

DETAILED PROJECT REPORT

Location: Madurai, Tamil Nadu

(VAIGAI COIR CLUSTER PVT LTD)

www.vaigaicoir.com



Submitted to
Coir Board, Kochi

Prepared by



ITCOT Consultancy and Services Ltd.

(Joint venture of ICICI, IDBI, IFCI, SIPCOT, TIIC, SIDCO and BANKS)

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EXECUTIVE SUMMARY

01.	Name of the cluster	MADURAI COIR CLUSTER
02.	Type of Cluster	Major Cluster
03.	Location & Spread of the cluster	The cluster area is located in Vadipatti Taluk, Madurai District. The cluster spread includes seven revenue villages in Madurai District. The

		Geographical spread of the cluster measures about 20-25 Km radius																				
04.	Product range	<p>The existing range of coir products produced in the cluster are:</p> <ul style="list-style-type: none"> • Coir Fibre • Coir Yarn • Coir Pith 																				
05.	Size of cluster & Type of units	<p>The total number of coir units available in the cluster area is around 65 units of which 30 Nos. are engaged in Fibre Extraction, 20 Nos. engaged in Coir 2Ply Yarn Spinning and 15 Nos. engaged in Coir Pith. In addition, there are about 1000 members engaged in Hand rats/ Manual yarn spinning. The total number of beneficiaries estimated to be around 2650 members which includes the labor force. Based on the number of cluster beneficiaries and the nature of interventions proposed, the cluster is typified as Major Cluster.</p>																				
06.	Production & Turnover of Coir products in the cluster	<table border="1"> <thead> <tr> <th>Activity</th> <th>No. of Units</th> <th>Annual Production (in MTs)</th> <th>Annual Turnover (Rs Crores)</th> </tr> </thead> <tbody> <tr> <td>Fibre Extraction</td> <td>30</td> <td>13500</td> <td>21.60</td> </tr> <tr> <td>Yarn Spinning</td> <td>20</td> <td>1620</td> <td>5.18</td> </tr> <tr> <td>Coir Pith Block</td> <td>15</td> <td>12600</td> <td>13.23</td> </tr> <tr> <td>Hand rats/ Manual Spng.</td> <td>500</td> <td>300</td> <td>1.20</td> </tr> </tbody> </table>	Activity	No. of Units	Annual Production (in MTs)	Annual Turnover (Rs Crores)	Fibre Extraction	30	13500	21.60	Yarn Spinning	20	1620	5.18	Coir Pith Block	15	12600	13.23	Hand rats/ Manual Spng.	500	300	1.20
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07.	Employment & Income level	<table border="1"> <thead> <tr> <th>Activity</th> <th>Male</th> <th>Female</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Fibre Extraction</td> <td>80</td> <td>670</td> <td>750</td> </tr> <tr> <td>Yarn Spinning</td> <td>20</td> <td>80</td> <td>100</td> </tr> <tr> <td>Coir Pith Block</td> <td>60</td> <td>540</td> <td>600</td> </tr> <tr> <td>Hand rats/ Manual Spinning</td> <td>100</td> <td>900</td> <td>1000</td> </tr> </tbody> </table> <p>The income level for the employed labors in the cluster is Rs.300/- for male workers and Rs.200/-</p>	Activity	Male	Female	Total	Fibre Extraction	80	670	750	Yarn Spinning	20	80	100	Coir Pith Block	60	540	600	Hand rats/ Manual Spinning	100	900	1000
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		<p>for female workers per day.</p> <p>The income level of members engaged in manual spinning in the cluster is in the range of Rs.400/- to Rs.450/- per day.</p>
08.	Key Concern areas of the cluster	<ul style="list-style-type: none"> • Cluster's present production is limited to intermediate products such as fibre, yarn etc., which fetches reduced margin only. • Lack of awareness on the benefits of graduating to production of value added finished products. • Production of value added products is less with respect to the availability of raw material and market requirements. • Absence of collective/collaborative efforts in the cluster so far, to undertake common development initiatives • Solely depend on the local trader /middle man/ marketer to sell their products even through there is huge scope for direct marketing. • Lack of initiatives towards new product/design development
09.	Proposed Strategic Interventions	<p>Soft Interventions:</p> <ul style="list-style-type: none"> • Capacity building initiatives • Market Promotion initiatives <p style="text-align: right;">Contd...</p> <p>Hard Interventions:</p> <ul style="list-style-type: none"> ➤ Needled Felt based Coir Composite Panels manufacturing facility ➤ Coir Wood Furniture making facility ➤ Garden articles making facility ➤ Coir Handicrafts making facility <p>Thematic Interventions: Participation in activities such as national and</p>

		international trade fairs, Online Shopping Web portal and E-commerce initiatives, as detailed in SFURTI guidelines.																								
10.	Budget for Soft interventions	Rs. 25.00 Lakhs																								
11.	Budget for Hard interventions	Rs.312.00 Lakhs																								
12.	Total Project cost (incl. Agencies cost)	Rs.477.72 Lakhs																								
13.	Means of Finance	Grant under SFURTI scheme : Rs. 299.72 lakhs IA/SPV share : Rs. 178.00 lakhs																								
14.	Post Intervention Scenario (Expected Impact)	<table border="1"> <thead> <tr> <th>S.No.</th> <th>Parameter</th> <th>Pre-intervention</th> <th>Post-intervention</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Cluster Turnover (Rs. Lakhs)</td> <td>4121</td> <td>5575</td> </tr> <tr> <td>2</td> <td>Investment (Rs. Lakhs)</td> <td>1195</td> <td>1970</td> </tr> <tr> <td>3</td> <td>Employment (Nos.)</td> <td>2450</td> <td>2800</td> </tr> <tr> <td>4</td> <td>Wages per day (Rs.)</td> <td>300</td> <td>380 - 400</td> </tr> <tr> <td>5</td> <td>Profitability (%)</td> <td>8% to 10%</td> <td>14% to 16%</td> </tr> </tbody> </table> <ul style="list-style-type: none"> ➤ Well established management team in place under the strengthened SPV. ➤ Equipped with the state of art facility for the manufacture of coir composites. ➤ Cluster's online market sale is expected to occupy at least 30% of the total production of CFC products, within 3 years of implementation, owing to the market promotion initiatives proposed. ➤ Cluster to have exclusive showroom in Madurai city with increased footfall of local tourists (as Madurai is the place for temple tourism). ➤ Emergence of specialized support service/ BDS providers and their active involvement in the development process ➤ Establishment of new units by converging various schemes of State and Central Governments (such as Coir Udyami Yojana, 	S.No.	Parameter	Pre-intervention	Post-intervention	1	Cluster Turnover (Rs. Lakhs)	4121	5575	2	Investment (Rs. Lakhs)	1195	1970	3	Employment (Nos.)	2450	2800	4	Wages per day (Rs.)	300	380 - 400	5	Profitability (%)	8% to 10%	14% to 16%
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		<p>NEEDS, PMEGP, UYEGP, etc.) resulting in additional investments in Coir sector by the cluster members</p> <ul style="list-style-type: none"> ➤ Improved access to financial capital for cluster members ➤ 100% Coverage of cluster members under social security schemes
15.	Cluster Management	<p>The Cluster is proposed to be developed under SFURTI. The Coir Board is the Nodal agency (NA) and ITCOT is the Technical Agency (TA) appointed by Coir Board. Tamilnadu Council for Enterprise Development (TACED), registered as society in 1992, located in Madurai, with wide experience in Enterprise promotion, is proposed as the Implementing Agency.</p> <p>The Special Purpose Vehicle (SPV) is registered as Private Limited Company in the name of “VAIGAI COIR CLUSTER PRIVATE LIMITED”. The total number of SPV members proposed is 22 members and the SPV will be strengthened to manage the CFC after the implementation of cluster development program.</p>

PREAMBLE

The Coir industry has to its credit a tradition and heritage of centuries. But development of Coir industry in India has begun in an organized way only in 1959. Ever since this humble beginning, Coir products have been improving in quality, quantity and variety. For historical reasons, cultivation of coconuts and extraction of Coir fibre and its further processing have taken deep roots in the state of Kerala. The rapid expansion of coconut cultivation in non-traditional areas increased the production of coconut and the industry has also developed gradually in the states of Tamil Nadu, Karnataka, Andhra Pradesh and Orissa. Coir industry in India is one of the important rural industries. It provides source of income to about 5 lakhs artisans in rural areas. In which, Women constitute about 80% of the work force in coir industry.

Coir has come a long way from the ancient uses. It is still used for agricultural and domestic purposes. It has also become an article of use in modern life either as garden article, as bags for the tea leaves, for training hops, as brush mats at the door steps, as long-wearing carpets in the corridors of the bungalow veranda, as tastefully planned floor coverings in the drawing room or as the runner on the staircase, as geo-fabric for controlling landslide or soil erosion, for protection of embankments of roads, railway and canals.

With a view to making the traditional coir industries more productive and competitive and facilitating their sustainable development, the Central government has announced Scheme of Fund for Regeneration of Traditional Industries (SFURTI). ITCOT Consultancy and Services Ltd. (ITCOT) has been appointed as Technical Agency by Coir Board for SFURTI Coir clusters in Tamilnadu. Subsequently, Coir Board has entrusted the task of preparation of Detailed Project Report for the Coir Cluster located at Madurai to M/s. ITCOT Consultancy and Services Limited, Chennai. Accordingly, ITCOT has prepared the Detailed Project Report (DPR) for submitting the same for seeking approval from the Scheme Steering Committee (SSC).

This report is prepared based on interaction with coir industrialists in the clusters, coir industry workers, industry association members, NGO's and support institutions in the district, Informal interviews with industry participants, machinery suppliers and experienced entrepreneurs, collection of secondary information etc.

The Chapter scheme of the Detailed Project Report is as follows:

Cluster Profile is given in Chapter 1. Cluster Value Chain Mapping is given in Chapter 2. Market assessment and Demand Analysis is given in Chapter 3. SWOT and Need Gap Analysis is given in Chapter 4. Profile of the Implementing Agency in Chapter 5. Project Concept and Strategy Framework are detailed in Chapter 6. Core SFURTI Project Interventions are given in Chapter 7. Detailed analysis of Soft Interventions is given in Chapter 8 and analysis of Hard Interventions is given in Chapter 9. Project Cost and Means of Finance (Core SFURTI) is given in Chapter 10. Plan for Convergence Initiatives are given in Chapter 11. Enhanced Project Cost and Means of Finance are given in Chapter 12. Project Timeline is illustrated in Chapter 13. Detailed Business Plan is given in Chapter 14. Proposed Implementation Framework is given in Chapter 15. Expected Impact is detailed in Chapter 16.

1 CLUSTER PROFILE

1.1 BACKGROUND

Madurai, the capital city of Madurai district in Tamilnadu, is situated in the bank of the river Vaigai. It is an ancient city known for its age old legacy and agile of contemporary modern lifestyle - unique place for workship and the Modern-day of living. Madurai is the third largest city and the second largest municipal corporation in Tamil Nadu. The city is closely associated with Tamil language as the Tamil Sangam were held at Madurai. Madurai is also called by different names like "City of Jasmine" (Malligai Maanagar), "Temple City" (Koilmaa Nagar), "City that never sleeps" (Thoonga Nagaram) and "City of four junctions" (Naanmadakoodal). Coir is one of the important activities undertaken in the district, which has immense scope for development and growth.

1.2 Regional setting of the Cluster

The Coir cluster is located at Sholavandan, a panchayat town in Vadipatti Taluk, Madurai district located on the left bank of the Vaigai River, sixteen miles north-west of Madurai. The river turns from its easterly direction, to bend and travel in a north south direction at Sholavandan - before turning south east and flowing towards Madurai city. Sholavandan can be stated to be lying in some sort of a valley - between the Nagamalai hills and the Sirumalai. Both these hills can be perhaps described as spurs of the Western Ghats. Sholavandan is also the name of a forest range under Madurai division. The hills have some tracts as reserved forests, which is classified as a dry deciduous forest. The geology of the land around Sholavandan is speculated to be hard rock, represented by the Charnockites and mixed Gneisses. Sholavandan being on the banks of the river Vaigai would presumably have Alluvial soil. The fertile soil around Sholavandan could be due to this land being a part of an alluvial plain.

The prime occupation of the people is Agriculture. This agriculture benefits from the access to the irrigated water of Vaigai River, through the Peranai regulator in Dindigul District. Sholavandan used to be very famous for the Betel leaves grown, which used to be exported

to other states in the subcontinent. Rice is the major crop grown; the extensive Paddy fields, around Sholavandan are visual evidence. Banana and Coconut plantations are the other major crops.

The block map of the cluster is given below:



1.3 Location

The proposed cluster is located at Sholavandan as most of the coir and allied industries are situated in and around Sholavandan area of Vadipatti block. The Geographical spread of the cluster measures about 20-25 Km radius. It includes the below rural regions in Madurai District.

Revenue Firkas	1. Thenkarai 2. Sholavandan 3. Thanichiyam 4. Alanganallur 5. Palamedu 6. Muduvarpatti 7. Neeraethan
Panchayat Unions	1. Alanganallur 2. Vadipatti
Town Panchayats	1. Alanganallur 2. Vadipatti 3. Sholavandan 4. Palamedu

1.4 Evolution of the Cluster

The Cluster is naturally evolved one. In Madurai district coconut is cultivated in an extent of 11305 hectares, mainly in Vadipatti, Sholavandan, Nilakottai, Silaiman & Usilampatti areas. The annual production during 2013-14 is estimated at 1578 lakh nuts, the productivity being 13959 nuts per hectare.

Coir, being the natural fibre extracted from the husk of Coconut, Coir industries started flourishing in the district owing to the local availability of raw material and naturally the cluster evolved. Most of the Coir and allied industries are situated in and around Sholavandan area of Vadipatti block.

