In the first chapter, it is clearly mentioned that, the central and state governments have been nurturing the coir industry in Kerala since five decades with financial resources and protective measures. This was done in consideration of its relevance in the employment generation as well as India’s export basket. Here an attempt is made to review the literature on the subject.

For convenience the literature reviewed for the study is organised under the following three broad heads.

1. Books
2. Reports
3. Articles, Research work and Seminar presentations.

2.1 Books

Unnithan [1970] in his book examines the various factors related to coir industry in the country. Background of the setting up of coir industry like locational factors, the various processes in the manufacture of coir and coir products, marketing structure and organisation of the industry etc. are covered in his work. It presents an analytical study of the cost of production of different varieties of coir and coir products. According to him coir industry is not an organised industry in the modern sense of the term and functions under the set-up of an under-developed country. Coir production is multi-staged and extends
from the production of coconuts to the making of coir yarn for the manufacture of mats. The study is mainly of a general nature and does not analyse any aspects mentioned above in detail. As a result it does not suggest any policy measures for better prospects.

Pylee [1975]², in his work examined the various aspects of the coir industry, viz., the structure, export, internal consumption of coir goods, marketing channel, labour force and crisis of the coir industry. The study stressed the necessity for strengthening the base for export production by manufacturing sophisticated coir products through modernisation. The report also stressed the need for making Kerala products cheaper than European coir products and developing a stable domestic market for coir products in India. The Report listed various government orders and notifications relating to coir industry in India. The study also emphasised the need for undertaking Research and Development in coir sector.

Thampan [1984]³ also gives a detailed description of different varieties of coir fibre, scientific process of retting [Mechanical and Chemical Methods], process of extraction of fibre [White Fibre and Brown Fibre], use of piths etc. in his book. The book generated awareness of the varieties of fibre and grades, chemical composition, methods of spinning coir yarn (through traditional hand spinning and ratt spinning) and their advantages. It also gives an insight into the varied uses of coconut palm to the people.

Thampan [1988]⁴ in another work offers a detailed account of production of coconut in various countries and states in India. He reveals that from an estimation, about 10 million people depend directly or indirectly on coconut cultivation and industry for their livelihood and this crop has profound influence on the agricultural economy of many states. His study also gives the rate of yeild
per hector in various parts of India, number of retting yards, and copra processing units in Kerala.

Thomas Issac et al. [1992]\(^5\), in their book "Modernisation and Employment" explain the crisis in Kerala's coir industry. This book draws the features of the industry during the fifties, traditional process of coir production, the relevance of coir industry in the economy of Kerala, the pitiable conditions of coir workers and improvement in the conditions of the workers through the leadership of militant trade unionism. It reviews the socio-political, economic and technological factors that effect trends in the coir industry in Kerala. To impart relevance of the industry it cites the value of shipments of coir from Malabar Coast from 1889-1950. It mentions the untapped husk potential in Kerala and suggests that through appropriate measures, the industrial utilisation of husk can be increased. This book expresses the view that the policy of unfettered mechanisation is not socially acceptable since coir production is the major source of employment after agriculture in the coastal tracts. However, at the same time it suggests technology choice for reducing the period of retting, mechanisation of fibre extraction and spinning process.

2.2 Reports

Karunakaran [1945]\(^6\), examined the various aspects of the problems of coir workers and coir industry and in the report stressed the necessity for organising the coir industry on co-perative basis. The study clarified that for many years in the past attention of the Government was particularly on finding a solution to the disorganised state of affairs that existed in the coir industry of the
state in general and the resultant disasters on the labour class in particular. This report laid the foundation for co-operativisation of coir industry in the state.

Smith (1949), made a study on the feasibility of organising the coir industry on co-operative basis and underlined the need for re-organisation of coir industry on co-operative basis. On the basis of the report of the Smith Committee, the erstwhile Govt. of Cochin attempted to organise Coir Industry on co-operative lines.

The Coir Board [1955], appointed an Ad Hoc Committee for Coir Yarn, to study problems relating to production, marketing, grading and standardisation of coir yarn, role of co-operative organisation in coir marketing, role of producers [small and large-scale], method of spinning, production and labour conditions. Though the Committee could not go deep into the all aspects mentioned above, it recommended various measures for the development of the coir sector. The recommendations related to arrangement for a census and registration of spindles, participation of only licenced dealers in the coir trade, popularisation of spindle-spinning in Malabar and implementation of Minimum Wages in the Malabar area which was then a part of the then Madras State.

Theyyunni Menon [1959], critically evaluated the functioning of various types of coir societies in the state. His report threw light on the various malpractices connected with this sector. He highlighted the fact that cooperatives failed to gain any hold on the industry. The causes responsible for this, according to him, were drawback in the accounting system, administrative delays and multiplicity of societies. The Report suggested various measures to attract coir workers into coir co-operative fold, and stressed the necessity for appointing qualified secretaries for coir societies. A change in the audit system prevailing in coir co-operative system was also recommended.
The Coir Board has published two reports; one in 1960 and the other in 1962. The 1960 Report was the outcome of an in-depth survey of a number of coir households in Kerala. The survey covered aspects relating to occupational status, job satisfaction level, land owned, demographic particulars, income and expenditure of hand-spinning households etc. It also covered spindle-spinning sector in the Kanyakumari district of the then Madras state. The objectives of the survey were to study the socio-economic conditions of the people engaged in the industry, to estimate the total production of coir yarn and consumption of raw material and the total number of households and persons engaged in the industry. It also covered the manufacturing units in registered and unregistered sectors. The report contained several recommendations for the upliftment of the coir sector. But the report had not made an attempt to analyse the Co-operativisation Scheme of coir sector in India.

