

DETAILED PROJECT REPORT

Cluster Location: MANNARGUDI (THIRUVARUR)



Submitted to
Coir Board, Kochi

PREPARED BY

ITCOT CONSULTANCY AND SERVICES LIMITED

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Executive Summary

Name of the cluster	Mannargudi Coir Cluster, Tiruvarur																								
Type of cluster	Major cluster																								
Location & Spread of the cluster	The cluster area is located in Thiruvarur district extends over 3 Blocks in Thiruvarur District viz. Mannargudi, Thiruthuraipoondi & Needamangalam in Thiruvarur District and Pattukkottai Block in Thanjavur District. The Geographical spread of the cluster measures about 20-25 Km radius.																								
Product range	The following products are produced in the cluster presently. <ul style="list-style-type: none"> • Coir Fibre • Coir Yarn • Curled Coir • Coir Pith Block 																								
Size of cluster & Type of units	The total number of coir units available in the cluster area is 72 units of which 35 Nos. are engaged in Fibre Extraction, 20 Nos. engaged in Yarn Spinning 5 No. engaged in Curled coir manufacturing and 12 Nos. engaged in Coir Pith block manufacturing. The total number of beneficiaries estimated to be around 810 members which include the labor force in the cluster.																								
Production & Turnover of Coir products in the cluster	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #d9d9d9;"> <th>Product</th> <th>No. of units</th> <th>Production (MT)</th> <th>Turnover (Rs. In Crores)</th> </tr> </thead> <tbody> <tr> <td>Coir Fibre</td> <td>35</td> <td>17500</td> <td>14.00</td> </tr> <tr> <td>Coir Yarn</td> <td>20</td> <td>1000</td> <td>3.50</td> </tr> <tr> <td>Curled Coir</td> <td>5</td> <td>93.75</td> <td>0.211</td> </tr> <tr> <td>Coir Pith Block</td> <td>12</td> <td>12000</td> <td>15.60</td> </tr> <tr> <td>Total</td> <td>72</td> <td>-</td> <td>33.311</td> </tr> </tbody> </table>	Product	No. of units	Production (MT)	Turnover (Rs. In Crores)	Coir Fibre	35	17500	14.00	Coir Yarn	20	1000	3.50	Curled Coir	5	93.75	0.211	Coir Pith Block	12	12000	15.60	Total	72	-	33.311
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Employment & Income level	<table border="1" data-bbox="710 235 1364 548"> <thead> <tr> <th>Activity</th> <th>Male</th> <th>Female</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Fibre Extraction</td> <td>105</td> <td>420</td> <td>525</td> </tr> <tr> <td>Yarn Spinning</td> <td>100</td> <td>20</td> <td>120</td> </tr> <tr> <td>Curled Coir</td> <td>15</td> <td>5</td> <td>20</td> </tr> <tr> <td>Coir Pith Block</td> <td>44</td> <td>100</td> <td>144</td> </tr> <tr> <td>Total</td> <td>264</td> <td>545</td> <td>809</td> </tr> </tbody> </table> <p data-bbox="646 582 1396 716">The income level for the labours in the cluster is Rs.300/- for male workers and Rs.200/- for female workers</p>	Activity	Male	Female	Total	Fibre Extraction	105	420	525	Yarn Spinning	100	20	120	Curled Coir	15	5	20	Coir Pith Block	44	100	144	Total	264	545	809
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Key concern areas	<ul style="list-style-type: none"> ✓ Tiruvarur district along with nearby Thanjavur district characterizes with the high production of Coconuts and thereby features abundant availability of Coconut husks. The advantage of local availability of basic raw material (husks) has not been exploited properly. ✓ Cluster's present production is limited to regular products such as Coir fibre, Coir yarn, and 5 Kg. pith block. Lack of any initiatives in the cluster so far, to endeavor into the production of value added finished products. ✓ Purely depends on the local trader / marketer to sell their products even through there is huge scope for direct marketing with enhanced margins. <p data-bbox="646 1467 1428 1646">Procurement of upgraded technology, training facilities and exposure to current market trends are considered to be the genuine concerns that the proposed project is intended to address directly.</p> <p data-bbox="646 1691 1428 1926">Collaborative efforts towards effective utilization of locally available raw material, strengthening the value chain and venturing into premium market platform would augment the cluster turnover and profitability.</p>																								