1.5 Demography and Growth trends

Madurai district was bifurcated into Madurai and Theni districts in 1996 and retained Madurai as its headquarters. The district lies between 77 Degree-00” and 78 Degree-30” of

the eastern longitude and between 9 Degree-30 “ and 10 Degree-30” of the northern latitude. It has an area of 3741.73 Sq. Km and is bounded on the west by Theni district, on the north by Dindigul district, on the east by Sivagangai district and on the south by Virudhunagar.

The district has got 2 revenue divisions, 6 municipalities, 11 blocks and 7 taluks respectively. The district is endowed with a semi-arid tropical climate with normal rainfall of 827.1 mm as against 923.1 mm for the state. The predominant soil type is red soil. This type of soil is found common in Madurai, Melur, Thirumangalam, Usilampatti and Vadipatti blocks with a combination of red soil and black soil. The district has got 2 revenue divisions, 6 municipalities, 11 blocks and 7 taluks respectively.

The demographic data of Madurai district as per Census 2011 and the growth aspects with respect to Census 2001 is given below:

Description	2011	2001
Actual Population	3,038,252	2,578,201
Male	1,526,475	1,303,363
Female	1,511,777	1,274,838
Population Growth	17.84%	7.41%
Area Sq. Km	3,710	3,710
Density/km ²	819	698
Actual Population	3,038,252	2,578,201
Average Literacy	83.45	77.82
Male Literacy	89.72	86.17
Female Literacy	77.16	69.35

1.6 Socio-economic aspects

The significance of coir industry arises primarily from the fact that a large a number of people from the economically weaker sections of the society depend on this industry. At the current level of production of coir, the industry utilizes about 40% of the annual yield of coconut husk in the country. There is possibility to increase the utilization to at least 60% of

husk production. Therefore, there exists vast potential for stepping up of production of coir in India. The increased utilization of coconut husk abundantly available in the coconut growing states of India provides scope for development of fibre processing sector and thereby augmenting rural employment.

The Coir related activities undertaken in the cluster, annual production and turnover in the cluster is given below:

Activity	No. of Units	Annual Production (in MTs)	Annual Turnover (Rs. Crores)
Fibre Extraction	30	13500	21.60
Yarn Spinning	20	1620	5.18
Coir Pith Block	15	12600	13.23
Hand rats/ Manual Spng.	500	300	1.20

The total turnover of coir based activities in the cluster is estimated at Rs.41.21 Crores and the range of income level of labors employed is Rs.200/- to Rs.300/- per day.

1.7 Human Development Aspects

The total number of workers category wise as per censuses 2011 is given below:

Main Workers (2011 Census)	
a. Total Workers	13,54,632
b. Male Workers	9,02,704
c. Female Workers	4,51,928
d. Rural Workers	6,27,737
e. Urban Workers	7,26,895
f. Cultivators	81,352
g. Agricultural Labourers	2,87,731
h. Household Industry	39,753
i. Other Workers	7,65,066
i. Marginal Workers	1,80,730
Non-Workers	16,83,620

The total number of workers engaged in the Coir activity gender wise is given below:

Activity	Male	Female	Total
Fibre Extraction	80	670	750
Yarn Spinning	20	80	100
Coir Pith Block	60	540	600
Hand rats/ Manual Spinning.	100	900	1000
Total	260	2190	2450

The income level for the employed labors in the cluster is Rs.300/- for male workers and Rs.200/- for female workers per day.

The income level of members engaged in manual spinning in the cluster is in the range of Rs.400/- to Rs.450/- per day.

1.8 Key Economic Activities in the region

Madurai district of Tamilnadu is considered as the most important district in terms of industrial development. Some of the major companies making a steady business in Madurai are TVS India, Fenner, TAFE etc. Moreover, the recent survey by CII (Confederation of Indian Industries) has reported that Madurai city has high potential to evolve into a ‘manufacturing hub’ in South India as well as the city can be endorsed as the best tourism corridor and knowledge gateway of South India. The growth has led to set up and development of many industrial estates in the city. It includes Hosiery Estates in Urangaanpatti, Automobile Industrial Estate in Kappalur, SIDCO Industrial Estate in K.Pudur and Kappalur.

Madurai is noted for temple tourism, as Madurai is also known as ‘Temple town’, one of the famous religious places in South India. The city holds temples built by Madurai Nayaks and Pandiyan Kings in the Dravidian manner of architecture. As the city is covered with huge temples, ancient architecture and historical monuments, tourists from different states and countries explore Madurai for its rich heritage and culture.

Textiles Industry occupies major share of the district’s economy. Being famous for fine painted Saree bordered and Sungidi Sarees, tourists visiting Madurai throng shopping areas for purchase of textiles products. Textile mills like Thiagarajar Mills and Paramount in Madurai are well known all over India. The companies manufacture around 60,000 meters of fabrics every day, which has become one of the leading exporters and brand in India. Apart from this, there are a number of textile industries operating in Madurai. Being famous for sungudi sarees, batik and cotton fabrics, Madurai’s best business areas for textiles are

Avanimoola, Thevangu Chetty Choultry, Puthumandapam and Chithirai Street. There are equal number of handlooms and handicrafts units in Madurai.

In recent year, the Information Technology (IT) industries in Madurai have made a great mark in the state economy. The growth and development in major IT areas like software development, human resource, Business Process Outsourcing (BPO), accounting and data entry are at high rates. Some of the important multinational companies in Madurai include Honeywell Technologies India, Oracle, HCL, Sutherland Global. Moreover, Tamilnadu government has promoted two IT SEZs in Madurai, to cater the requirement.

Madurai district is an agrarian district, producing major crops such as paddy, millets, pulses, cotton, oil seeds and sugarcane. Moreover, Madurai is famous for Jasmine flower production, to the extent that Madurai is referred as ‘Malligai Maanagar – the City of Jasmine’. Tamilnadu refer the best jasmine as ‘Madurai Malli’. The size and enchanting fragrance of Madurai malli mesmerizes everyone. Jasmine cultivation is done near Madurai – foothills of Kodaikanal. The demand is all over India and it is sold to Salem Bangalore, Kochi, Thiruvananthapuram, Hyderabad, Calcutta and Mumbai. It is also exported to Singapore and Middle East for preparing perfumes.

In Madurai district coconut is cultivated in an extent of 11305 hectares, mainly in Vadipatti, Sholavandan, Nilakottai, Silaiman & Usilampatti areas. The annual production during 2013-14 is estimated at 1578 lakh nuts, the productivity being 13959 nuts per hectare. The Coir industry is one of the major agro processing industry and Sholavandan, Vadipatti is known for the coir activity in Madurai district. The details of the coir units in the cluster area is given below:

Activity	No. of Units	Annual Production (in MTs)	Annual Turnover (Rs. Crores)
Fibre Extraction	30	13500	21.60
Yarn Spinning	20	1620	5.18
Coir Pith Block	15	12600	13.23
Hand rats/ Manual Spng.	500	300	1.20

It is observed that members engaged in manual spinning is appreciable in the cluster. Also observed, the cluster’s production is limited to intermediate products only and the scope for value addition and production of finished end-user products is immense.

1.9 Infrastructure Details

The Revenue administration divisions and local bodies in Madurai District is given below:

Revenue Administrative Divisions	
Revenue Divisions	2
Revenue Taluks	10
Revenue Firkas	52
Revenue Villages	670

Local Bodies	
i. Corporations	1
ii. Municipalities	3
iii. Town Panchayats	9
iv. Village Panchayats	420

INDUSTRIAL ESTATES IN MADURAI DISTRICT

In Madurai District Three Industrial Estates are located at the following places.

1. SIDCO Industrial Estate, K.Pudur, Madurai
2. SIDCO Industrial Estate, Kappalur, Madurai
3. SIDCO Industrial Estate, Uraganpatti, Madurai
4. Madurai Co.op. Indl. Estate, Kappalur, Madurai

1. SIDCO Industrial Estate, K.Pudur, Madurai

Total Extent of land 56,054 acres
No. of work sheds 74 sheds
51 Sheds Under Lease basis cum sale basis
13 Sheds Outright purchase scheme
10 Tiny sheds Under full cost basis

2. SIDCO Industrial Estate, Kappalur, Madurai

Total Extent of land 136 Acres
Developed plots 148 (in various size)
Allotted to 133 entrepreneurs
Extend of further land 122.749 Acres allotted to

1. Indian Oil Corporation Ltd

2. Hindustan Petroleum Corpn. Ltd

3. Bharath Petroleum Corpn. Ltd

3. SIDCO Industrial Estate, Uraganpatti, Madurai.

It is a private Industrial Estate owned by Madurai Hosiery Industrial Association.

Extent of land 69 acres

No. of work sheds 147 Nos.

4. Automobile Cooperative Industrial Estate, Kappalur, Madurai

This is an Industrial Cooperative Estate forwarded by owners of Automobile Service Centre in order to integrate the services.

Extend of land 23.90 Acres

No. of developed plots 201 Nos

EDUCATIONAL INSTITUTIONS

University	1
Medical College- Allopathy	1
Medical College- Homeopathy	1
Engineering Colleges	7
Agriculture College	1
Arts & Science College	33

MEDICAL / HEALTH CARE INFRASTRUCTURE

Hospitals	8
Dispensaries	19
Primary Health Centres	51
Health Sub Centres	324
Other Medical Institutions	20

FINANCIAL INSTITUTIONS

Nationalized Bank Branches	140
Scheduled Bank Branches	43
Cooperative Bank Branches	27
Land development Bank Branches	8
TIIC, NABARD, SIDBI, NSIC, KVIC	1

TRANSPORT INFRASTRUCTURE

Road Length (in Km)

National Highways	321
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State Highways	337
Corporation and Municipal Roads	364
Town Panchayat /Township Roads/Panch.Union	1349
Railway Length (in K.m)	
a. Route Length	
Broad Gauge	62.935
Railway Stations	10

AIRPORT

One Airport is available in this district, which is located at Perungudi, 15kms from the city. The Government of India have taken efforts to modernize the Madurai Airport and have plans to make it to the international standards in order to promote tourism.

2 CLUSTER VALUE CHAIN MAPPING

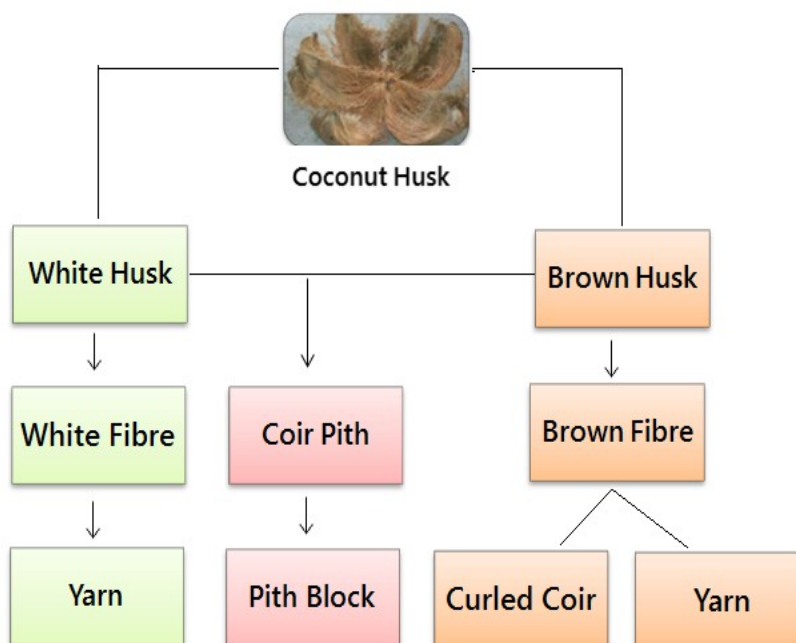
2.1 Product Profile

The following products are produced in the cluster presently.

- Coir Yarn
- Coir Fibre Extraction
- Coir Pith Block

2.2 Production Process

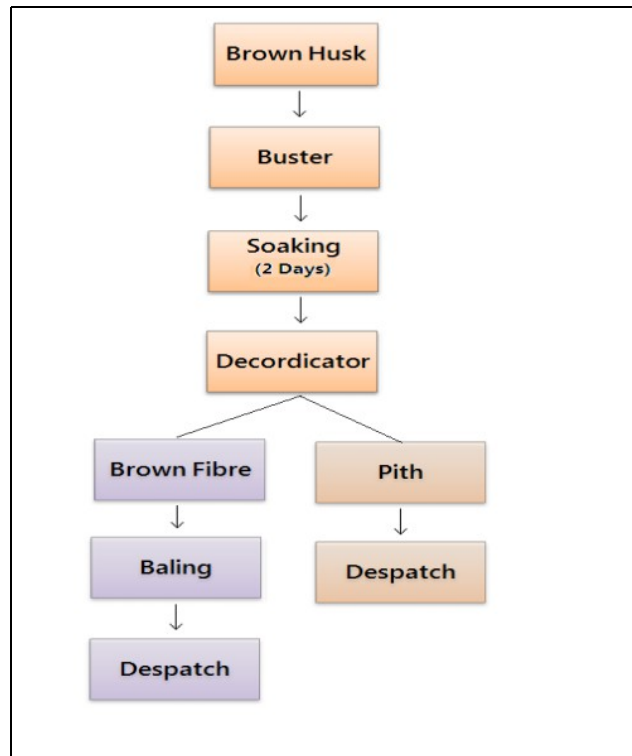
The Product range existing in the cluster are Coir Fibre, Yarn and Pith block. The product chart of the cluster is given below:



Coir Fibre:

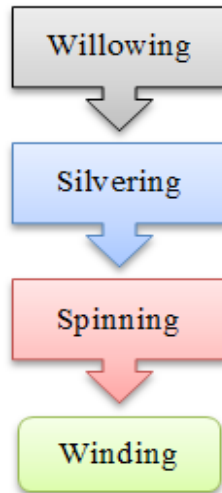
The coconut husk (raw material) is collected from the farms and stored. The collected husk is soaked in water. Then soaked material is fed into the decorticator wherein the fibre and pith are separated. The fibre is dried in the sunlight and is pressed in the form of 35-Kg bundles by using bailing press and dispatched for sales.