The 1962 report was based on information collected about husk retters all over Kerala and Kanyakumari district of the then Madras state. It covered the number of workers involved in retting activity in various areas on the basis of variety of yarn production and spindle-spinning. The report made the inference that, considering its contribution towards exports of the country, the importance of the coir sector cannot be ignored. It also stressed the need for diversifying this industry. But the study did not make any attempt to analyse the role of Co-operatives for the development of coir sector in the country.

A Task Force was appointed by the Planning Commission under the chairmanship of M.K.K. Nayar for evaluating the various types of assistance extended to coir industry and coir co-operatives during the IV th Five Year Plan. Basically the Task Force was intended to suggest suitable measures for co-ordinating the development programmes for the coir industry and for
making a proposal for the Vth Plan. The Committee covered all states producing coir and coir products in India and submitted its report. The report identified the importance of Research and Development, modernisation, and mechanisation in this sector. It also found out various other uses of coir products. But this report failed to give concrete suggestions for solving the problems connected with coir workers and coir co-operatives. However, the Task Force proposed some financial support to the coir sector during the fifth five year plan.

The report on mechanisation in coir industry in Kerala brought out by the government of Kerala [1973]13, identified the relevance of coir industry in Kerala to national economy. The report contained information regarding the structure of coir industry, wage structure, export of coir and coir products from India, internal market of coir products etc. It emphasised the necessity of research and development effort in coir sector so as to modernise it. The report also admitted the sensitiveness of the issue of mechanisation of coir production and assessed its problems and possibilities. The report stressed that without modernisation, India cannot produce attractive coir products with modern designs, and hence she may not be able to maintain even her present share of the international market. The report contained several recommendations for the revival of the industry. The most important among them is that co-operatives in these sectors have to be strengthened and mechanisation should be carried out in such a manner that none should be thrown out of employment.

Nair [1977]14 Committee, in its report entitled “Coir Industry- a study of its structure and organisation with particular reference to employment in Kerala,” has touched all areas of the coir industry. Classification of various types of societies, problems of these societies relating to raw material shortage, working capital shortage etc. of Coir Co-operatives, effectiveness of Regulatory measures,
estimate about employment, income from coir work and non-coir work, expenditure etc. of coir workers were discussed and analysed by the Committee. On the basis of this the Committee concluded that the performance of the cooperative sector was not encouraging. According to the Committee the employment provided by these societies cannot be justified pari passu with the cost involved. The committee further suggested that the Kerala State Coir Corporation should take up the responsibility of distributing the orders received from exporters to small producers and supply yarn and other raw materials at economic cost to them and also provide common services like quality control, dyeing drying etc., for eliminating the middle-men who expropriate the surpluses. Even though the committee made a sincere attempt to study the problems of this sector, the committee failed to identify the causes for the weak performance of coir co-operatives in Kerala.

The High Powered Study Team under the leadership of B. Sivaraman [1978] found out that, even after the enactment of the Coconut Husk Control Order the co-operatives could not succeed in the field due to non-availability of the required husk for their operations. On the basis of its findings the Committee urged the central and state governments to extend financial help to coir societies to implement the Coir Development Programme.

Kerala State Planning Board [1984], analysed coir industry as a part of studying various traditional industries in Kerala. It went through the structure of coir industry and made an all-India view about employment in coir industry, production of coir products, out-lay and expenditure in coir industry during the five year plans, progress of co-operativisation in coir sector, various govt. regulations in coir industry including prohibiting the use of defibering machinery etc. It also gave an account of the export statistics of various coir products from
1960-61 to 1982-83. The committee put forward some major recommendations for the upliftment of the coir industry. The most important recommendation of the Committee related to prohibition of women working in defibering and retting operations and standardisation of coir yarn produced in different localities into three or four groups.

Department of Economics and Statistics [1986], conducted a study on production and consumption of coir and coir products in Kerala. The study also examined the potential of coir production in other states in India. Production and consumption, nature of coir, employment in this sector, units engaged in organised and unorganised sector in various activities of coir work etc. were also assessed. The report also analysed distribution of workers in the coir producing units, nature of employment, classification of coir workers as regular wage paid employees and unpaid family workers and distribution of units according to the number of hours worked per day. The study revealed that, the coir industry still continues with unpaid family workers which constituted about 72 per cent of the total workers in the industry and there were considerable under-employment in the industry and the workers were getting only less than 181 days of work in a year. It also revealed that there is considerable under-utilisation of equipment due to lack of raw material at a reasonable price.