Proposed Strategic Interventions	<p>Soft Interventions:</p> <ul style="list-style-type: none"> • Capacity Building initiatives • Market Promotion initiatives <p>Hard Interventions (Common facility creation):</p> <ul style="list-style-type: none"> • Building for Common facility • Common facilities proposed: <ul style="list-style-type: none"> - Coir Needled Felt based Coir Ply Board Manufacturing <p>Thematic Interventions: Participation in activities such as national and international level brand promotion campaigns, New Media marketing, E-commerce initiatives etc., as detailed in the SFURTI implementation guidelines</p>																																							
Budget for Soft interventions	Rs. 20.00 lakhs																																							
Budget for Hard interventions	Rs. 357.50 lakhs																																							
Total Project Cost including Agencies cost	Rs. 540.00 lakhs																																							
Means of Finance	Grant under SFURTI scheme : Rs. 493.00 lakhs IA/SPV share : Rs. 47.00 lakhs																																							
Post Intervention Scenario (Expected Impact)	<table border="1" data-bbox="654 1355 1420 1848"> <thead> <tr> <th rowspan="2">S. No.</th> <th rowspan="2">Parameter</th> <th rowspan="2">Pre-Intervention</th> <th colspan="3">Post-intervention</th> </tr> <tr> <th>Y 1</th> <th>Y 5</th> <th>Y 10</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Cluster Turnover (Rs. Lakhs)</td> <td>3331.00</td> <td>5970</td> <td>7460</td> <td>9325</td> </tr> <tr> <td>2</td> <td>Investment (Rs. Lakhs)</td> <td>970.00</td> <td>1497</td> <td>1870</td> <td>2338</td> </tr> <tr> <td>3</td> <td>Employment(Nos)</td> <td>809</td> <td>1030</td> <td>1288</td> <td>1610</td> </tr> <tr> <td>4</td> <td>Wages / day (Rs.)</td> <td>300</td> <td>420</td> <td>525</td> <td>650</td> </tr> <tr> <td>5</td> <td>Profitability (%)</td> <td>8-10%</td> <td>20%</td> <td>25%</td> <td>25%</td> </tr> </tbody> </table> <p>➤ Strong linkages among the Cluster members and actors in all levels of the value chain and an established Collaborative setup in place to</p>	S. No.	Parameter	Pre-Intervention	Post-intervention			Y 1	Y 5	Y 10	1	Cluster Turnover (Rs. Lakhs)	3331.00	5970	7460	9325	2	Investment (Rs. Lakhs)	970.00	1497	1870	2338	3	Employment(Nos)	809	1030	1288	1610	4	Wages / day (Rs.)	300	420	525	650	5	Profitability (%)	8-10%	20%	25%	25%
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	<p>undertake development initiatives & address common issues.</p> <ul style="list-style-type: none"> ➤ Emergence of specialized support service providers and their active involvement in the development process. ➤ Establishment of new units by converging various schemes of State and Central Governments (such as NEEDS, PMEGP etc.) resulting in additional investments and employment in Coir sector by the cluster members ➤ Improved access to financial capital for cluster members ➤ 100% Coverage of cluster artisans under social security schemes
<p>Cluster Management - Post interventions</p>	<p>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.</p> <p>SHIYAMALA EDUCATIONAL RURAL YOUTH WELFARE TRUST, having its registered office at 147, Palaniappan Street, VNS Campus, Pattukkottai, Thanjavur District is proposed as the Implementing Agency.</p> <p>A Special Purpose Vehicle (SPV) is formed and registered as Private Limited Company under sub-section (2) of section 7 of the Companies Act 2013 and rule 18 of the Companies (Incorporation) Rules, 2014 in the name of "CHOLANADU COIR PLY BOARDS PRIVATE LIMITED" as per the Certificate of Incorporation issued by Registrar of Companies, Coimbatore dated 27.08.18. The CIN of the company is U74999TN2018PTC124208. The registration has been carried out with 6 members as Directors and 9 additional members, who have evinced interest, are proposed to be included as shareholders. The SPV</p>

	will be strengthened to manage the Cluster activities in sustainable nature after the project implementation is over.
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1 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. 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.

Coir Board has entrusted the task of preparation of Detailed Project Report for the Coir cluster at Mannargudi, Tiruvarur District. Accordingly, ITCOT has undertaken the Cluster diagnostic study and subsequently prepared the Detailed Project Report (DPR) for submitting the same for seeking final 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 2. Cluster Value Chain mapping is given in Chapter 3. Market assessment and Demand Analysis is given in Chapter 4. SWOT and Need Gap Analysis is given in Chapter 5. Profile of the Implementing Agency in Chapter 6. Project Concept and Strategy Framework are detailed in Chapter 7. Core SFURTI Project Interventions are given in Chapter 8. Detailed analysis of Soft Interventions is given in Chapter 9 and analysis of Hard Interventions is given in Chapter 10. Project Cost and Means of Finance is given in Chapter 11. Plan for Convergence Initiatives are given in Chapter 12. Enhanced Project Cost and Means of Finance are given in Chapter 13. Project Timeline is illustrated in Chapter 14. Detailed Business Plan is given in Chapter 15. Proposed Implementation Framework is given in Chapter 16. Expected Impact is detailed in Chapter 17.