The process flow of fibre extraction from Brown husk is given below:



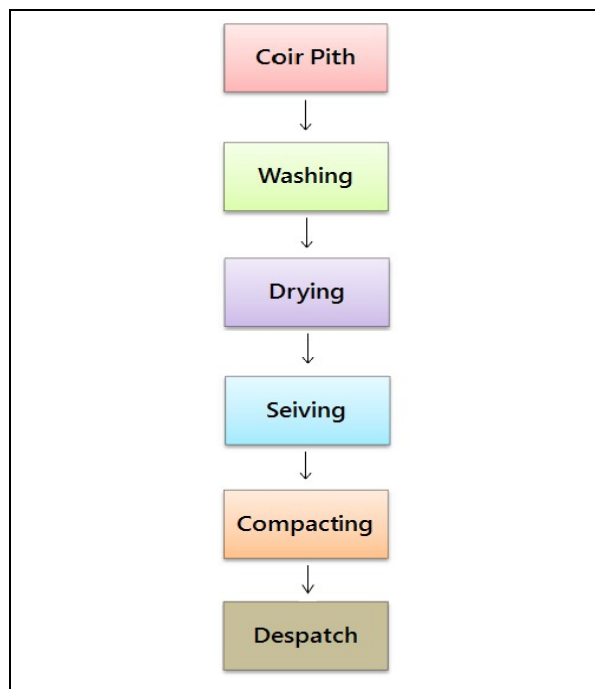
Coir Yarn:

Coir fibre obtained from fibre extraction units and is wetted by spraying water. After 2-3 hours, the wetted fibre is passed through the willowing machine to remove the impurities and the place the fibre and parallel to each other. The fibre is then fed in to slivering machine wherein it is converted in to sliver form. The slivers are spun into yarn as per specifications in the spinning machine. The yarn is then cleaned and wound in to rolls and is now ready for the market. Coir yarn spinning is similar to cotton yarn spinning. The process involved is depicted below:



Coir Pith Block:

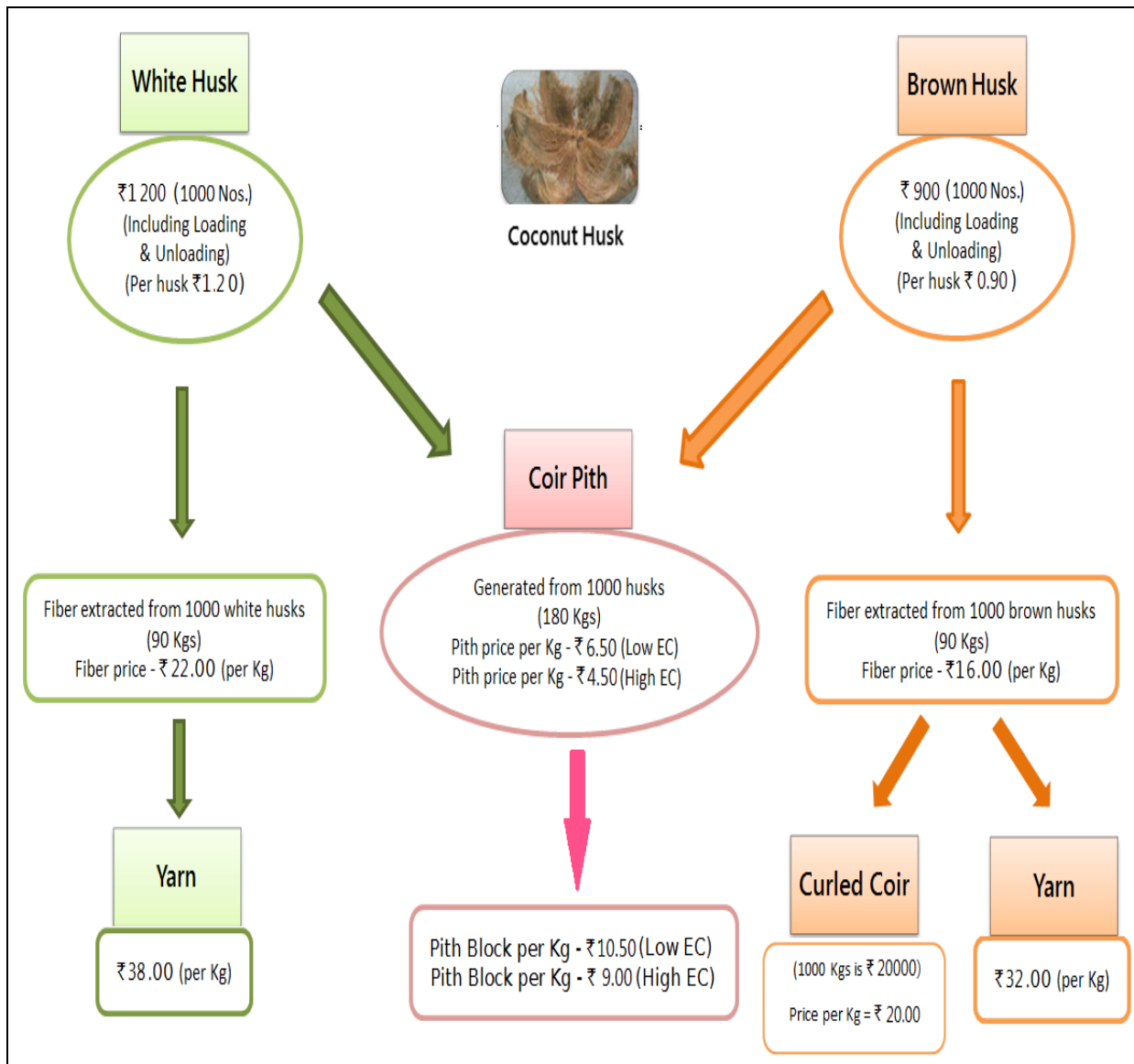
The by-product obtained during the process of Coir Fibre Extraction is Coir Pith. The raw coir pith (high EC) is received and washed in the soft water to reduce the EC. The low EC pith is dried in the yard and the dried pith is subjected to sieving / mixing process. The resultant pith is fed into the compacting machine in which the pith is converted into blocks. Then the blocks are packed and then dispatched to sales. The process flow chart for the Coir pith block making is given below:



High electrical conductivity (EC) of coir pith is the major constraint in using it as growing medium. The higher level of EC in pith is diluted by washing it with good quality fresh water. Hence washing is the significant stage in the process. Low EC pith is suitable for the horticultural applications.

2.3 Value Chain Analysis

The incremental value of the cluster products from the basic raw material to the final product manufactured in the cluster is given below:

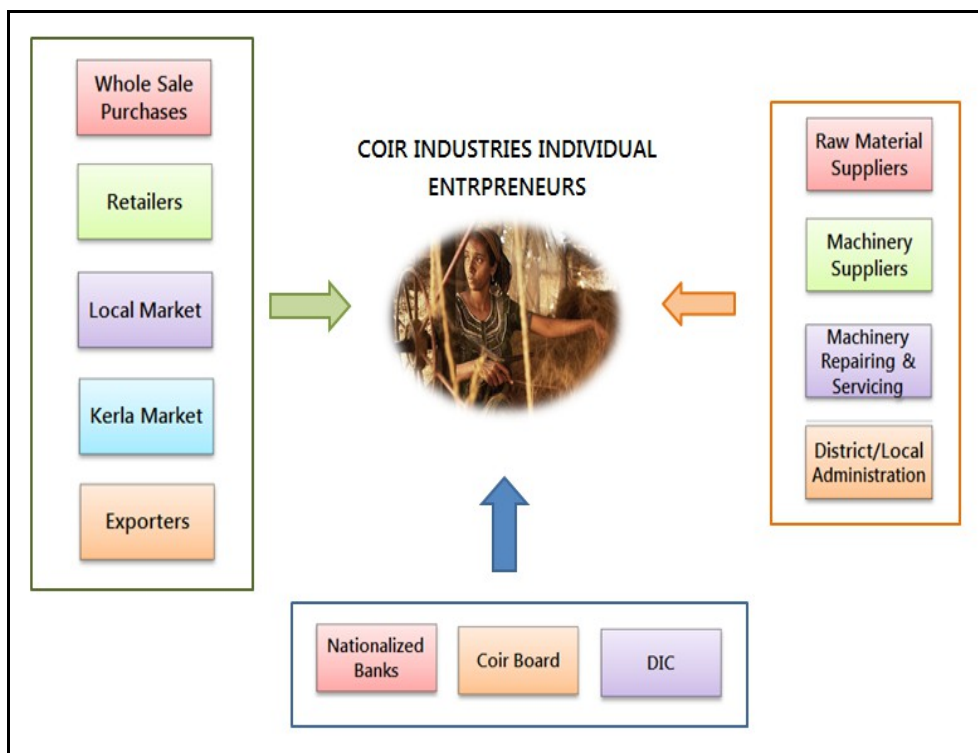


It is observed that the value addition in the cluster is limited to intermediate product level and the need and scope for value addition for coir sector in the cluster is considered significant. The cost of Green husk including loading and unloading is valued at Rs.1.20,

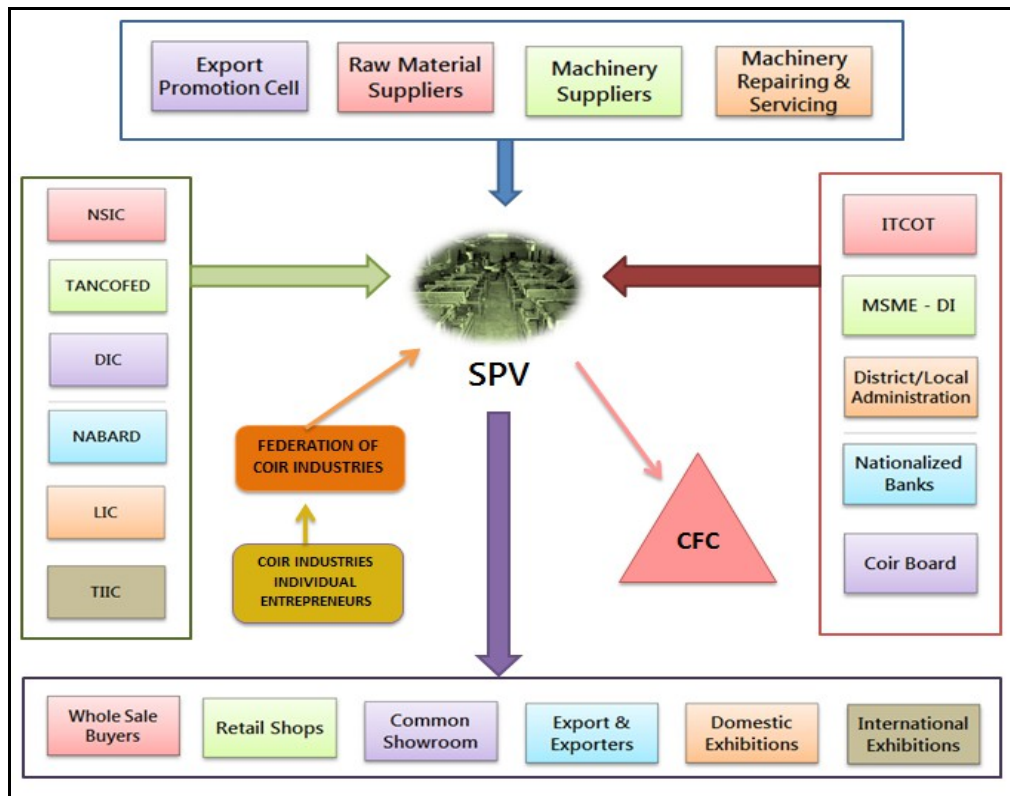
which is incremented to Rs.22.00 per Kg. of fibre, which is further incremented to Rs.38.00 per Kg. of yarn. Similarly the cost of Brown husk including loading and unloading is valued at Rs.0.90, which is incremented to Rs.20.00 per Kg. of fibre, which is further incremented to Rs.32.00 per Kg. of yarn. The cost of raw coir pith including loading and unloading is valued at Rs.4.50 per kg., which is further incremented to Rs.10.50 per Kg. Low EC – 5 Kg. Pith block.

2.4 Cluster Map

The **Pre-intervention Cluster map** depicting the existing linkages of the cluster is as given:



The **Post-interventions Cluster map** depicting the linkages after the implementation of cluster development initiatives is given below:



2.5 Principal Stakeholders

COIR BOARD

Coir Board is the Nodal Agency for the SFURTI scheme. The coir Board set up by the Government of India under an act of parliament the coir Industry act 1953. Coir Board provides financial, market development, skill training assistance for the development of coir Industry and also extends the technical guidance and advice for setting up of new units as well as for renewal/modernization of existing units for development and increasing productivity, quality up-gradation etc.

DISTRICT INDUSTRIES CENTRE (DIC)

The District Industries Centre, located in all district headquarters, is the State government body functioning under the aegis of department of industries and commerce. DIC implements various schemes (UYEGP, NEEDS, PMEGP etc.,) to promote MSME sector.

TAMILNADU CORP. FOR DEVELOPMENT OF WOMEN (TNCDW)

TNCDW is one of the government agencies implementing many schemes for Self Help Groups. They also implement Tamil Nadu State Rural Livelihood Mission (TNSRLM) towards poverty eradication.

NABARD

NABARD is the financial institution focusing on Agriculture and Rural Development activities. Presently, they are also focusing on artisan cluster development.

LEAD BANK

Canara Bank is the lead bank in Madurai district. Lead bank will coordinate the credit activities of banks in the district in addition to performing leading role in schemes launched by State/Central governments.