State Planning Board [1990] appointed a Special Task Force headed by T.M. Thomas Issac. The Task Force examined the probable measures for increasing the economic availability of husk at reasonable price to coir vyavasaya co-operative societies in Kerala. It also analysed the performance of coir vyavasaya co-operative societies with special reference to export promotion and development of internal market of coir products. The report recognised some priority areas for Research and Development of which the important areas were
The development of treadle ratt, motorised coir spinning machine, semi automatic looms for weaving etc. But most of the suggestions were of repetitive in nature which could not bring any special advantage to policy makers in dealing with the problem of coir industry.

Coir Board [1990]¹⁹, in its survey report provided a detailed account of the coir industry in Andhra Pradesh. Details like coir fibre production, equipments used in coir production, employment, wages paid to coir workers, and the number of coir co-operatives functioning in that state were also provided. The study also highlighted, occupational status, social status, working hours and number of days worked, wages paid, income distribution of coir workers and capital investment in coir industry in the state. The study revealed that 58 per cent of the total coir workers were women and children constituted five percent. Even though the survey covered coir co-operatives, it failed to give any detailed information regarding their working.

The High Power Committee appointed by government of Kerala [1993]²⁰ under the chairmanship of Thachadi Prabhakaran, made an in-depth study about the working of coir societies in the State. It developed a formula to categorise coir co-operatives in to A, B and C. It developed a formula for finding out the number of man-days provided by coir societies on the basis of its production. The study also developed and adopted several criteria for evaluating the working of coir co-operatives in the State. It used a tool for collecting evidences about the drawbacks in working of coir co-operatives and suggestions from the public who were associated with coir co-operatives. But the report failed to suggest any policy for developing the weak societies or for the revival of sick coir societies.

Coir Board [1994]²¹, published a report on the coir industry in Tamil Nadu. This gives a detailed account of coconut production, status of coir
industry, number of coir co-operative societies functioning, employment, production of coir, capital investment etc. in Tamil Nadu. The study also revealed the presence of child labour in coir industry. According to the study children accounted for 12 per cent and women, 49 per cent of the total coir workers. The study further showed that income in the coir co-operative sector is less than in the other organised sector. Even though the survey covered coir co-operatives, its scope was limited to ascertaining the total number and their membership. So it did not touch upon the detailed working of coir co-operatives in the State.

The committee headed by Anandan [1997] also examined the problems of coir vyavasaya societies in Kerala. The report made a category-wise analysis of the coir societies in Kerala. But the report presented only a general picture on issues like share capital, assets, liabilities of coir societies in each category. The report did not highlight any particular merit with respect to any category of the societies. The study also failed in identifying the exact cause of failure of coir societies in the state. In spite of these shortcomings the report contained several recommendations for the upliftment of the coir co-operative sector. The major ones among them were :-

♦ The dues of the societies to the government should be converted into shares,

♦ Government should stand as surety for the loans taken by coir co-operatives, and

♦ The Govt. should appoint a committee to study the existing poor service conditions of employees of the coir societies.
Kerala Statistical Institute [1997] conducted a survey on coir industry in Kerala. The report gives deep insight on matters relating to the number of coir workers in the state, coir households, quantity of production of yarn, fibre, consumption of fibre, socio-economic aspects of workers in the coir industry in Kerala, etc. The report also gives a picture of the demand for fibre, yarn and coir products, its movement from Kerala, and various traditional and non-traditional equipments applied in the industry. The study further revealed that the under-utilisation is more discernible in the co-operative sector where more than 50 per cent of under utilisation of equipment was reported. But it has not given any detailed account of the working of coir co-operatives in Kerala.

Kerala State Planning Board [1998], has made a brief review of the coir industry during the past four decades. The review related to out-lay and expenditure on coir industry up to 8th five year plan, progress of co-operativisation of coir industry, activities of coir co-operatives, Govt. regulation on coir industry etc. The review concluded with an assessment with respect to future prospects of the industry, which included various advantages of geo-textiles and its world-wide market in future. The report estimated world market for geo-textiles as 1000 Million Sq. meters annually and 98 per cent of which was dominated by geo-synthetics.

Even though the reports of various committees and task forces were aimed at exploring the root cause of the different problems that existed in coir industry and coir co-operatives in general at different periods and to suggest measures to solve them, none of them succeeded in suggesting lasting solutions to the problems of coir vyavasaya societies and their workers.
2.3 Articles, Research Work and Seminar Presentations

In an editorial [1967] published in the Journal of Industry and Trade, an unidentified writer emphasised the importance of pushing Indian coir goods in German market to compete with the substitute fibres. The article also highlighted the necessity for launching collective advertising campaign to effect a perceptible change in the attitude of the public. The article recommended new designs and techniques to suit the European market and suggested that such changes can be introduced preferably through collaborations with German manufacturers and importers. It further suggested that production of rubberised coir, particularly in India, must be given priority as the most prospective line of export promotion. The article also suggested that different methods of advertising techniques must be adopted to suit the tasks in different countries.

Vimal [1976], described various uses of Coconut pith, which was considered to be a waste. The areas where this can be used include building industry, manufacture of gasket, agriculture, storage batteries, electroplating, and in rubber compounding. The divergent uses of the pith, which was considered as a waste material holds great potential.