2 Cluster Profile

2.1 Background

Tiruvarur district was carved out as a separate district by detaching Valangaiman Taluk from Thanjavur District and Thiruvarur, Nannilam, Kudavasal, Needamangalam, Mannargudi, Thiruthuraipoondi Taluks from Nagappatinam District on 01.01.1997. The city of Thiruvarur is the administrative headquarters for the district. There are 2 Revenue Divisions, 8 Taluks, 573 Villages, 10 Blocks, 4 Municipalities and 7 Town Panchayats in Thiruvarur District. Being an agrarian economy, industrial growth in the district is mainly confined to agro-based industries. A large number of Rice mills, Oil mills are spread over the district. However, consequent to the extraction of natural gas two power generation plants have been setup in the recent past. In the nearest town Pattukkottai of Thanjavur district, a Coir cluster has already been developed under SFURTI scheme - Phase I and a Common Facility Centre has been established for the production of 5 Kg. coir pith block.

2.2 Regional setting of the Cluster

The regional setting of the cluster extends over 3 Blocks viz. Mannargudi, Thiruthuraipoondi & Needamangalam in Thiruvarur district and Pattukkottai block in Thanjavur district. The block map of Thiruvarur district is given below:



2.3 Location

The cluster location spreads to 3 blocks in Thiruvarur District, coir units existing in 8 villages in Tiruvarur district and 1 block in Pattukkottai Block in Thanjavur District, coir units existing in 9 villages in Thanjavur district. The Geographical spread of the cluster measures about 20-25 Km radius.

2.4 Evolution of the Cluster

The Cluster is naturally evolved one. The total coconut cultivation area of Thiruvarur district is 4718 hectares (11700 Acres) mainly in Mannargudi, Needamangalam, Kottur, Thiruthuraipoondi and Muthupettai blocks in Thiruvarur district. The total production of nuts in Thiruvarur district is 870 lakh nuts and the productivity is 18440 nuts/Ha.

The total coconut cultivation area of Thanjavur district is 36136 hectares (89600 Acres). The total production of nuts in Thanjavur district is 6639 lakh nuts and the productivity is 18372 nuts/Ha.

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.

2.5 Demography and Growth trends

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

Description	2011	2001
Actual Population	1,264,277	1,169,474
Male	626,693	580,784
Female	637,584	588,690
Population Growth	8.11%	6.31%
Area Sq. Km	2,274	2,274
Density/km ²	556	492
Proportion to Tamil Nadu Population	1.75%	1.87%

2.6 Socio-economic aspects

Agriculture is the principal occupation in Thiruvarur district. More than 70% of the total work force is dependent upon agriculture. Paddy is the principal crop of the district. This district forms part of the rice bowl of Tamil Nadu. The district has occupied a predominant place in agricultural sector due to its alluvial soil blessed by “Mother Cauvery” and her numerous branches, which serve as main source of irrigation. The mangrove forests in Muthuppettai, occupies an important place among the nature’s beauty of this district. The government declared the Muthuppettai mangrove forest as revenue forest in February 1937 and, accordingly, the mangrove forest was handed over to the forest department of the Madras presidency. The forest is maintained by the Tamil Nadu Forest Department.

2.7 Human Development Aspects

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

Activity	Male	Female	Total
Fibre Extraction	105	420	525
Yarn Spinning	100	20	120
Curled Coir	15	5	20
Coir Pith Block	44	100	144
Total	264	545	809

The existing income level of the labour force in the Coir sector of the district is given below:

Activity	Wages per day	
	Male	Female
Fibre Extraction	300	200
Yarn Spinning	300	200
Curled Coir	300	200
Pith Block Making	300	200

It is observed that the income level for all activities is same for male as well as for female workers. Among these workers, 80% belongs to OBC category, 10% SC category and remaining 10% belongs to other categories.

2.8 Key Economic Activities in the region

Tiruvarur District is an industrially backward district. Being an agricultural district, rice mills are predominant. There are 50 modern rice mills and more than 250 conventional rice mills. Based on the availability on natural gas, gas based industries have come up. There are 6 industries functioning in the district, as given below.

- | | |
|------------------------------|-----|
| a. Chemical based industries | - 4 |
| b. Ceramic industries | - 1 |
| c. Power generation | -1 |

Regarding large scale sector, there are only three units. Due to lack of large-scale units or public sector undertaking, there are no ancillary industries. Next to paddy, coconut yield is predominant. So, there are 7 coir based industries in private sector and 2 in cooperative sector.

There are 4 indl. Cooperative societies functioning in this district.

