. Semi skilled worker	1
2. Helpers	12
Total	15



Cost of Project

Sl. No.	Particulars	Cost (Rs.Lakhs)
1	Land and development	25.00
2	Building	5.25
3	Misc. fixed assets	4.46
5	Contingency	2.94
6	Preliminary & Pre operative expenses	2.49
7	Margin money	.74
Total		35.42

Financial Indicators

Term loan	: 75% of project cost
Rate of Interest	: 12%
Profit before tax during the third year of operation	: Rs 5.83 lakhs
Cash flow	: Positive
Break even-point	: 46.76%
Cash break-even	: 43.35%
Debt Service Coverage Ratio	: 1.35
Internal Rate of Return	: 12.51%



PROFILE NO: 5

Product : **Rubber Backed Coir Mats**

Production capacity at 100% utilisation : 175000 Nos

Turn over at 100% capacity : Rs 600 lakhs

Maximum achievable capacity in the third year of operation : 75%

Major machinery

SL NO	Name	No
1	Hydraulic press (42" x 44")	1
2	Hydraulic press (975" x 40")	1
3	Thermic fluid heater	1
4	Rubber mixing mill	1
5	Fork lift	1
6	Hand tools, moulds etc.	L.S

Major raw materials : Rubber and Rubber chemicals, Coir mats

Land required : 50 cent

Built up area : 592 sq.m.

Type of building : AC sheet roofing

Connected load : 71.75 kW

Details of Man Power

Category	No
a. Administration	
1. Supervisor	1
2. Clerk	1
b. Production	
1. Supervisor	2
2. Skilled workers	10
3. Semi-skilled workers	10
4. Unskilled workers	10
Total	32



Cost of Project

Sl. No.	Particulars	Cost (Rs.Lakhs)
1	Land and development	15.00
2	Building	26.64
3	Machinery	80.00
4	Misc. fixed assets	8.5
5	Contingency	13
6	Preliminary & Pre operative expenses	5.39
7	Margin money	23.03
Total		171.56

Financial Indicators

Term loan : 70% of project cost

Rate of Interest : 12%

Profit before tax during the third year of operation : Rs 40.79 lakhs

Cash flow : Positive

Break-even point : 36.68%

Cash break-even : 28.68%

Debt Service Coverage Ratio : 2.03

Internal Rate of Return : 22.54%