Alexander [1976], unveiled the economic and social importance of coir industry in India. According to him no cottage industry in Kerala engages so many people in manufacture and trade as in coir industry. He opined that maintenance of a uniform quality is the most important factor in stabilising and improving exports and the only way to achieve this is through evolving suitable standards for different types of products and ensuring that export conforms strictly to these quality standards. He stressed the necessity of introducing mechanical spinning and defibering from unretted husk in India. He emphasised the importance of diversification and modernisation of coir products and hoped that
Coir Development Scheme could ameliorate the conditions of workers in societies and the necessity of expanding domestic market for the development of coir industry. The author also claimed that Indian coir yarn has good reputation in the foreign markets and there is a tendency of preferring natural fibres to artificial fibres. He also accepts the complexity of the problems of coir as it vitally concerns the lives of tens of thousands of people while it is an industry with great potential for export as well as for internal consumption. He concluded the article stating that as long as coconut palms tower high in the coastal belt of Kerala the coir industry can exist in the country.

Kunhikrishnan [1977]²⁸, in his article examines the historical relevance of the coconut tree and its various uses. He also mentions that classical literature of India has glorified coconut tree as 'Deva Vkrisha ' or Godly tree as it provides a variety of products useful to daily life. The name of the state 'Kerala', itself comes from coconut, Kera + alam [Kera = coconut, alam = land]. It is stated that research conducted so far shows that coconut is ideally suited for a balanced plant- animal- human eco-system in which perfect harmony between these three life patterns can be achieved to their natural advantage. The coconut growing areas are characterised by a high density of population and so this crop is a boon to the small farmer.

Economic Review [1978]²⁹, of Kerala, while mentioning different traditional industries in Kerala, states that, when coir co-operatives have started to give reasonable wages, the private coir producers have also been forced to hike the wages. It also advocates various control measures in the industry enforced by Coir Directorate.

Economic Review [1980]³⁰, highlights that as this industry is a highly labour intensive one, any attempt of modernisation will bring labour
displacement. What is required is the expansion of external and internal market, which will add a new dimension to the development of coir industry.

Robin [1984]31, in his article narrates the historical background of coir industry, features of labour movement in this sector of Kerala state etc. The article throws light on the caste system that prevails in the Kerala society and how it decays the society and the coir workers. The role and influence of 'moopan' among coir workers is also touched in the article. He also tries to link the labour movement [their militancy and stamina] in coir industry with Punnapra- Vayalar Revolt in 1946 in Kerala.


Shah. [1983]43, Ojha. [1988]44, U.M Shah. [1988]45, Anjaneyulu and Deshinamurthy [1990]46, Sarngadharan [1990]47, Thondarson [1990]48, have categorically stated that for the multi-dimensional development of co-operatives, professionalism is to be brought in all the functional areas of co-operatives. They have emphasised that co-operatives should develop their own cadre of personnel who are not only professionally competent but also are dedicated to the co-operative values and have stake in the co-operative organisation.

have viewed that the statutory power granted to the Registrar of co-operative societies enables him to step into the shoes of the Board of Directors of the societies and wield virtual monopoly power which is against the cherished role of a friend, philosopher and guide to the Co-operative Movement. Since continuous progress of co-operatives should be based on local initiative, democratic leadership and managerial competence, it was suggested that deliberate and concerted efforts are called for to de-officialise and de-bureaucratise the co-operative movement.

Ajith Kumar [1987]⁵³, in his work states that coir yarn is the chief item of consumption within the country which is marketed by private traders. According to him domestic market for coir goods has not fully been exploited, particularly for door mats and mattings. Therefore along with the intensification effort for expanding export market for coir goods, efforts should also be made to strengthen the domestic market for withstanding the stress and strain of a fluctuating export market.

Pillai [1987]⁵⁴, In his article, while explaining various measures taken by the central and state governments for the development of coir industry and coir societies, reminds that 85 percent of the coir products are marketed in the internal market and finds it very difficult to catch the external market. He also suggests to implement mechanisation in the husk beating sector and to try to reduce the workers of this sector.

Gopalan Nair [1987]⁵⁵, while explaining the relevance of coir industry and coir co-operatives in Kerala finds out that the traditional decentralised nature of the coir industry was the major factor that retarded effective quality control. He also has given a brief picture of the technology improvement attempted by the Coir Board and observes that it was essential for reducing human drudgery to a
great extent. He identifies that co-operatives are the best agency for effective transformation of results of research to the industry.

Editor [1987]⁵⁶, “Kerala Industry” in a lengthy article relating to the Coir Rehabilitation and Modernisation for development of coir industry in Kerala, analyses the earlier steps taken by the Government for supporting coir cooperation and the problems faced by coir industry and coir co-operatives. The article has given a detailed account of co-operativisation scheme and emphasises the need for mechanisation and modernisation.