- Kunniyur Adi Dravidar Coir and Coir Products Industrial Cooperative Society.
- Kottur Adi Dravidar Coir Workers Industrial Cooperative Society.
- Mannargudi Polythene Workers Industrial Cooperative Society.
- Tiruvarur District Backward Class Autorickshaw Drivers Indl.Coop. Society.

As per live stock census 2004, the live stock population is 3,32,134 white cattle & 18,286 black cattle. The estimated Milk Production in the district is 90.70 Lakh Litres per annum. For the whole district there is only one bulk chilling unit at Poonthotam, Nannilam Taluk. In poultry sector there is only one hatchery put-up by M/s. Aladian Hatcheries at Thiruneiper, Tiruvarur Taluk that produces 30000 chicks per month.

In power sector, there are two large scale units generating 146 M.W by using natural gas. One unit is put up by M/s. southern energy development Corporation at Nallur, Mannargudi Taluk and the other by TNEB at Koilkalpal, Kottur Block. There are 8 States Seed Farms functioning under the control of Agricultural Department in the District with annual seed production of 1350 M.T.

2.9 Existing Coir activities:

The total number of coir units available in the cluster area is 49 units of which 20 Nos. are engaged in Fibre Extraction, 15 Nos. engaged in Yarn Spinning 5 Nos. engaged in Curled coir manufacturing and 9 Nos. engaged in Coir Pith block

manufacturing. The current output of coir fibre is estimated at 11076 MT per annum. The Annual turnover out of coir fibre production in the cluster is estimated at Rs.22.15 Crores. There are about 15 units engaged in coir yarn spinning in the cluster. The current output of coir yarn is estimated at 5625 MT per annum. The Annual turnover out of coir yarn spinning in the cluster is estimated at Rs.21.37 Crores. There are about 5 units engaged in curled coir in the cluster. The current output of curled coir is estimated at 1875 MT per annum. The Annual turnover out of Curled coir production in the cluster is estimated at Rs.5.00 Crores. There are about 9 units engaged in 5 Kg. coir pith block in the cluster. The current output of pith block is estimated at 13500 MT per annum. The Annual turnover out of coir yarn spinning in the cluster is estimated at Rs.17.55 Crores.

Product	No. of units	Production (MT)	Turnover (Rs. In Crores)
Coir Fibre	35	17500	14.00
Coir Yarn	20	1000	3.50
Curled Coir	5	93.75	0.211
Coir Pith Block	12	12000	15.60
Total	72	-	33.311

The existing investment in Coir units in the cluster area is given below:

Activity	No. of units	Per unit (Rs.Lakhs)	Total (Rs.Lakhs)
Coir Fibre Extraction	35	10	350.00
Coir Yarn (Two Ply)	20	6	120.00
Curled Coir	5	5	25.00
Coir Pith Block	12	25	300.00
Total	72		795.00

The village wise distribution of units is given below:

THIRUVARUR DISTRICT					
S.No	Village	Coir Fibre units	Coir Yarn units	Coir Pith Block units	Others (Curled Coir units)
1.	Madukkur	-	5	-	-
2.	Keelanagai	2	1	1	1
3.	Vallur	1	2	2	-
4.	Thirumakottai	2	1	-	-

5.	Vadaseri	1	2	-	-
6.	Kottur	-	1	-	-
7.	Adichapuram	2	1	-	-
8.	Keelakurichi	2	-	1	-
THANJAUR DISTRICT					
9.	Anaikkadu	4	-	1	1
10.	Aladikkumulai	4	1	2	-
11.	Enathi	1	-	-	-
12.	Karambayam	4	2	1	1
13.	Nambivayal	2	2	-	-
14.	Nattuchalai	1	-	-	-
15.	Pannavayal	4	-	3	1
16.	Soorapallam	1	1	1	-
17.	Veerakkurichi	4	1	-	1
	TOTAL	35	20	12	5

The present status of employment level involved in the coir activities are given as below:

Activity	Male	Female	Total
Fibre Extraction	105	420	525
Yarn Spinning	100	20	120
Curled Coir	15	5	20
Coir Pith Block	44	100	144
Total	264	545	809

2.10 Infrastructure - Social, Physical, Financial and Production

The infrastructure details of Thiruvarur district is tabulated as below:

Geographical Area	: 2,09,709 Ha
a. No. of Blocks	: 10
b. No. of Taluks	: 7
c. No. of Municipalities	: 4
d. No. of Town Panchayats	: 7
e. No. of Revenue Villages	: 573

- Rainfall (mm) : 1166.40
- Population (in Lakh as per 2001 census)
 - Male : 5.80
 - Female : 5.88
 - Total : 11.68
 - Population BPL : 77,543 families

Classification of Workers

- Main Cultivators : 68374
- Marginal Cultivators : 7639
- Agricultural Labourers : 286033
- Household cottage industries : 9533
- Other workers : 128108

Predominant Economic Activities: Besides paddy cultivation which is the most important economic activity prevalent in the district, paddy processing, goat rearing, dairy, coir making and handicrafts are the other important activities in the district.