ITCOT Consultancy and Services Limited (ITCOT)

ITCOT Consultancy and Services Limited, popularly known as ITCOT, is the state technical consultancy organization, promoted by all India financial institutions, State Development Corporations and Commercial Banks. ITCOT has wide experience in providing support services to micro and small enterprises under various government schemes. ITCOT, having its head office at Chennai, has project offices at Erode and Salem involved in enterprise promotion and development. ITCOT has been empaneled as Technical Agency under SFURTI scheme by KVIC and Coir Board.

TAMIL NADU AGRICULTURAL COLLEGE (TNAC)

TNAC, the premier agricultural college, is located in Madurai, which is about 22Km from the cluster. TNAC is the leading Agro technology provider in India.

Commercial & Cooperative Banks

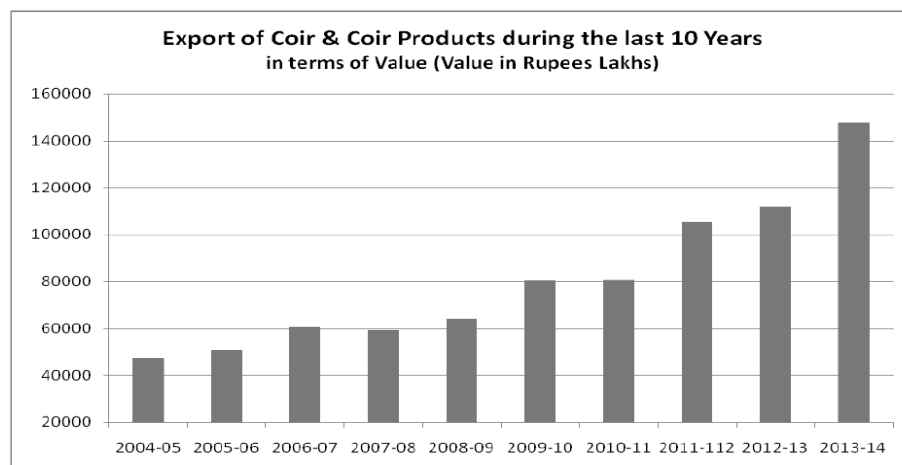
There is a good network of commercial Cooperative Banks in the cluster. They offer both cash credit and term loan facilities to the coir industry. However, institutional finance for coir industry is limited and there is a large gap between the need for the credit and its availability.

3 MARKET ASSESSMENT AND DEMAND ANALYSIS

Coir industry is of great importance to the coconut producing states in India, as it contributes significantly to the economy of rural areas. Kerala is the largest producer of coconut, contributing as much as 45% of country's total production, whereas Tamilnadu stands second in cultivation of coconut and first in production of brown coir fibre in the country. The State wise potential for production of Coir Fibre is given below:

S.No	State	Area (1000 Ha)	Production (in million nuts)	Coir fiber potential @ 60% husk utilization (MT)
1	Kerala	766.00	7057.88	338778
2	Tamilnadu	430.70	6211.21	298138
3	Karnataka	511.00	5915.33	283936
4	Andhra Pradesh	142.00	1985.00	95280
5	Orissa	53.90	403.25	19356
6	West Bengal	29.10	395.28	18973
7	Gujarat	20.90	340.58	16348
8	Assam	20.80	304.47	14615
9	Other States/UTs	96.30	738.20	35403
	Total	2070.70	23351.20	1120827

The export of coir products are in the increasing trend during the last 10 years as illustrated in the graph below:



The major products that are exported are Coir fibre, Coir pith and Mats. It has been observed that the percentage growth in value of export of Coir fibre has been 58.77% in 2013-14 compared to the previous year. Also the percentage growth in value of export of Coir pith has been 38.20% in 2013-14 compared to the previous year. The Product wise export details of coir products in 2013-14 is given below:

Item	Q=Quantity in M.T		V= Value in Rs.Lakhs			
	April -2013 - March 2014		April-2012 - March- 2013		%Growth Cumulative	
	Q	V	Q	V	Q	V
Coir Fibre	173902	32878.11	140693	20707.66	23.60	58.77
Coir Yarn	4247	2848.26	4202	2387.22	1.07	19.31
Handloom mat	22609	23623.82	24151	22810.10	-6.38	3.57
Powerloom mat	234	278.36	2	3.15	11600.00	8736.83
Tufted mat	43752	41776.39	37289	33572.91	17.33	24.43
Handloom matting	3425	3353.91	1418	1702.77	141.54	96.97
Powerloom matting	0	0	0	0	0.00	0.00
Geo textiles	4468	3503.78	3597	2628.74	24.21	33.29
Coir rugs & Carpet	93	105.99	95	133.38	-2.11	-20.54
Coir rope	498	390.17	420	282.41	18.57	38.16
Curled Coir	11263	2947.93	8883	2112.46	26.79	39.55
Rubberised Coir	965	1560.76	322	495.01	199.69	215.30
Coir pith	271495	34173.23	208399	24727.61	30.28	38.20
Coir other sorts	89	163.13	30	39.33	196.67	314.77
Total	537040	147603.84	429501	111602.75	25.04	32.26

Quantities Rounded

The percentage of share of each product with respect to total exports, both in Quantity and Value for the year 2013-14 is given below:

Composition of Export (Share in %)

Name of the item	Apr2013-March 2014		Apr2012-March 2013	
	Qty %	Value%	Qty %	Value %.
Tufted Mat	8.15	28.30	8.68	30.08
Coir Pith	50.55	23.15	48.52	22.16
Handloom Mats	4.21	16.00	5.62	20.44
Coir Fibre	32.38	22.27	32.76	18.55
Geo Textile	0.83	2.37	0.84	2.36
Coir Yarn	0.79	1.93	0.98	2.14
Curled Coir	2.10	2.00	2.07	1.89
Handloom Matting	0.64	2.27	0.33	1.53
Rubberised Coir	0.18	1.06	0.07	0.44
Coir Rope	0.09	0.26	0.10	0.25
Coir Rugs & Carpet	0.02	0.07	0.02	0.12
Coir Other Sorts	0.02	0.11	0.01	0.04
Powerloom Mat	0.04	0.19	0.00	0.00
Total	100.00	100.00	100.00	100.00

The Top five County wise Exports of Coir and Coir products in the year 2013-14:

S. No	Country	Quantity (in MTs)	Value (Rs.Lakhs)	Quantity (%)	Value (%)
1	China	192110.62	36050.66	35.77	24.42
2	USA	55091.03	30026.05	10.26	20.34
3	Netherlands	53786.54	10870.04	10.02	7.36
4	UK	11987.01	8600.98	2.23	5.83
5	South Korea	67042.97	7020.54	12.48	4.76

The exports of Coir and coir products from India during the year 2014-15 registered an all time high record of Rs.1630.33 crores with an increase of over Rs.154 crores from the previous year. The total exports of coir and coir products from the country was worth Rs.1476.03 crores in 2013-14. During the year 2014-15, 6,26,666 MT of coir and coir products were exported from the country as against 5,37,040 MT exported during the preceding year. The increase in quantity and value works out at 16.7% and 10.5% respectively in comparison with 2013-14 figures.

During the year 2014-15 coir and coir products from the country were exported to 115 countries around the globe. China topped the importing countries with 28.6% in value and 39% in quantity. USA emerged as the second largest importer of coir products from India with a share of 21.3% in value and 12.4% in quantity.

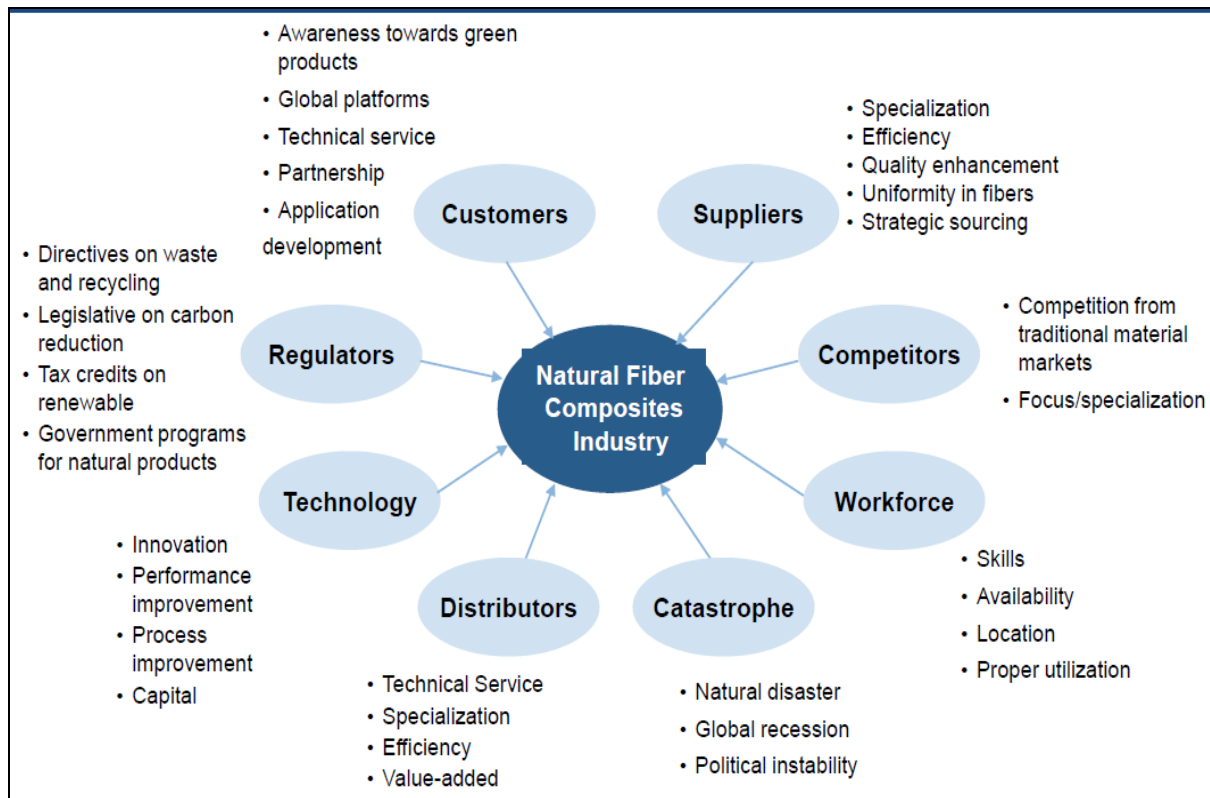
Coir Composite Panels and Coir Wood Furniture

A demographic trend suggests that India is on the verge of large scale urbanisation over the next few decades. With more than one crore population getting added to urban areas, India's urban population is expected to reach about 81 crore by 2050. It is evident that our India is currently experiencing a construction boom and there are no indications that this situation is going to change in the immediate future. In fact it seems very likely that the boom will continue unhindered for many years, as India's rapid economic growth creates a need for modern housing, shopping malls, sports facilities, schools and other public buildings. This will create good demand for wooden panels. Based on demographic trends by 2011 there will be 115 million urban housing units and 202 million rural units. Forecasts of likely growth in housing, based on population growth of 2% per annum, indicate that the building stock will rise by 6 million units each year.

Composites are emerging with an increasing role in building materials to replace timber, steel, aluminium, concrete etc. Composites are being used for prefabricated, portable and modular buildings as well as for exterior cladding panels. Composites also find extensive applications in shuttering supports, special architectural structures imparting aesthetic appearance, ergonomics, large signages etc. besides longer life and low maintenance. Their benefits of corrosion resistance and light weight have proven attractive in many low stress applications.

Indian efforts centre around developing cost effective building materials as well as for catering to the housing needs of urban & rural poor. With the scarcity of wood for building products, the alternative, which merits attention, is to promote the manufacturing of low cost fibre reinforced building materials to meet the demands of the housing & building sectors. Natural fibres as reinforcing agent in composite matrices are attracting more attention for various low-cost building products. The natural fibres are available locally and extracted from renewable resources. The approximate estimate of production of natural fibres in India is more than 350 million tones. The present requirement of wood in India is estimated at about 40 million cubic metres, whereas, the estimated production is about 25 million cubic metres only.

Since coconut is available in India in abundance, the second highest in the world after Philippines, the coir fibre has been recognized as highly durable fibre in all types of matrices viz. polymer, bitumen, cement, gypsum, flyash-lime, mud etc. Coir composite panel being an important building material which is a replacement of wooden panels will be of great demand in India in future. The business dynamics and the stakeholders of Natural Fibre Composites industry is given below:



Properties of Coir Composites

- Coir-composites are Phenol Bonded Board.
- Stronger as it is made of Fibre known for its strength and load bearing properties.
- Attractive natural look and can be used as it is.
- Can be painted, polished or laminated.
- Water proof with minimum surface absorption
- More economical than other phenol bonded boards.
- Good smooth appearance on both sides.
- Strong and rigid
- Termite and insect resistant.
- Flame Retardant.
- Environment friendly
- Low Paint consumption

Applications

- Building industry as doors, door inserts, door frames, wall paneling, flooring, false-roofing, partition panels, roofing sheets etc.
- Furniture industry as table, chairs, wardrobes, computer table, cot, TV cabinets, dining table, table tops for cafeteria, school benches etc.
- Automotive industry as backing for seats, roof insulation boards, side door paneling, railway seats, walls, roof etc.
- Railways, Ship Building and Heavy Transport Vehicles Building Industries.

Garden Articles:

Garden articles are the products made out of Coir fibre. From poles to plant pots to hanging baskets, coir makes just about every accessory that is essential for modern day gardening. Environmental protection has become one of the burning issues of the day in most parts of the world. This has led to a growing demand for products made of environment friendly materials. Preservation of water is also a growing concern. Hence the market potential, both domestic and international, for biodegradable garden articles from coir which can preserve water, is immense.