Malik. [1988]⁵⁷, examined the historical background of coir co-operatives in Kerala. According to him until the starting of coir development scheme during 1950-51, there were no organised attempts made to stabilise and strengthen the industry. The industry was depending on the initiative, enterprise and financial resources of the private industrialists. He found out that the weaknesses of central coir societies [not existing now] were due to the shortage of working capital and concluded with a suggestion that coir co-operatives should be strengthened in order to protect foreign exchange earning and to prevent the throwing of workers out of employment.

Economic Review [1989]⁵⁸, notes that in Kerala coir industry is the largest cottage industry where 4.3 lakh people are working and it adds that Co-operativisation programme would help to revitalise coir industry.

Subramonian [1989]⁵⁹, is against politicians assuming positions in co-operatives. According to him they will utilise their positions for their own interest which may be against the interest of the society. Therefore according to him co-operatives must develop their own leadership, free from political, communal and other considerations. He also points out that the Registrar of Societies, who was originally visualised as the ‘Brahma, Vishnu and Siva’ of the co-operative
organisation has to perform his regulatory functions dispassionately and effectively. He concludes that we should diagnose the reasons for the failure of societies and find remedies rather than condemn the movement as having failed.

Sugathan [1995]⁶⁰, in his study complains about the negation of the deserving share of assistance to Kerala from central government for coir societies. He suggests for the development of coir sector, restructuring of various agencies – Coir Board, Kerala State Coir Corporation, COIRFED, Form Mattings functioning under central and state governments which were formed for the development of the coir sector. He also suggests re-structuring of the activities and giving a democratic working character to Coir Board for getting a deserving share of assistance and justice to coir co-operatives of Kerala. He hopes that the new Economic Policy will help the coir export sector and thereby help coir workers.

Sasi [1995]⁶¹, reveals that the number of coir workers in coir industry has been reduced to 50% with the passing of 50 years. According to him this is due to the increased exploitation of labourers and lack of proper attention by authorities in the coir sector. He adds that the majority of coir co-operatives are not functioning and the functioning ones are unable to pay Minimum Wages to the workers. He stresses the need for ensuring co-operation between the private sector and the co-operative sector for the healthy growth of the coir sector. The article demands extension of Government assistance to private coir sector too.

Subhash [95]⁶², narrates the history of coir in India, and reveals that coir spinning started in Kerala during 1854 when two Europeans, having the knowledge of spinning were brought by James Darragh. It flourished because Kerala's coir products were cheaper than European products in the foreign
markets. It also mentions the Levy System implemented in Coir Industry and the reasons for its failure.

Sudhakaran [1995]\textsuperscript{63}, in his technical article, highlights the technique of mechanical extraction of fibre from green husk by ensuring quality. The article has conveyed the information with flow diagram.

Balachandran [1995]\textsuperscript{64}, narrates the different types of welfare measures adopted by the government for coir workers in Kerala and explains in detail the working of the Coir Thozhilali Kshemanidhi Board and the fund distribution to coir workers. It states that the distributed Fund so far was above Rs. 3 crores to coir workers on several accounts. It also reveals that only 70,000 workers took membership in the Kshemanidhi, which means that Three lakhs workers are yet to become members of this Skhemanidhi.

Anathalavattom Anandan [1995]\textsuperscript{65}, in an article relating to the renovation of coir yarn sector portrayed the pitiable condition prevailing in the area of wages, working conditions etc. of coir workers He categorically states that the prevailing production system should be changed so as to suit the domestic and foreign market even though there is some displacement of labourers, and urged that some steps need to be taken to remove the doubts and anxiety existing in the minds of coir workers at the time of modernisation. He also advocated for motorised ratt as the need of the day.

Chacko and Parameshwaran Nair [1995]\textsuperscript{66} have explained in an article, the steps taken by central and state governments for renovation of coir industry in Kerala and recommended various measures for the welfare of coir workers.

Ajith Kumar [1995]\textsuperscript{67}, examines the marketing possibilities of coir and coir products in various countries. European Union accounts on an average more
than 65 percent of India's annual export of coir. In Western countries the demand
for eco-friendly products are growing. In U.S.A., Sweden and Korea there exists
vast potential for using coir as geo-textiles. Ajit Kumar also complains that
creative efforts have not been made for convincing the global market about the
unique properties of coir, like high resistance to rotting, ability to withstand high
velocity waterflow etc. He suggests that specific promotional efforts need to be
taken to popularise Indian coir products in International market.

Kumaraswami [1995]\textsuperscript{68}, in his article, after giving a short account of the
rate of production of various coir products and utilisation of fibre potential in
India, stresses the need for diversification of coir products manufacture from
traditional lines. He also highlights the importance and superiority of Polycoir as
a substitute to wood products.

Joseph [1995]\textsuperscript{69}, holds the view that India cannot make a dent into the
foreign market as her share of coir fibre in the world market is negligible.
According to him it is essential to reduce the period of retting and to get rid of
manual beating of husk so as to avoid most uncongenial and unhealthy
atmosphere. He analysed the market of various items of coir products like coir
yam, coir geo-textiles, coir pith etc. and made certain suggestions for its
development in the international market with the liberalised economic policy of
the Government. He also reveals that there are several countries where coir is
still unknown to many people.