Major Food / Commercial and Plantation / Horticultural Crops. Paddy, accounting for about 64 per cent of the gross cultivated area, is the most predominant crop grown in the district. Pulses, mainly black gram and green gram, are grown extensively in 65536 ha (70000 ha normal area) mostly in rice fallows. Oil seed crops, such as gingelly and groundnut, are cultivated in about 2385 ha (6921 ha normal area). Sugarcane with 1555 ha (2921 ha normal area) and cotton with 3749 ha (1221 ha normal area) are the major cash crops grown in the district. Among the Horticulture and Plantation crops, coconut and banana are the major crops cultivated. Cultivation of bamboo along the bunds of the vast stretch of canal system has potential in the district.

3 Cluster Value Chain Mapping

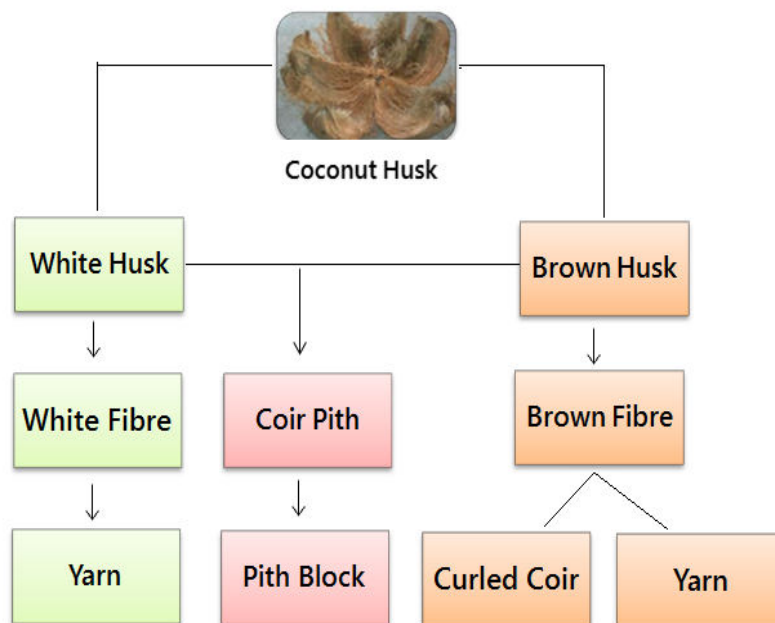
3.1 Product Profile

The following products are produced in the cluster presently.

- Coir Fibre
- Coir Yarn
- Curled Coir
- Coir Pith Block

3.2 Production Process

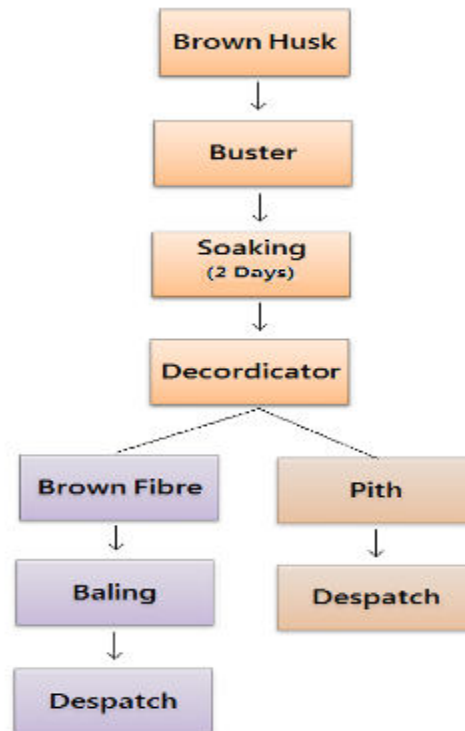
The Product flow from the raw material is depicted in the chart below:



a) 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 balling press and dispatched for sales.

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



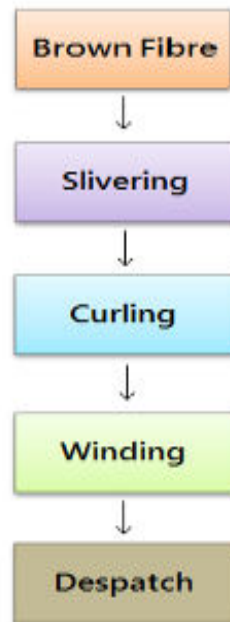
b) Coir Yarn:

Coir yarn spinning is similar to cotton yarn spinning. Coir fibre obtained from fibre extraction units and is wetted by spraying water. After 2-3 hours, the wetted fibre is passé 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. The process flow chart for Coir yarn spinning is given below:



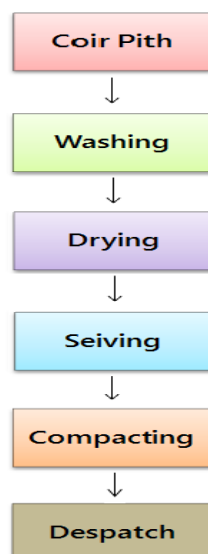
c) Curled coir:

The manufacturing of Curled coir involves slivering and curling processes, the stage wise flow chart is given below:



d) Coir Pith Block:

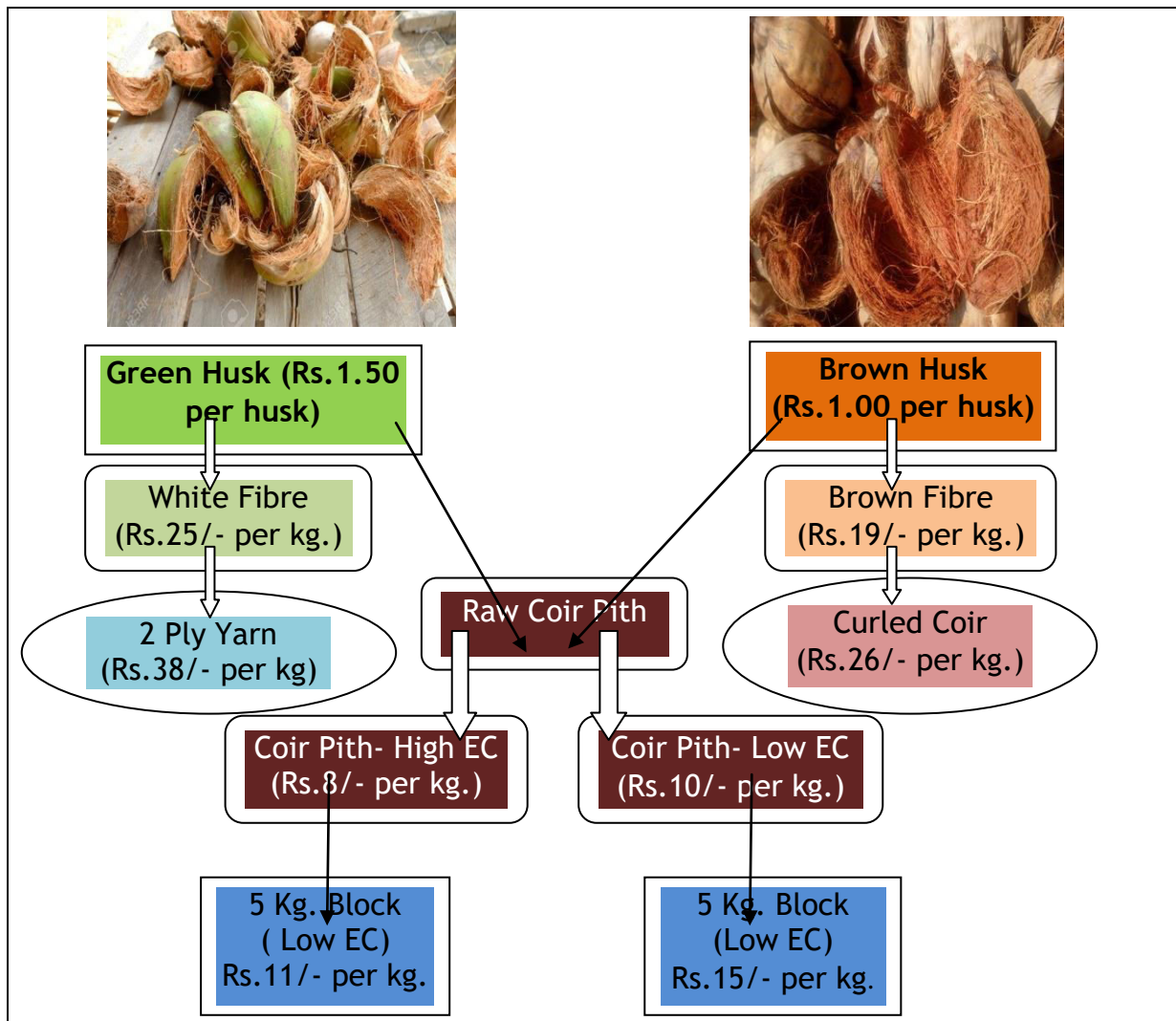
The by-product obtained during the process of Coir Fibre Extraction is Coir Pith. The raw coir pith (high EC) is received and washed in the soft water to reduce the EC. The low EC pith is dried in the yard and the dried pith is subjected to sieving / mixing process. The resultant pith is fed into the 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 rectified by washing it with good quality fresh water. Hence washing is the significant stage in the process.