Coir Handicrafts

In the changing world scenario, craft products form a part of lifestyle products in international market. The impact is due to the changing consumer taste and trends. In view of this, it is high time that the Indian handicraft industry went into the details of changing designs, patterns, product development, requisite change in production facilities for a variety of materials, production techniques, related expertise to achieve a leadership position in the fast growing competitiveness with other countries. Coir handicrafts attracts consumer attention in view of its versatile nature eco-friendly property. Moreover low capital investment and availability of cheap labour are considered the market drivers for the Coir handicrafts in domestic and international market arena.

3 SWOT AND NEED GAP ANALYSIS

STRENGTHS:

- Existence of Fibre Extraction units to feed in the raw material requirement of the proposed CFC
- Guidance of Coir Board –CICT, Bangalore to address the technical aspects of the proposed CFC.
- SPV include members engaged in Wood furniture making, which is considered to be supportive for marketing the proposed CFC product viz. Composite panel boards & Coir wood furniture
- Existence of engineering infrastructure such as workshops and lathes.
- Readiness of the new generation entrepreneurs to enter into this trade
- Well established physical infrastructure such as road, rail, port, power etc.
- Excellent network of commercial and co-operative banks in the cluster.
- Presence of Support institutions such as Coir Board, District Industries Centre, Commercial banks, SIDBI, NABARD etc.

WEAKNESSES:

- Absence of collective/collaborative efforts so far, as no registered association for coir exists in the district.
- As coconut palm does not withstand prolonged spells of extreme weather/ climatic variations, the uninterrupted availability of Coconut husk (basic raw material for coir sector) depends on weather conditions, which results in the scarcity of raw material due to hot/dry summer.
- Limited availability of technically skilled labour force.
- Limited usage of technological tools like ICT applications.
- Lack of awareness on the incremental benefits of manufacturing of value added finished products.
- Lack of formal networks for marketing and input procurement

- Limited contact with BDS providers and Technical Institutions.

OPPORTUNITIES:

- Huge Market potential for Coir Wood products if people accept the advantages of coir wood as compared to plywood.
- Potential for product diversification and value addition from existing products.
- Good scope for manufacturing of value added /diversified products
- Implementation of SFURTI Scheme for focused development of the cluster.

THREATS:

- Competition from the conventional Plywood Industry.
- Competition from products such as Nylon, Jute Sisal fibre etc.
- Competition from coconut growing countries viz.: Sri Lanka, Indonesia & Philippines etc.
- Utilization of husk for Bio-fuel purposes.

NEED GAP ANALYSIS:

The key concern areas of the cluster are identified to be:

- Cluster's present production is limited to intermediate products such as fibre, yarn etc., which fetches reduced margin only. Lack of awareness on the benefits of graduating to production of value added finished products.
- Production of value added products is less with respect to the availability of raw material and market requirements.
- Absence of collective/collaborative efforts in the cluster so far, to undertake common development initiatives
- Solely depend on the local trader /middle man/ marketer to sell their products even through there is huge scope for direct marketing.
- Lack of initiatives towards new product/design development

4 PROFILE OF THE IMPLEMENTING AGENCY

Tamil Nadu Council for Enterprise Development (TACED), a registered society established in 1992, located in Madurai City is proposed as the implementing agency for the Madurai Coir Cluster. The profile of TACED is given below:

I. Institutional Structure / Registration Details																																	
1	Name of the Institution Tamilnadu Council for Enterprise Development (TACED)																																
2	Legal Status Registered under Societies act																																
3	Date of Incorporation / Registration Registration No.199/92, Dated: 17.7.1992																																
4	Registered Address II floor, Saradha Shopping Complex, Simmakkal, Madurai – 625 001. Tamilnadu																																
	Office Address / Locations II floor, Saradha Shopping Complex, Simmakkal, Madurai – 625 001. Tamilnadu																																
5	Affiliated to Coir Board No																																
II Governance Structure																																	
6	Composition of the Executive Board / Trustees / Governing Body/ Managing committee and Background of Member																																
	<table border="1"> <thead> <tr> <th>#</th> <th>Name of Member</th> <th>Designation</th> <th>Background / profile</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Dr.P.N.Narayanaraja</td> <td></td> <td>Hon Secretary, Boys Town Society</td> </tr> <tr> <td>2</td> <td>Mr J.R.Hariharan</td> <td>Secretary</td> <td>Business</td> </tr> <tr> <td>3</td> <td>Mr.P.Kumaresan</td> <td>Treasurer</td> <td>Business</td> </tr> <tr> <td>4</td> <td>Prof. Gurubharathy</td> <td>Member</td> <td>Social worker</td> </tr> <tr> <td>5</td> <td>Mr.Mohamed Nazar</td> <td>Member</td> <td>Business</td> </tr> <tr> <td>6</td> <td>Mr.M.Nazeer</td> <td>Member</td> <td>Industrialist</td> </tr> <tr> <td>7</td> <td>Mr.P.Subramanian</td> <td>Member</td> <td>Development officer</td> </tr> </tbody> </table>	#	Name of Member	Designation	Background / profile	1	Dr.P.N.Narayanaraja		Hon Secretary, Boys Town Society	2	Mr J.R.Hariharan	Secretary	Business	3	Mr.P.Kumaresan	Treasurer	Business	4	Prof. Gurubharathy	Member	Social worker	5	Mr.Mohamed Nazar	Member	Business	6	Mr.M.Nazeer	Member	Industrialist	7	Mr.P.Subramanian	Member	Development officer
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III	Operational Profile	
7	Major objectives – Vision, Mission, Goal of the organization	<p>Core objective Entrepreneurship Development and Skill Development</p> <p>Core activities Project identification – Entrepreneurial Guidance - Project Consultancy – Technology Sourcing – Micro Enterprise Promotion – Women Entrepreneurship Promotion, Entrepreneurship Development Programs etc.</p> <p>Major Programs Dissemination of business information through seminars, workshops, organizing Meet, providing trainings, consultancy, project identification, entrepreneurial guidance – promotion of viable business opportunities</p>
8	Focus areas of operation	Support services to Micro and Small Enterprises Entrepreneurship Development program (EDP) Sponsored by DIC, Business Meets, BOG (Business Opportunity Guidance), TaP (TACED Placement Services), Skill Development Initiatives
9	Provide key project / activities being undertaken by the IA – Brief description including the project scope, size and duration (<i>mention specific experience in the area/ sector of the proposed project</i>)	<p>Recognized as <u>UDYAMI MITRA</u> under the scheme of Rajiv Gandhi Udyami Mitra Yojana (RGUMY) of Ministry of MSME, Government of India, to provide support services to MSME sector</p> <p>Coir Sector: Provided support services to micro enterprises and facilitated establishment of units in Coir sector under PMEGP, NEEDS & REMOT schemes. Also introduced cluster based initiatives with coir entrepreneurs in Nilakottai and Vadipatti blocks of Madurai district. Conducted Coir based trainings for prospective entrepreneurs and provided awareness on the potential of coir sector.</p> <p>Ready Made Garments: TACED has close link with Garments manufacturers in Madurai and in southern parts of Tamilnadu. Being the Advisor for Tamilnadu Garments Mfrs Association, TACED extends consultancy support to association to enhance the market size and strengthen production base.</p> <p>Garments Trading center –GGTC TACED works as implementing agency, for the project of setting up of a trading center, in Madurai. TACED play a key role right from conception, networking stake holders,</p>

5 PROJECT CONCEPT AND STRATEGY FRAMEWORK

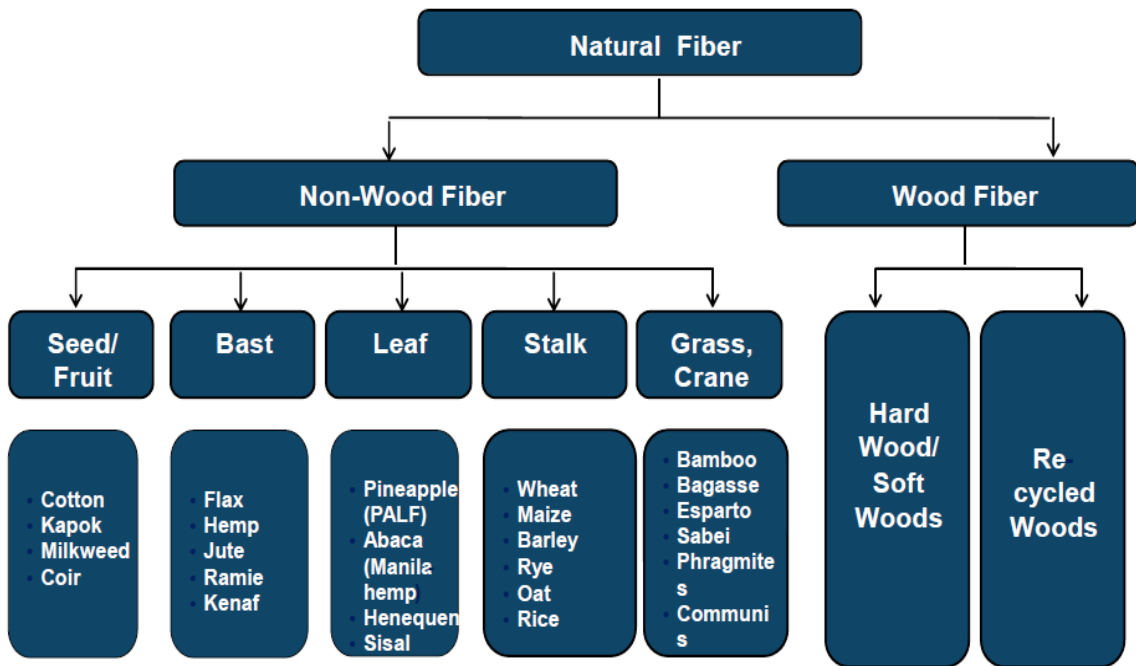
5.1 Project Rationale

The project rationale is to rejuvenate the existing product mix of the cluster and to enhance the competitiveness of cluster products, both in domestic and export markets, thereby elevating the cluster to a higher level in terms of value addition, turnover, employment and foreign exchange earnings.

5.1.1 Rationale for Coir Composite Panels Manufacturing:

INDIA IS a timber-deficient country. Against an annual requirement estimated at 40 million cubic metres, the present availability from domestic sources is only about 25 million cubic metres. With our natural forest cover dwindling rapidly due to over-exploitation and little land available for plantation forestry, attention has shifted to substitutes for wood to meet the rising demand for panel products. Particle and medium density boards from renewable materials such as bagasse and agricultural straw are in use but are not able to measure up to the quality and standards of wood-based panel products. The general classification of Reinforced Natural Fibre is given below:

Reinforced Natural Fiber Classification: Vegetable fibers are used as reinforced material, divided into two segments wood and non wood fibers



The Physical properties of various Natural fibres are given below:

Properties	Unit	Coir	Flax	Hemp	Jute	Ramie	Sisal
Density	g/m ³	1.25-1.5	1.4	1.48	1.45	1.5	1.26-1.33
Diameter	µm	100-450	100	25	60	40-50	100-300
Cellulose Content	%	36-43	62-72	67-75	59-71	68-76	60-67
Hemicellulose Content	%	0.2	16-18	16-18	12-13	13-14	10-13.9
Lignin Content	%	41-45	2-2.5	2.8-3.3	11.8-12.9	0.6-0.7	8-12
Microfibrillar angle	deg.	30-45	10	6.2	7-9	7.5-12	10-20
Tensile Strength	Mpa	105-175	800-1500	550-900	400-800	500-870	600-700
Young's Modulus	Gpa	4-6	60-80	70	10-30	44	38
Elongation at break	%	17-47	1.2-2.4	1.6	1.16-1.8	1.2	3.64-5.12
Moisture Absorption	%	10	7	8	12	12-17	11

Natural Fibre Composites finds its use in various applications viz. Construction, Automotive, Electrical & Electronics, Sporting goods etc. The application area, utility and technology adopted are depicted below:



Now, using concept technology from the Coir Board, private companies have developed the commercial scale manufacturing process for producing timber-grade panelling material based on composites using a coir matrix.

Coir is considered as an apt choice, because of its superior properties. Coir is a long and hard fibre, is strong due to its high lignin content (45.84 per cent against 39.84 per cent for teak), is more resistant than tropical timber against rotting under wet and dry conditions, is naturally termite and borer proof and is cheap". One unit of coir ply with a production capacity of 40 cubic metres a day would be able to save 22 trees a day or about 264 acres of tropical forest every year.

The uniqueness about coir is its high availability throughout the year, unlike other agricultural fibres, which have been tried out as wood substitutes. The potential availability of coir in the country is around 5 million tonnes annually.

The basic process involved in making coir ply comprises forming non-woven mats of the coir fibre (with the fibres standing end-on to provide stiffness), spraying the mats with phenol formaldehyde resin, hot-pressing the sheets in a multi-daylight hydraulic press with a heating system and later trimming to required sizes.

The density of the ply can be changed with the pressure used. Depending on densities, the coir composite can be used like particle board, ply board, medium density fibre board or hard board. Various organisations like the Railways, CPWD, PWDs, HUDCO to name a few have cleared this product and plan to use it in future.

The proposed project will procure coir fiber (raw material) from all the nearby industries (mostly Micro Enterprises) in the region thus enhancing their profits by avoiding the middleman/agents, who hitherto procure coir fiber for scanty rate, which drives the fibre extraction units to go in for export of fibre to China. To avoid this trend, the proposed project envisages utilization of fibre within the cluster for the production of value added finished product. In addition, the proposed project tends to boost the present cluster turnover all along the value chain, thereby increase the income level of the cluster members. Equipping with the state of art facility for the manufacture of coir composites, the proposed CFC will not only cater the demand of the building materials but also serves for environment protection through the manufacture of timber-substitute product.

5.1.2 Rationale for Coir Garden Articles Manufacturing:

Coir Garden Articles product is included in view of utilization of wastage generated from the production of Needle felt. Considering the increasing demand for Coir Garden articles overseas, the project has been included in the proposed CFC.