Veitch [1995]\textsuperscript{70}, in a seminar presentation paper, expressed his view that
the specific qualities of coir have not effectively been communicated to neither
retail traders nor ultimate consumers even in the world wide changing approach
towards eco-friendly product. He conveys a message to Coir Board that it
should vigorously embark on a programme to devise a promotional strategy
which will ensure the message to get across loud and clear and not keep the secret to ourselves.

John [1995] hold the view that coir industry can expect a bright future even in the midst of the cry about the various crises in the sector. World-wide change of attitude towards eco-friendly natural fibres and progress achieved in the diversified use of coir products made him to express such a view.

Damoderan, et al. [1995], in their article about the technologies for diversification of coir products, explains new uses of coconut pith and short fibres. They highlight the low water absorption capability of Polycoir and lightweight brick. They claim that, Polycoir is a potential substitute for wood based products and thereby can significantly contribute to growth of brown fibre sector of the coir industry.

Fernandes [1998] gives a brief account of the various projects implemented by the Coir Board for modernisation and development of coir industry. He admits that only one fourth of the total husk is converted into fibre and the uncertainty of raw material availability creates interruption in coir industry.

Cherian [1998] explains the various uses of coconut pith in his article, and if it is utilised properly the atmosphere pollution of coir industry can also be reduced considerably. He also reveals that in Tamil Nadu a person developed 'coir pith brickete,' which can be used as fuel substitute to LPG or firewood.

Rajendran [1998] in his article stresses the importance of the export of coir products and the necessity of getting direct financial assistance to coir vyavasaya societies from Coir Board for the revival of sick coir vyavasaya
co-operatives. He also suggests that for boosting domestic market for coir goods the rebate details must be published through the media.

Viswambharan (1998)\textsuperscript{76}, in his brief account of history of co-operativisation claims that, under this scheme the exploitation and monopoly practice of private traders and manufactures could be curbed to some extent. Even then he admits that in coir co-operatives several drawbacks have surfaced including malpractice of money, resulting in several societies running at a loss and some remaining dormant which are to be eliminated. He is against blaming coir co-operatives alone for this state of affairs, who carries 2.5 lakh worker members with 50 years of working, in a country like India where one individual alone committed a robbery of 100 crores of rupees from Govt. treasury.

Bavakutty (1998)\textsuperscript{77} expresses his anxiety in an article, on decreasing the labour days provided by Coir Co-operative sector year by year even with very poor wages. While concentrating his observation in Thrissur District, he feels that this grim situation was due to the lack of availability of raw husk. He demands the involvement of local body Government for ensuring the supply of husk to the Cvos that belong to their respective areas.

Dev (1998)\textsuperscript{78}, highlights that the mechanisation implemented in the spinning sector contributed only harm to this sector and it created a new crisis in the sector.

Vijayachandran (1998)\textsuperscript{79}, in his study on coir societies reveals that the majority of the coir co-operatives in Kerala are not able to meet the working capital requirements for purchase of raw material, payment of wages and meeting other expenses. According to him, the delay in releasing sale proceeds from government agencies, lack of working capital assistance from Government agencies and banks are the major hurdles, which hindered the performance of
coir co-operatives in Kerala. He concludes with some suggestion for the improvement of the present situation, of which the important ones are, delegation of authority to the lower levels for avoiding delay in sanctioning assistance and to extend working capital assistance to coir co-operatives on the basis of their performance.

Ajith Kumar [1998] and [2001] Sivaramakrishnan [1999], Ramanatha and Girish [2000], give an account of the unique quality of coir geo-textile in soil erosion control and stabilisation of existing slopes and cuttings in highways etc. They highlighted the properties of coir geo-textiles that include totally biodegradable, 100% natural, water absorbent, act as a wick in the soil mantle and five to ten years longevity. The high tensil strength of coir fibre protects steep surfaces from heavy flows and debris movement and restoration of terrestrial and aquatic riparian habit. They also find that high lignin content of coir makes it more stiff and durable than other natural fibres. Because of its quality, the green movement, increasing environment alertness, and growing preferences for natural products provide substantial opportunity for coir geo-textiles mainly in the industrialised countries of Western Europe, North America and Japan. They conclude that the versatility of coir and its products and end use applications have no bounds.

Kutty [1999] in his article, stresses the vital importance of improving the marketing of coir and coir products in India and elsewhere for survival and growth of coir industry. He warns that severe competition facing from synthetic coir products and natural substitute, Machine spun coir yarn and mats from Sri Lanka, and European Countries may create problems to the industry. Therefore publicity about the unsurpassable quality of Indian coir products is to be accelerated.
Abdur Rahman [1999]85, Prabhu [2000]86, Ajith Kumar [2001]87, in their respective articles, explain the reasons for decreased demand of coir yarn in U.S.A., which was the major market for coir yarn in the globe. The reduction in the area under Hop cultivation, as a consequence of the use of high yielding hybrid varieties is one of the reasons for the reduced oftake of coir yarn. Another reason is lack of competition in Indian coir industry, and its continued use the traditional method of production which could not withstand the competition form Sri Lanka in the U.S.A. market and he broke the Indian monopoly in the matter of supply of coir yarn for Hop cultivation. The reasons for this situation were the emotional policies against modernisation and mechanisation of coir industry in India. For retaining the interest of consumers in coir products it is essential to ensure that items of specified standards of quality are produced and marketed. Earnest efforts on the part of the coir units to institute in-plant quality control [IPQC] on their own is also suggested. The articles conclude with the hope that, the lost market can be regained with the adoption of modernisation in all sections of the industry in the changed scenario when good quality yarn is available for export.