3.3 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:

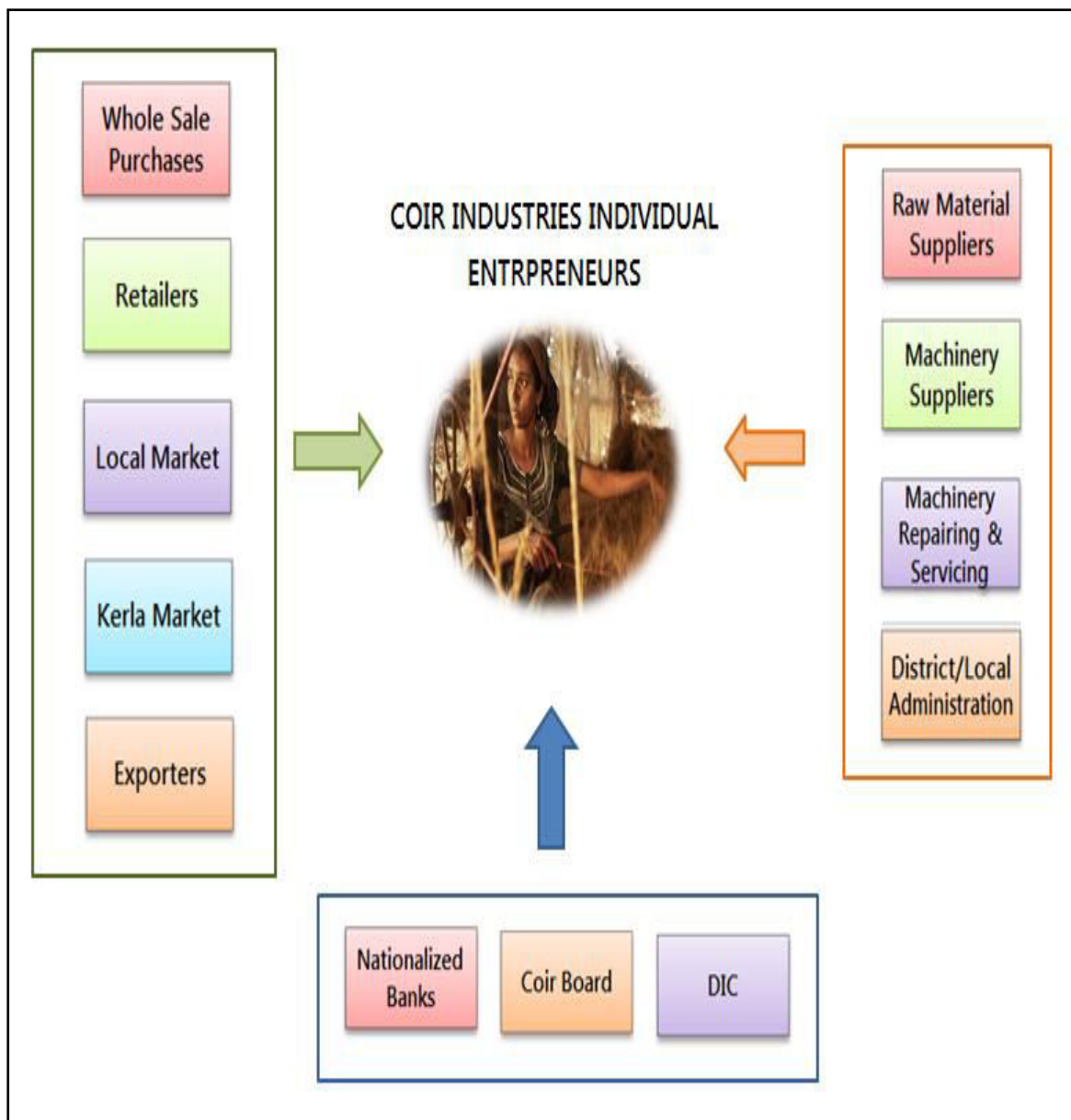


It is observed that the value addition in the cluster is limited to intermediate product level and the need and scope for value addition for coir sector in the cluster is considered significant. The cost of Green husk including loading and unloading is valued at Rs.1.50 per kg. & Brown husk including loading and unloading is valued at Rs.1.00 per kg. Then the husk is value added and incremented to Rs.25.00 per kg. of white fibre & Rs.19.00 per kg. of brown fibre, which is further incremented to Rs.38.00 per kg. of 2 ply yarn & .Rs.26.00 per kg.