5.1.3 Rationale for Coir Handicrafts Manufacturing:

Coir Handicrafts product is included in view of the location of the cluster (Madurai) being a centre for temple tourism. As handicrafts industry is highly labour intensive cottage based industry, the project has been included in the proposed CFC in view of promoting rural employment and bridging the market with rural artisans.

Pledged to harness the latest technology and thereby enhancing productivity, effective utilization of existing resources, improving the quality of the products and establishing global marketing linkages, the proposed CFC elevates the cluster to a higher level in terms of employment, value addition, turnover and foreign exchange earnings.

5.2 Project Objective

- Strengthening linkages among the Cluster members and actors and to have a Collaborative setup to undertake development initiatives at all levels of activities.
- Effective utilization of available raw material resource in the cluster by strengthening the backward linkages.
- To elevate the cluster status, by establishing state of the art infrastructure to manufacture value added high-end finished products such as Coir composite boards, Coir furniture, Coir bare mattresses, Finished mattress bedding and Garden articles.
- Exploit the benefits arising due to optimization of resources and economies of scale right from Farm level to Enterprise level

5.3 Focus Products

- Coir Composite Panels
- Coir Furniture / Home furnishings
- Coir Garden Articles(Garden pots, Vertical garden sticks, Tree guards etc.)
- Coir Handicrafts (Wall hangings, Kids craft, Coir jewellery etc.)

5.4 Conceptual Framework / Project Strategy

- Strengthen linkages within the cluster – with other SMEs, larger enterprises, support institutions, banks etc. At times such linkages are also created with important organizations (private/public) outside the cluster;
- Assist cluster stakeholders to develop a consensus-based vision for the cluster as a whole;
- Help stakeholders to coordinate their actions and pool their resources to move towards a shared vision for the cluster as a whole; and
- Create an autonomous governance framework, in a step-by-step process that will sustain dynamism and change in the cluster after the withdrawal of the implementing agency.

The progressiveness of cluster development initiatives could be assessed based on the following classified indicators:

- Process Indicators (I-1) are used to track the first stage of the initiative's development, including the identification of cluster leaders, and beginnings of building a community of stakeholders.

- Action Indicators (I-2) track cluster analyses and the development of strategies to help clusters improve competitiveness.
- Investment Indicators (I-3) track investments and co-investments made during the initiative's implementation. Co-investments begin modestly but advance with the project.
- Delivered Results Indicators (I-4) track measurable results of the cluster initiative. These can include increases in exports, revenues, employment, wages, industry profitability, and the establishment of new enterprises.

6 PROJECT INTERVENTIONS (CORE SFURTI)

6.1 SOFT INTERVENTIONS

Capacity Building:

- Trust Building: For strong association among cluster members to address common problems.
- Awareness Programme: To provide awareness about SFURTI scheme benefits, Cluster development initiatives and the prospects for value added products in Coir sector
- Entrepreneurship Development Programme: To foster entrepreneurship among cluster members.
- Skill Upgradation Programme: To increase the skilled labour force in the cluster to address the problem of limited skilled labour availability.
- Exposure Visit: Visit to other vibrant cluster, research institutions etc. to understand the synergic effect and dynamics of vibrant clusters and to demonstrate the technology and marketability for value added products.

Market Promotional Activities

- Market Study Tour: To enable the cluster members to gain a deeper understanding of the business environment and market dynamics in Coir sector.
- Participation in Trade Fairs: To conduct business, cultivate cluster's image and to examine the market. The main objectives of participation of trade fairs are:
 - Increased Sales
 - Product showcasing for enhanced product visibility
 - Establish qualified leads

In addition, trade fairs are the ideal place for surveying the market, comparing prices and sales terms etc.

- Buyer Seller Meet: To meet various players in the value chain for building business contacts and enhance marketability

The Hard interventions proposed for the development of the cluster is given below:

- Needled Felt based Coir Composite Panels manufacturing facility
- Coir Wood Furniture making facility
- Coir Garden Article making (Garden pots, Vertical garden sticks, Tree guards etc.)
- Coir Handicrafts making (Wall hangings, Kids craft, Coir jewellery etc.)

Thematic Interventions

Cluster's active involvement and participation in activities such as national and international level brand promotion campaigns, New Media marketing, Online Shopping Web Portal, E-commerce initiatives etc. as proposed under the SFURTI implementation guidelines is projected as part of thematic interventions.

7 SOFT INTERVENTIONS

CAPACITY BUILDING PROGRAMME

S. No	Particulars	
1	Proposed Programme / Intervention	Trust Building and Awareness programme
2	Target group	Cluster members
3	No. of Batches	2
4	Batch size	50 nos
5	Training content	Self & Group motivation
6	Trainer / Training Institution	ITCOT Consultancy and Services Limited
7	Cost of Training programme	Rs. 1,00,000/-
8	Implementation timeline	Year I - Quarter I

S. No	Particulars	
1	Proposed Programme / Intervention	Entrepreneurship Development Programme
2	Target group	Coir Entrepreneurs
3	No. of Batches	4
4	Batch size	25 nos
5	Training content	Motivation, Project Identification, Govt. Subsidy Schemes, Banker role in Industries, Government statutory approvals, Export Import procedures & Marketing.
6	Trainer / Training Institution	ITCOT Consultancy and Services Limited
7	Cost of Training programme	Rs. 2,00,000/-
8	Implementation timeline	Year I - Quarter III

S. No	Particulars	
1	Proposed Programme / Intervention	Technology based Entrepreneurship Development Programme
2	Target group	Coir Entrepreneurs
3	No. of Batches	2
4	Batch size	25 nos
5	Training content	Scope for Value added coir products, Technological inputs & feasibility inputs, Marketing strategies
6	Trainer / Training Institution	ITCOT Consultancy and Services Limited
7	Cost of Training programme	Rs. 2,00,000/-
8	Implementation timeline	Year I - Quarter IV

S. No	Particulars	
1	Proposed Programme / Intervention	Skill upgradation Programme
2	Target group	Coir artisans
3	No. of Batches	4
4	Batch size	20 nos
5	Training content	Training on Coir Furniture making
6	Programme duration	3 days
7	Trainer / Training Institution	Coir Board
8	Cost of Training programme	Rs. 3,00,000/-
9	Implementation timeline	Year I - Quarter III & Quarter IV

S. No	Particulars	
1	Proposed Programme / Intervention	Skill upgradation Programme
2	Target group	Coir artisans
3	No. of Batches	4
4	Batch size	20 nos
5	Programme content	Training on Garden articles & Handicrafts
6	Coordinating Institution	ITCOT Consultancy and Services Limited
7	Cost of programme	Rs. 2,00,000/-
8	Implementation timeline	Year II - Quarter I

MARKET PROMOTION PROGRAMME

S. No	Particulars	
1	Proposed Programme / Intervention	Market study tours
2	Target group	Coir Entrepreneurs/ SPV members
3	No. of Batches	As per requirement
4	Programme content	To understand product wise market dynamics & to interact with market
5	Coordinating Institution	IA & TA
6	Cost of Training programme	Rs. 3,00,000/-
7	Implementation timeline	Year II - Quarter I & Quarter II

S. No	Particulars	
1	Proposed Programme / Intervention	Participation in Trade fairs
2	Target group	SPV members
3	No. of Batches	As per requirement
5	Programme objective	Participation, Exhibit products to generate market linkages and enquiries
6	Coordinating Organisation	Coir Board
7	Cost of Training programme	Rs. 5,00,000/-

8	Implementation timeline	Year II - Quarter II & Quarter III
S. No	Particulars	
1	Proposed Programme / Intervention	Buyer Seller Meet
2	Target group	SPV members
3	No. of Batches	As per requirement
4	Training content	Direct Contact with Buyers
5	Coordinating Organisation	IA, TA & Coir Board
6	Cost of Training programme	Rs. 2,00,000/-
7	Implementation timeline	Year II - Quarter III & Quarter IV

S. No	Particulars	
1	Proposed Programme / Intervention	Tie up with Business Development service(BDS) providers
2	Target group	SPV members
3	No. of Batches	As per requirement
5	Training content	New Product development New design development
6	Coordinating Organisation	BDS providers
7	Cost of Training programme	Rs. 5,00,000/-
8	Implementation timeline	Year III - Quarter I & Quarter II

8 HARD INTERVENTIONS

The Hard interventions proposed for the cluster are listed below:

- Needled felt based Coir Composite Panels manufacturing facility
- Coir Wood Furniture making facility
- Coir Garden articles making facility
- Coir Handicrafts making facility

The proposed flow envisages production of Needled felt from Coir fibre and the Needle felt is the input for manufacturing of Coir panel boards, which is also utilized for Coir wood furniture making. The waste generated from Needle felt production is utilized for the production of Garden articles. Coir Handicrafts making utilizes Coir Fibre and yarn as inputs.

The objective of the project is to facilitate effective raw material (Coir Fibre) utilization for the manufacture of value added products namely and coir panels/ furnitures. In addition, the project pledges for zero wastage in the process, by the production of coir garden articles, which utilizes the waste generated during the coir needle felt production process.

8.1 Location

The location of the proposed CFC is at Kulasekaran Kottai village, Vadipatti Taluk, Madurai district. The location is 7 kms from Sholavandan Bus stand. It is situated between Sholavandan – Vadipatti Main Road. The labour force will be sourced from the nearby villages like Perumalpatti, Challapulam, Chadaiyampatti, Krishnapuram, Karatupatti etc. The location is considered suitable in view of approach, road, rail, labour sourcing, power sourcing and water.

8.2 Land

Land to an extent of 4.05 Acres has been on 15 years lease for establishing the Common Facility Centre (CFC) of the project. The land is located at 451/7-17, 449/1.2.3, Kulasekaran Kottai village, Vadipatty Taluk, Madurai district. The land is considered adequate for the proposed facilities under CFC in view of operations, stock and amenities required.

8.3 Building & Civil works

Description	Buid up Area (in Sq.ft)	Rate per Sq.ft.	Cost of Building (Rs.Lakhs)
Needle Felt based Coir Composite panels manufacturing section	8000	Rs. 800/-	64.00
Coir Furniture section	2000	Rs. 800/-	16.00
Garden articles & Handicrafts section	500	Rs. 800/-	4.00
Total			Rs. 84.00 lakhs

8.4 Plant & Machinery for CFC

The Plant and Machinery proposed for the entire CFC is categorized into three sections viz.

- Coir Panels & Furniture production
- Garden articles production and
- Coir Handicrafts/Jewellery production

The details of machinery section wise and the cost thereof is given below:

S.No.	Description	Quantity	Rate per Unit (Rs. lakhs)	Total Cost (Rs. lakhs)
Section: Needle Felt Production				
1	Non-Woven Coir Needle Felt	1	35,00,000	35,00,000
			Sub Total:	35,00,000
Section: Coir Composite Panel Production				
1	Online Resin Sprayer	1	15,00,000	15,00,000
2	Online Coir Felt Drier	1	18,50,000	18,50,000
3	Coir Sheet Fleece Cutter Machine	1	2,50,000	2,50,000
4	Laminating Drum Press	1	2,50,000	2,50,000
5	Hydraulic Hot Press	1	65,00,000	65,00,000
6	Resin Pressure Tank	1	2,50,000	2,50,000
7	Double Dimension Band Saw Cutter	1	4,00,000	4,00,000
8	UV Printer (Flat Bed)	1	30,00,000	30,00,000
9	Boiler	1	20,00,000	20,00,000
			Sub total	160,00,000
Coir Wood Furniture Making				
10	Edge Banding Machine	1	14,00,000	14,00,000
11	Wood Planing machine	1	3,00,000	3,00,000
12	CNC Router machine	1	3,00,000	3,00,000
			Sub total:	20,00,000
Section: Garden Articles Production				
1	Hydraulic Press	1	3,00,000	3,00,000
2	Die set	3	40,000	1,20,000
			Sub total:	4,20,000

Section: Coir Handicrafts Production				
1	Coir tools, accessories & kit	5 sets	16000	80,000
			Sub total:	80,000
Grand Total:			Rs. 2,20,00,000	

8.5 Installed Capacity

The critical capacity of the whole project is the production capacity of the Needle felt machine, the output of which is the input for Coir panel section. Also, production of Garden articles utilizes the waste generated from the Needle felt section.

Needle Felt Production Capacity:

The width of the proposed Needle felt machine is 8 ft. 3 inches and the installed capacity is 160 meters per hour. Assuming the density of the felt at 800 gsm, the installed production capacity of needle felt per shift is estimated at 2560 Kgs. (Length 160 mts. x Width 2.5 mts. x 8 hours x Density 0.8 Kgs.)

Coir Panels Production Capacity:

The panel size proposed is 8 ft. x 4 ft. panels with 1” cutting allowance on each side. For making coir faced particle board, the cycle time is 15 minutes. With 5 day light press, the production would be 20 panels per hour.

Weight of Coir sheets required /panel : 2.5 mtr. x 1.25 mtr. x 0.8 Kg. x 2 face = 5 Kgs.

Weight of Coir sheets required/hour (for 20 panels) = 5 Kgs. x 20 panels = 100 Kgs.

Weight of Coir sheets required per shift = 100 Kgs. x 8 hrs. = 800 Kgs.

Weight of Coir sheets required per day = 800 Kgs. x 2 shifts = 1600 Kgs.

As observed, the capacity of the Needle felt manufacturing setup is sufficient to feed in the Coir panel manufacturing setup on 2 shift operations. However, initially it is proposed to operate Composite panel manufacturing section on single shift basis and once the market reception is ensured, operation on double shift is proposed.