Tommy [1999]88 and Bagchi [2001]89 explain in detail the varied advantages of coirply and coir composites. According to them, considering the shortage of timber and wood products, coirply and coir composites will be an effective eco-friendly substitute. A small unit which produces 40 cubic metres of wood substitute can save 20 acres of deforestation every year. The articles highlights the advantages of coir composites such as 100 per cent wood free, biodegradable, agro-base materials, flame retardant, boiling water resistant and 10-15 per cent cheaper than corresponding grade material.
NCAER [1999] study focussed on the impact of MEP and purchase price [Enforcement] scheme on export, employment and protection of wages. The study analysed the perceptions of the workers in the coir industry on various issues affecting the growth of export of coir products, employment and protection of wages. The survey result of the study revealed that MEP and PPES have a positive impact on the protection of their minimum wages and 100 per cent of them said that it was not logical to abolish MEP and PPES. Ten per cent of them opined that this system was helpful to ensure the quality of export products. The feedback from exporters revealed that MEP should continue indefinitely.

Chandrasenan [2000], in an article requested to the Central Government to retain Floor Price for coir and coir products in order to protect the interests of coconut producers, lakhs of poor coir workers and coir producers. This is not against WTO agreement as domestic market price is less than international market price. He puts forward several arguments for maintaining or raising MEP as it affects adversely lakhs of coir workers and small producers, most of whom live below the poverty line.

Fus- Lu- Dheen Huk [2000] in his article opined the necessity of bringing all Directorates of traditional industries like coir, handloom etc under one Directorate for framing a common policy to help these industries effectively.

2.4 Unpublished Research Work

Thomas Issac [1984], in his work gives a picture of labour movement in coir industrial scene of Kerala from 1859 to 1980. His study throws light on the activities of trade union movements among coir workers and explains how it helped to uplift the coir workers and to reduce their exploitation by middlemen.
The work also helps to get an insight into the labour movement in coir industry and how it was linked with the freedom struggle of India. He concluded his work stating that the labour unions were pledged to fight against any move to mechanise the industry without guaranteeing alternative jobs for the displaced workers. The agitation against the machine assumed a new momentum in the mid-seventies. But the study does not focus on the role of formal institutional arrangements like co-operatives for the development of coir workers and coir industry in the State.

Pyralal (1995)\textsuperscript{94}, in the study on traditional industries in Kerala, mentions that, in the case of coir co-operatives, despite the large mobilization of workers in support of co-operatives, the performance shows a deteriorating trend over time in terms of employment generation as well as financial viability. The demand for coir products has declined over time and the raw material scarcity has become acute. The co-operatives which paid minimum wages were handicapped in competing with private sector in the input market. In order to make available raw husk at economical price to coir co-operatives government attempted to intervene in the husk market with various control measures. However this step could only worsen the raw material crisis. The study also opines that the prolonged stalemate has undermined the morale of the work-force and contributed to the bureaucratization of the co-operative structure.

Philip (1995)\textsuperscript{95}, in his study on the role of co-operatives in tribal produce marketing gives a clear cut view of the measures undertaken by co-operatives in solving the marketing problems of the most down-trodden community of the state. The study reveals that the tribal participation in co-operatives is very poor and societies have also failed to produce at least 70 percent of the market value of the produce of tribals. However, the study reveals that only because of the
existence of co-operatives, the tribals are able to get a floor price for their products.

Neena [1999]96, in her dissertation examines the working conditions of women workers in the unorganised sector. She, along with portraying the geographical peculiarity of coir industrial area, types of coir yarn, and the hazardous nature of coir work, also examines the social problems connected with coir work and the suffering of women coir workers in the state. The study found out that, coir workers enjoy very low status in the society and the majority of them belong to a particular community and the economic necessity compelled young women coir spinners to engage in this work and work for 8 – 10 hours per day. It also adds that in the unorganised sector women workers are preyed upon by contractors and middlemen who exploit their ignorance.

Dhanya [1999]97, in her report on the problems of women workers in coir industry, focusses on the life style and social conditions of women workers in coir industry. It analyses the socio-economic profile, health problems, and the nature and status of women coir workers. The study reveals the demographic picture of the workers that they were illiterate in most cases. Moreover hard and irregular employment are common features coir industry. The study comes to a conclusion that the improvement of the conditions of coir workers should be the main considerations while thinking about improvement in coir sector and also adds that co-operative sector in coir industry should be revitalised with sufficient funds so as to benefit coir workers too.
2.5 Seminar Presentations

Suseela [1988] in her seminar presentation, related to the problems and solutions of coir industry, mentions that mechanisation should be applied in sectors where women are not willing to work. In order to reduce the strain of women in running up and down during spinning with conventional ratt, treadle ratt can be implemented. Similarly husk beating machines shall be erected where there is shortage of labour for hand beating of husk and stressed the need for developing domestic market for coir goods. She also adds that in the marketing side a wide net work should be developed in order to market the products of coir primaries. The paper concludes with the forwarding of several recommendations for developing the coir societies.

Thomas Issac [1988], in his paper presentation in a seminar, categorically states that mechanisation in coir industry is not the sole way for increasing export. On the other hand coir products produced from traditional methods will be more in demand if they are popularised. At the same time a blind opposition against mechanisation of any type in the sector is also not an appreciable stand. He states that only one third of the husk potential is used in coir industry and there should be a husk collection machinery to collect the husk to make it available for the coir industry. He also mentions that workers in coir industry are over crowded and productivity of coir co-operatives is lower than that of private sector and criticises its fund utilisation.

Sarma [1998] in his reported speech on the occasion of 8th State Science Congress in Kerala, opines that coir geo-textiles will not create environmental problems like synthetic materials. He claims that new attractive items can be manufactured by mixing coir fibre with wool, polyster etc.
Christy [2000]¹⁰¹, in his paper presentation relating to coir industry in India, categorically admits that traditional hand made coir products continue to be marketed at a premium price and therefore this section cannot be ignored and it requires development for that particular niche in the market. He expressed the view that export market for coir and coir products has not been fully tapped and promotional efforts are grossly inadequate and calls the managers to gear up their efforts in this area to help the industry to become globally competitive.


Tommy [2001]¹⁰⁷, Gopakumar [2001]¹⁰⁸, Kalra *et al.* [2001]¹⁰⁹, Sharma [2001]¹¹⁰, explain through their presentation the superior quality of coir based products and the need of developing it for substituting timber. Coir, being a natural, environment friendly product should find many uses in building and construction industry. With the production of varied coir based products like coir-cement boards, coir-cement panels, coir-cement blocks, coir-cement tiles etc., it is claimed that in building construction tremendous exploitation of forest resources and destruction of wild life can be avoided. Coir composite board is also having packaging applications.

Lee [2001]¹¹¹, in his paper holds the view that world needs of coconut fibre and coconut product have increased rapidly during the last 10-15 years and many developed countries have developed environmental industries in using
natural materials particularly after 1992 Brazil "RIU" declaration. Korea imported 50,000,000 sq. metres of coir geotextiles for the construction of roads. But that formed only 40 per cent of total market needs. Japan also has the same conditions like Korea. According to him Korea and Japan have the most rapid by increasing demands for coconut related natural material products in the world.

Mukharjee [2001]112, explains the varied uses of coir pith. Though coir pith is considered a waste, it is claimed that it is not at all a waste, it can be converted into wealth and can be utilised for various purposes because of its specific properties like high water holding capacity, bulk density, aeration, hydraulic conductivity, unique structure, moisture holding capacity and infiltration rate etc. It can also be used as manure, saline soil conditioner, fuel briquettes, particle boards etc.

Goel [2001]113, in his paper stressed the necessity of strengthening the domestic market for coir goods. She also explained the reasons why consumers are not attracted towards coir products. According to him the masses in general are not aware of the various uses and utility of coir and products made of coir. The Government owned undertakings have failed to generate that awareness and thereby attract consumers. Their showrooms are not well maintained and wear a shabby outlook. They do not have sufficient varieties and designs that are presentable. Their style of packing is crude, conventional and remote. He also added that, the participation of private sector in promoting sales of coir goods is a must and for this a suitable policy be chalked out.

Shyam [2001]114, points out the tiny role of India in the world market. According to him in the total export earnings [2000-2001] of India coir and coir goods constitutes only 0.15 per cent and coir industry does not occupy a place it deserves in India's export basket. He emphasises the use of electronic media for
trade promotion particularly in the context of globalisation and liberalisation. The adequate flow of trade information, faster communication and e-commerce would be the key to success of any marketing strategy.

Gandhi [2001]15, draw a brief picture of the international business scenario of coir industry in his presentation. According to him global GDP may fall and settle at around 2.5 per cent, which is considered an indication of stagnation leading to the recessionary trends. The scenario has not been encouraging in three major economic regions. With the vast and strong domestic market India will ensure the required growth and insulate it from ill effects of developments in the rest of the world. He hopes that she can achieve export earning from coir related products with a target of Rs. 1000 crores in the next six years if required measures are taken. These varied measures include strengthening of marketing effort by ensuring the involvement of private NGO’s for encouraging imports from developing countries, working for preservation of environment by discarding harmful synthetic production to replace them where natural substitutes are available and involve reputed chain stores to accept and promote such products more as a social obligation.

The above review of literature includes various studies, books and articles on different aspects of coir industry and coir workers in India and Kerala, but very few touches coir co-operative sector of Kerala, particularly coir vyavasaya societies. The present study would fill this gap to a certain extent.
References

Books


Reports


Articles, Research work and Seminar Presentations


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Unpublished Research Work


Seminar Presentations