8.6 Manufacturing Process

COIR COMPOSITE PANELS

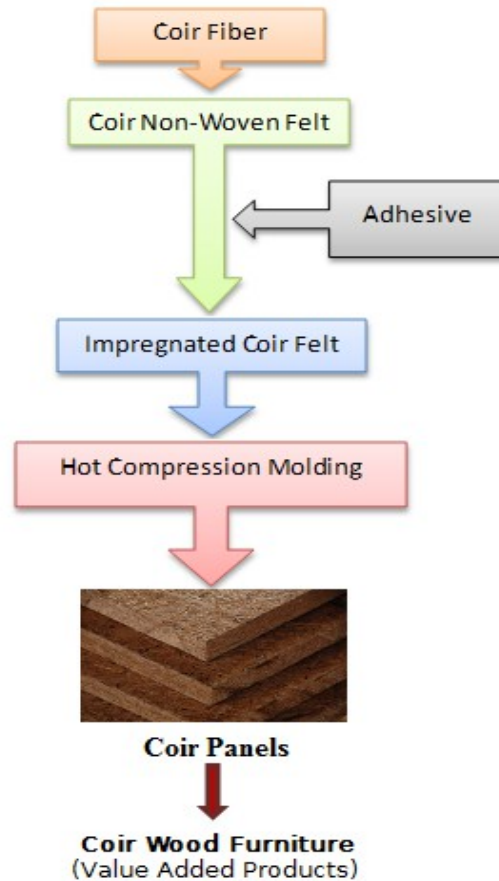
The coir fibres which are stored as bales are opened out and passed through the fibre cleaning machine. During this process the hard bits coir pith and other foreign particles are

removed. Cleaned and opened coir fibre is passed into a sheet forming machine by air laying process to form a uniform web. The density is adjusted to get continuous and even distribution for the uniform web formation.

The Web thus formed is passed through needling loom. During this process needles will interlock coir fibre mechanically. The needles pattern and the depth of penetration are positioned to suit the required interlocked coir needle felt. These interlocked needle felt are edge trimmed through the longitudinal cutter and made into required rolls. The edge trimmed rolls are taken into the impregnation section where thermosetting adhesive is impregnated on to the non-woven sheet.

These impregnated non-wovensheets are dried to remove the excess moisture to form prepregs. These prepregs are cut to required length and kept ready for assembling. The coir prepregs thus formed are laminated as per the required thickness and strength characteristics and then loaded on to the compression moulding machine. The assemblies thus placed between the moulds of the machine are cured with specific pressure, temperature and time. The cured panel is taken out and conditioned. Each panel is then inspected and checked for quality for maintaining standards.

From the supreme quality panels variety of furniture can be made on par with conventional plywood industry. The process flow chart for Coir Composite Panels and Coir Wood Furniture is given below:



In addition, molded designed furniture can be easily made without any labor intensive work from coir panels as compared to the conventional plywood.

Garden Articles Manufacturing

The garden articles are manufactured using the wastage from the Needle felt machine proposed as part of CFC. A light coating of compounded natural rubber latex is applied to the coir fiber sheet by hand or automatic spraying. It is then shaped to pot size of requirement manually with the help of mould and sprayed with latex compound and curved by hot pressing in a electrically or steam heated hydraulic press. It is estimated that about 250gm coir fibers are used for the manufacture of fiber liner of a pot. The liners are useful for climbers and hanging plants. The fiber liners can be used for cultivating bitter gourd/snake gourd. The shaped fiber pots are supported by welded iron wire mesh, which can be kept in air by hanging it from GI wires with the help of hooks for cultivation of seasonal vegetables.

Coir Handicrafts Production

Coir Handicrafts includes molded items and also other items including Coir jewellery, decors and items of classified designs made from coir. These coir handicrafts are available in different design, size and patterns. It gives an elegant look to the home decor and widely appreciated for their intricate designs and perfect finish. These coir handicrafts can be customized as per the requirement of the client. The coir handicrafts are being purchased as memorable gifts, irresistible souvenir or as artistic showcase items such as wall hangings, kids craft, coir jewellery (Bracelets, Quilled Earrings, Necklace, Thread bangles, Beaded anklets etc.). The coir handicrafts items are produced manually by skill based artisans. The major market for the coir handicraft items are gift showrooms and retail shops in tourist places.

8.7 MARKETING STRATEGY/ INITIATIVES PROPOSED

The marketing strategy for the CFC products includes the following initiatives:

- a. Promotion of the **brand “VAIGAI”** aggressively through multiple channels and media.
- b. Engaging Business Development Service providers to enhance the cluster market share in both domestic and export market for the products.
- c. Appointment of dealers in potential market centres in south india and establishment of effective dealer network
- d. Establishing linkages with retail showrooms (including Coir Board showrooms) in Chennai, Bangalore, Mumbai & Delhi
- e. SPV has already identified potential buyers for the products viz.

Products	Potential Buyers
Coir Panel boards & Coir Furniture	<ol style="list-style-type: none">1. Natura India, Hosur2. Mariapushpam Wood Works, Madurai3. Louis Wood Works, Madurai4. Solariyam Exporters, Dindigul5. ShotGlassProprietors, Madurai
Coir Garden Articles (Coco poles, Coir garden pots, Hanging baskets & liners)	Targeting big towns & cities targeting big towns and cities in the northern and western parts of India, where vertical residential units and offices have become a way of life, leaving little space for greenery.

	Garden Articles have export market potential in countries viz. U.S., Canada, Egypt & Nigeria.
Coir Handicrafts	All tourist centers and gift/momento retails shops.

Tieup with Builders:

The SPV has some of its **members already engaged in Wood Furniture & Saw mill business**, which is considered to be a strong point in view of marketing. The existing customer base of the Wooden furniture business are considered to be good market prospects for the Coir wood furniture proposed.

The Company also propose to establish tie-up with lead builders in Madurai district to promote Coir Composite panels/ Coir wood Furniture for varied utilities such as Modular Kitchen, other interior design applications etc., apart from common plyboard applications. Based on the informal study undertaken by the SPV lead members, it is ascertained that the consumer buying decision rests with the type of building as follows:

- While decorating a NEW residence:
-Buying Decision is left to a Builder/Architect/Interior Decorator or the owner.
- While RENOVATING a Residence:
-Buying Decision is made by an Interior Designer or by the owner.
- While furnishing a commercial complex:
-Buying Decision is made by the Builder/Architect/Interior Designer.

As the builders & interior decorators influence on consumers are decisive, the Company has obtained consent with the following lead builders/interior decorators in Madurai district for future collaboration/ tie-up:

1. Jaya Bharath Homes, Madurai
2. City Builders, Madurai
3. Kaviyan Construction, Madurai
4. Yasin Builders, Madurai
5. Annai Bharath Homes, Madurai
6. Agrini Homes, Madurai
7. Thai Homes, Madurai

The above said leads have expressed their interest to have marketing tie-up with the SPV, once the commercial production in CFC started.

VAIGAI Virtual Shop:

The Company has already hosted the website www.vaigaicoir.com and it intends to have a dedicated web-portal for online marketing of all the products manufactured in the cluster. Also a Mobile application is proposed to support the online shopping portal.

VAIGAI COIR SHOWROOM at Madurai:

The Company proposes to have an exclusive showroom in the heart of Madurai City to promote the Coir products produced in the Cluster. The showroom is proposed in the third year of implementation once the CFC becomes fully operational.

The SPV lead members have clear understanding in the significance of nurturing creativity and innovation in the proposed Cluster development programme. Overall, it is observed that the SPV have the ability to manage the proposed project successfully and achieve the projected turnover and profitability.

8.8 OPERATION AND MAINTENANCE

The IA is responsible for the operation and maintenance of the CFC assets until scheme period and the SPV has to manage the entire operation on its own after project implementation period is over. The operation and maintenance cost is proposed to be managed with the income from the operations of the Common facilities through sales realization.

8.9 BUSINESS PLAN:

Detailed business plan has been provided in Chapter No. 14.

8.10 IMPLEMENTATION SCHEDULE:

The implementation schedule and project timelines are provided in Chapter No.13

9 PROJECT COST AND MEANS OF FINANCE (SFURTI)

The estimated project cost and the means of finance based on the projected project interventions are given below:

S.No.	Proposed Interventions	Project Cost (Rs.Lakhs)	GoI Share (in lakhs)	SPV Share (in lakhs)
1	SOFT INTERVENTIONS			
1.1	Capacity Building			
1.1.1	Trust building and awareness programme	1.00	1.00	-
1.1.2	Entrepreneurship Development Programme	2.00	1.00	-
1.1.3	Technology based EDP	2.00	2.00	-
1.1.4	Skill Upgradation Programme (Coir Furniture)	3.00	3.00	
1.1.5	Skill Upgradation Programme (Coir Handicrafts & Garden articles)	2.00	2.00	
	Total Capacity Building cost	10.00	10.00	
1.2	Market Promotion			
1.2.1	Market Study Tour	3.00	3.00	
1.2.2	Participation in Trade fairs	5.00	5.00	
1.2.3	Buyer Seller Meet	2.00	2.00	
1.2.4	Tie up with Business Development Service (BDS) providers	5.00	5.00	-
	Total Market Promotion cost	15.00	15.00	-
				-
	TOTAL SOFT INTERVENTIONS COST	25.00	25.00	-
				Contd...
2	HARD INTERVENTIONS			
2.1	Building for CFC	84.00	63.00	21.00

2.2	Machinery & Other infra for Common Facility Proposed			
2.2.1	Needle felt Production setup	35.00	26.25	8.75
2.2.2	Coir Composite Panel Production setup	160.00	120.00	40.00
2.2.3	Coir Furniture Production setup	20.00	15.00	5.00
2.2.3	Garden Articles Production setup (with die sets)	4.20	3.15	1.05
2.2.4	Coir Handicrafts Production setup (with tool kits)	0.80	0.60	0.20
2.2.5	Electricals	8.00	6.00	2.00
	Total Machinery & Other Infra Cost	228.00	171.00	57.00
	TOTAL HARD INTERVENTIONS COST	312.00	234.00	78.00
	TOTAL INTERVENTIONS COST (SOFT & HARD)	337.00	259.00	78.00
3	Other Project Components			
3.1	Contingencies, Deposits, Prel. & Preop. expenses	10.00	-	10.00
3.2	Working Capital for one operating cycle	90.00	-	90.00
	Total Other Project Components	100.00	-	100.00
3	Cost of TA (8% of Total Interventions Grant component)	20.72	20.72	-
4	Cost of IA/SPV including CDE	20.00	20.00	-
	TOTAL PROJECT COST	477.72	299.72	178.00

10 PLAN FOR CONVERGENCE OF INITIATIVES

The initiatives for convergence of schemes and leveraging of resources from various sources are under exploration viz.

- Dovetailing the benefits of Development schemes of State & Central Governments
- Exploring the opportunities for private sector participation in the cluster development project
- Exploring Corporate Social Responsibility (CSR) foundations with proven track record for additional funding.
- Exploring the possibilities to dovetail funds from various state and central government schemes over and above the funds sanctioned for SFURTI scheme (without duplication of funding for a specific project component).

The above initiatives would be undertaken with the participation of stakeholders on approval of the project. Notwithstanding the above initiatives, it is expected that the benefits of various other schemes such as Coir Udyami Yojana, PMEGP etc. for individual cluster members are foreseen as below:

Scheme	No. of beneficiaries/ Activity	Cost of project	Scheme Funding	Bank Loan	Promoter Contribution
MahilaCoir Yojana	50 (Electronic rats)	100 members x Rs.4,000 = Rs.4.00 lakhs	Rs.3.00 Lakhs	--	Rs.1.00 Lakhs
NEEDS	5 (Coir Fibre Extraction units)	5 members x Rs.50.00 lakhs = Rs.250.00 lakhs	Rs.62.50 Lakhs	Rs.175.00 Lakhs	Rs.12.50 Lakhs
PMEGP	5 (Coir Fibre Extraction units)	5 members x Rs.25.00 lakhs = Rs.125.00 lakhs	Rs.43.75 Lakhs	Rs.75.00 Lakhs	Rs.6.25 Lakhs
	TOTAL	Rs.379.00 Lakhs	Rs.109.25 Lakhs	Rs.250.00 Lakhs	Rs.19.75 Lakhs

The additional investment estimated in the cluster is Rs.379.00 Lakhs with the scheme funding of Rs.109.25 lakhs, bank credit of Rs.250.00 lakhs and the promoter's contribution of Rs.19.75 lakhs.

11 ENHANCED PROJECT COST AND MEANS OF FINANCE

The Project cost and Means of Finance of CORE SFURTI project is illustrated in **Chapter 10**. Convergence of initiatives such as Dovetailing the benefits of other Coir Board schemes such as Coir Udyami Yojana, Export market promotion scheme etc. and also from other MSME schemes such as NEEDS, Capital subsidy scheme etc. to cluster members, would be undertaken to improve the viability of projects, strengthening the value chains and market linkages and to enable overall improvement of the level of human development in the area.

Considering the convergence of other scheme benefits for individual cluster members, as foreseen in Chapter 11, the enhanced project cost and means of finance is given below:

(Rs.Lakhs)

S.No.	Component	Total Cost	Grant Component	Promoter's Contribution & Bank Loan
01.	Core SFURTI	477.72	299.72	178.00
02.	Convergence initiatives (Establishment of individual units under various schemes)	379.00	109.25	269.75
TOTAL		856.72	408.97	447.75

The enhanced project cost including the Core SFURTI and other convergence initiatives works out to Rs.856.72 lakhs, whereas the corresponding Grant component is Rs.408.97 lakhs and that of Contribution and bank loan is Rs.447.75 lakhs.

12 PROJECT TIMELINE

The project implementation schedule with details of the activities to be undertaken and the expected time frame (quarter wise) for each activity is given below:

S.No.	Proposed Interventions	Period	
		Year	Quarter
1	SOFT INTERVENTIONS		
1.1	Capacity Building		
1.1.1	Trust building and motivational programme	I	Q1
1.1.2	Entrepreneurship Development Programme	I	Q2
1.1.3	Technology based EDP	I	Q3
1.1.4	Skill Upgradation Programme	I, II	I-Q4, II-Q1
	Total Capacity Building cost		
1.2	Market Promotion		
1.2.1	Market Study Tour	II	Q2/Q3
1.2.2	Participation in Trade fairs	II	Q2/Q3
1.2.3	Buyer Seller Meet	II	Q3/Q4
1.2.4	Tie up with Business Development Service (BDS) providers	III	Q1/Q2
2	HARD INTERVENTIONS		
2.1	Land Lease	I	Q1
2.2	Building for CFC	I	Q3,Q4
2.3	Machinery/Equipments for Common Facility Proposed		
2.3.1	Needled Felt Machinery	I	Q4
2.3.2	Coir Composite Panels Machinery	II	Q1
2.3.3	Coir Furniture Machinery	II	Q2
2.3.4	Garden Articles	II	Q3
2.3.5	Coir Handicrafts	II	Q3

Project activity	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SOFT INTERVENTIONS												
Capacity building												
Trust building and motivational programme	■											
Entrepreneurship Development Programme		■										
Technology based EDP			■									
Skill Development Program (Coir Furniture)				■	■							
Skill Development Program (Garden articles & Handicrafts)				■	■							
Market Promotion												
Market Study Tour						■	■					
Participation in Trade fairs						■	■					
Buyer Seller Meet							■	■				
Tie up with Business Development Service (BDS) providers									■	■		
HARD INTERVENTIONS												
Land lease registration	■											
Building for CFC			■	■								
Needle felt Production setup				■								
Coir composite panels production setup					■							
Coir Furniture production setup						■						
Garden Articles & Handicrafts Production setup					■							

13 DETAILED BUSINESS PLAN

The Cost of production and profitability projection are presented in Statement-3. The assumptions for working the cost of production & profitability are given below:

Needle Felt Section:		
Installed Capacity of Needled Felt	160.00	meters per hour
Maximum width	2.50	meters
Density	0.80	Kg.
No. of operational hours per shift	8	per shift
Installed Production Capacity per shift	2560.00	Kgs. per shift
Number of Shifts	1	Shifts per day
Capacity Utilisation		
- <i>First year</i>	60%	
- <i>Second year</i>	70%	
- <i>Third year onwards</i>	80%	
Raw material requirement (Coir Fibre)	120%	of Production Quantity (i.e. Yield wastage: 20%)
Cost of raw material (Coir Fibre)	Rs. 18,000.00	per ton
Coir Composite Panel Section:		
Installed production capacity per hour	20	sheets
Number of shifts	2	Shifts per day
Capacity Utilisation		
- <i>First year</i>	60%	
- <i>Second year</i>	70%	
- <i>Third year onwards</i>	80%	
Panel size	8 ft. x 4 ft.	
Panels for Direct Sales	80%	
Panels for Furniture making	20%	
Selling Price		
- Coir Particle Board	Rs.1,800.00	per board
- Finished furnitures	Rs.2,800.00	per board usage
Resin requirement		
Resin requirement	35%	of total output weight
Cost of Resin	Rs.85,000	per ton
BOPP Film requirement	2	sheets per board
Cost of BOPP Film	Rs.40	per sheet of board size

Particle board requirement	1	per panel
Cost of Particle board	Rs.800	per board of 8ft. X 4 ft. size.
Cost of consumables (Chemicals)	Rs.50	per board of 8ft. X 4 ft. size.
Cost of fuel (Panel section)	Rs.30	per board of 8ft. X 4 ft. size.
<u>Furniture Section:</u>		
No. of Panels utilized for Furniture making	20%	of total panel production
Cost of prime consumables (Foam, Tapestry cloth)	Rs.500	per board area
Cost of other consumables (Joineries, edging)	Rs.80	per board area
Garden Articles:		
Average Production Capacity per shift	100	no. of items
Number of shifts per day	1	
Number of working days per annum	300	
Average Selling Price	Rs.120	per item
Cost of raw materials other than needle felt wastage	Rs.50	per item
Coir Handicrafts:		
Average sales estimated per annum	Rs. 10.00	lakhs per annum in the I year and 10% increase every year
Cost of rawmaterials and consumables	30%	of Handicrafts Sales realisation
Power Cost	Rs.6.50	per KWH
Repairs & Maintenance	2.00%	of P&M cost in the I year and 10% every years
Administrative Expenses	1.00%	Of sales realisation
Selling Expenses	5.00%	Of sales realisation

The Annual Sales Realization, Profitability and Break-even point for five years of operation is estimated as below:

(Rs. Lakhs)

	Year 1	Year 2	Year 3	Year 4	Year 5
Annual Sales Realization	1183.60	1380.20	1576.90	1578.11	1579.44
Profit before Tax	105.09	135.49	165.70	161.39	156.87
Provision for Taxes	20.43	36.46	51.12	52.72	53.51
Profit after Tax	84.66	99.03	114.58	108.67	103.36
Break Even Point	50%	45%	41%	42%	44%

Working Capital:

Working capital gap for the first year of operation works out to Rs.90.00 lakhs (Statement 2). This is based on 15 days stock of raw materials, 5 days of work in process, 8 days of stock of finished goods, and receivables for 8 days, Rs.2.00 lakhs for expenses and Rs. 1.50 lakhs for other current assets. Sundry creditors are considered at 8 days and 0.74 lakhs considered for other current liabilities. The working capital requirement is proposed to be met from the SPV contribution

Break Even Point, Net Present Value (NPV) and Internal Rate of Return (IRR):

The Break Even point works out to 50% for the first year of operation(Statement 11). The NPV works out to Rs.144.60 lakhs at 8% discount rate and the IRR 19.71% (Statement 12).

The project financials comprises the following statements, which are enclosed in the Annexure separately:

- Statement 1: Cost of Project and Means of Finance
- Statement 1.1: Estimation of Deposits / Advances
- Statement 1.2: Preliminary and Preoperative Expenses
- Statement 2: Assessment of Working Capital
- Statement 3: Cost of Production & Profitability
- Statement 4: Assumptions for Cost of Production and Profitability
- Statement 5: Calculation of Income Tax
- Statement 6: Estimation of Power Cost
- Statement 7: Manpower Requirement and Estimation of Cost
- Statement 8: Estimation of Depreciation
- Statement 9: Projected Cash-Flow Statement
- Statement 10: Projected Balance Sheet
- Statement 11: Estimation of Break-Even Point
- Statement 12: Estimation of Net Present Value and Internal Rate of Return

14 PROPOSED IMPLEMENTATION FRAMEWORK

14.1 Role of Implementing Agency

The role and responsibility of the IA includes the following:

- i. Recruit a full time CDE preferably one amongst the stakeholders who has the desired knowledge and capability in order to ensure efficient implementation of the project
- ii. The IA would implement various interventions as outlined in the approved DPR
- iii. Undertake procurement and appointment of contractors, when required, in a fair and transparent manner
- iv. The IA will enter into an agreement with the Nodal Agency for timely completion on cluster intervention and proper utilization of Government Grants
- v. Operation & Maintenance (O&M) of assets created under the project by way of user-fee based model
- vi. Responsible for furnishing Utilization Certificates (UCs) and regular Progress reports to Nodal Agency in the prescribed formats.

14.2 Details of Strategic Partners

The cluster is proposed to be developed under SFURTI (Scheme of Fund for Regeneration of Traditional Industries). The Coir Board is the Nodal agency (NA) and ITCOT Consultancy and Services Limited is the Technical Agency (TA) appointed by Coir Board. The Implementing agency is Tamilnadu Council for Enterprise Development (TACED), Madurai. The above agencies work in tandem towards the successful implementation of the project in a sustainable manner.

14.3 Structure of the SPV

The SPV is formed and registered as Private Limited Company under subsection (2) of section 7 of the Companies Act 2013 and rule 8 of the Companies (Incorporation) Rules, 2014 in the name of '**VAIGAI COIR CLUSTER PRIVATE LIMITED**' as per the Certificate of Incorporation issued by Registrar of Companies, Chennai dated 26.08.2015. The CIN of the company is U36997TN2015PTC101977.

14.4 Composition of the SPV

An SPV comprises of 22 members, the list of members as given below:

S.No	Name	Father/Husband	Designation/ Position	Address
1	Mr. C. Saravanan	Mr. Chinniah	Chairman	No. 12A, Mudaliar Fort street, Sholavandan, Vadipatti Taluk, Madurai - 625214
2	Mr. D H Arthur	D. Henrylawrence	Managing Director	F.127, SanthiSadhan Apartment, Melakal Main Road, Kochadai, Madurai – 625 016.
3	Mr. Arul Anandh	Mr. Mariyalouis	Executive Director	No. 10/17, Sivan Kovil street, Sholavandan, Vadipatti Taluk, Madurai - 625214
4	Mr. S Tennison	Mr. Samymuthu	Shareholder	No. 2/13, KaliyammanKovil street, Silukkuvarpatti, Dindigul - 624215
5	Mr. Arul Raj	Mr. Mariyalouis	Shareholder	No. 10/36, Sivan Kovil street, Sholavandan, Vadipatti Taluk, Madurai - 625214
6	Mr. P Radha Krishnan	Mr. Pitchiah	Shareholder	No. 8-3-10/1, Darmathukkal street, L. Pudhur, Vadipatti Taluk, Madurai - 625218
7	Mr. K Sivaramkrishnan	Mr. Kannan	Shareholder	No. 3-1-61, Naidu street, Thathampatti, Vadipatti, Madurai - 625218
8	Mr. S Sridhar	Mr. Santhanam	Shareholder	No. 1-3-36, Naidu street, PettaiSholavandan, Vadipatti Taluk, Madurai - 625214
9	Mr. S Jayaraman	Mr. Selvam	Shareholder	No. 7-26A, Kallar street, Sholavandan, Vadipatti Taluk, Madurai – 625214
10	Mrs. Rejila Mary	Mr. Arul Anandh	Shareholder	No. 10/17, Sivan Kovil street, Sholavandan, Vadipatti Taluk, Madurai - 625214
11	Mr. V Sundaresh Kumar	Mr. Vairavan	Shareholder	No. 6-3-15B/A1, KamarajarAnaipati Road, Nilakkottai, Dindigul - 624208
12	Mr. A Krishna Moorthi	Mr. Arumugam	Shareholder	No. 12-4-2, MarkandayanKovil street, Vadipatti Taluk, Madurai - 625218

13	Mrs. S Rehana	Mr. Senthil Kumar	Shareholder	No. 4, PettaiAgraharam, Sholavandan, Vadipatti Taluk, Madurai - 625214
14	Mr. S.Ganeshan	Mr.Suburam	Shareholder	No.264/A, MuruganKovil St, Iumbadi, Madurai.
15	Mr. R Balamurugan	Mr. Rajagopal	Shareholder	No. 12, Singarathoppu, 1 st lane, Manjanakara street, Madurai - 625001
16	Mr. Hakkimsait	Mr. Sait Mohammed	Shareholder	No. 1/97, Pallivasal street, Karuppati, Vadipatti Taluk, Madurai - 625205
17	Mr. K Ramkumar	Mr. Kanthan	Shareholder	No. 5/119B, Naidu street, Balakrishnapuram, Iumbadi, Vadipatti Taluk, Madurai - 625205
18	Mr. G Rajangam	Mr. Gurunadhan	Shareholder	No. 6/166, School street, Melnachikulam, Vadipatti Taluk, Madurai - 625205
19	Mr. R Raja	Mr. Illamathan	Shareholder	No. 2-1-36/4, Vadakanmayikarai street, Pettai, Sholavandan, Vadipatti Taluk, Madurai - 625214
20	Mrs. Jasmine Prakash	Mrs. Jose Balan	Shareholder	No. 3-7-1, Neer Road, MudhaliyarKottai, West street, Sholavandan, Vadipatti Taluk, Madurai - 625214
21	Mr. P Guru	Mr. Pandi	Shareholder	No. 5/143, Mullipallam, Sholavandan, Vadipatti Taluk, Madurai - 625207
22	Mr. M Thangam	Mr. Muniyandi	Shareholder	No. 220/7B, Karattupatti, Vadipatti Taluk, Madurai - 625214

The SPV members include Coir entrepreneurs, artisans (yarn spinners), and wood furniture mart/ saw mill owners (to strengthen Coir-ply CFC), ensuring the participation from all levels of activities, which implies that the SPV is strong enough to undertake the proposed cluster development initiatives and have the capacity to manage the facilities proposed

15 EXPECTED IMPACT

The expected impact on critical parameters of the proposed cluster development initiatives and resultant convergence of other scheme benefits is given below:

S.No.	Parameter	Pre-intervention	Post-intervention
1	Cluster Turnover (Rs. Lakhs)	4121	5575
2	Investment (Rs. Lakhs)	1195	1970
3	Employment (Nos.)	2450	2800
4	Wages per day (Rs.)	300	380 - 400
5	Profitability (%)	8% to 10%	14% to 16%

- Well established management team in place under the strengthened SPV to excel in all the functional operations of the CFC established.
- Equipped with the state of art facility for the manufacture of coir composites, the proposed CFC would not only cater the demand of the alternative building materials but also serves for environment protection through the manufacture of timber-substitute product.
- Cluster's online market sale is expected to occupy at least 30% of the total production of CFC products, within 3 years of implementation, owing to the market promotion initiatives proposed.
- Cluster to have exclusive showroom in Madurai city with increased footfall of local tourists (as Madurai is the place for temple tourism).
- Emergence of specialized support service/ BDS providers and their active involvement in the development process
- Establishment of new units by converging various schemes of State and Central Governments (such as Coir Udyami Yojana, NEEDS, PMEGP, UYEGP, etc.) resulting in additional investments in Coir sector by the cluster members
- Improved access to financial capital for cluster members
- 100% Coverage of cluster members under social security schemes