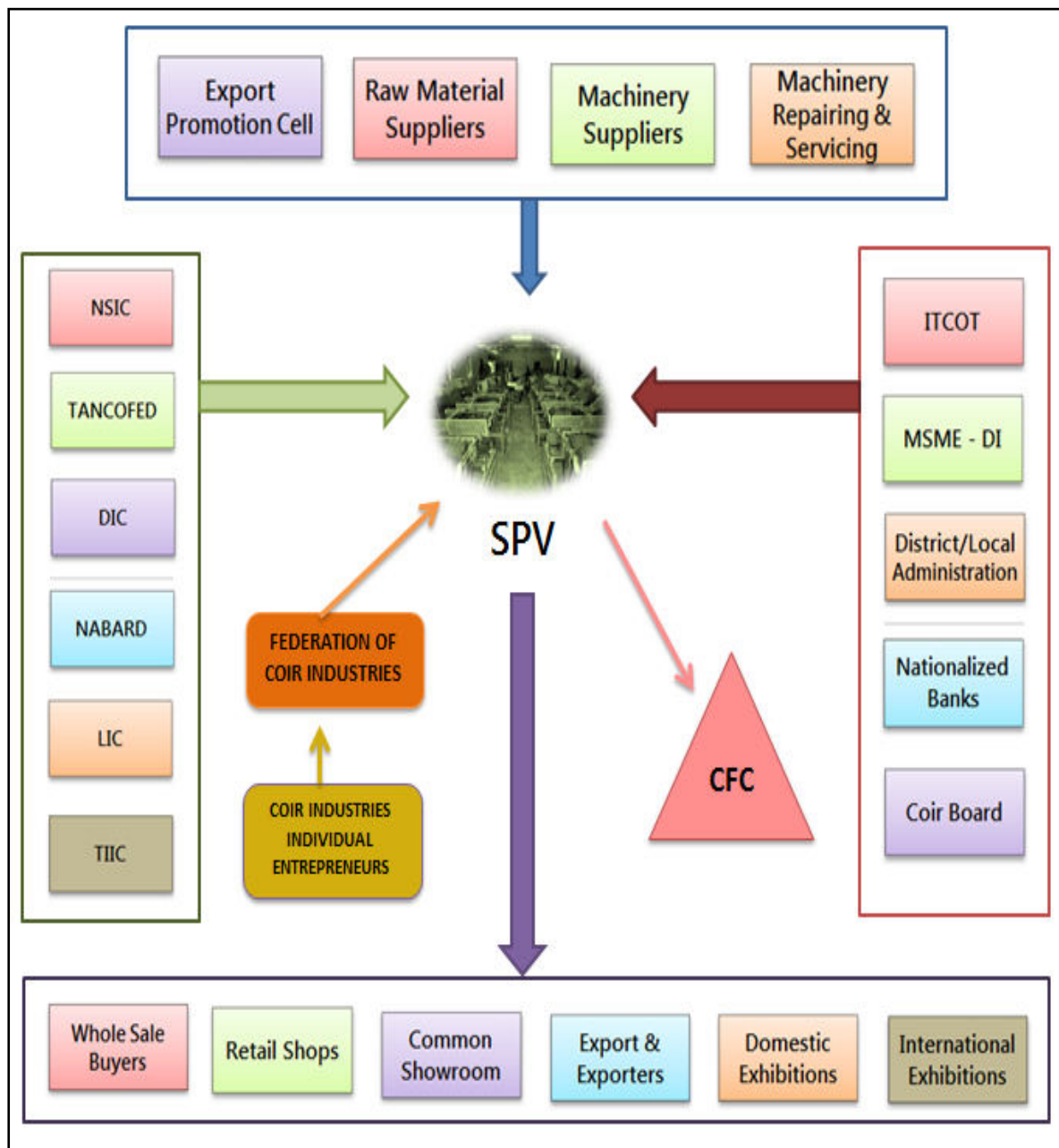
of Curled coir. Raw coir pith, the by-product of fibre extraction is valued as Rs.10.00 per kg. for Low EC pith & Rs.8.00 per kg. for High EC pith. Further the pith is incremented as 5 kg. Pith block and valued as Rs.15.00 per kg. for low EC block & Rs.11.00 per kg. for high EC block.

3.4 Cluster Map

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



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



3.5 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. The Regional Office of Coir Board is located at Pollachi which is near about 45 kms from the cluster area.

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

Indian Overseas Bank is the lead bank in Thiruvarur district. Lead bank will do the role of that for financial assistance to be availed in the cluster.

RURAL EXTENSION CENTRE, COIR BOARD

The Rural Extension Centre for the Regional Office, Coir Board, Pollachi is located in Pillaiyarpatti, Vallam, Thanjavur, which is the adjacent district of Tiruvarur, to provide the valuable services regarding coir activities.

COCONUT RESEARCH STATION

Coconut Research Station is located in Veppankulam, which is about 15 kms from the cluster. It is one of the active Agro technology providers in the cluster region.

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 empanelled as Technical Agency under SFURTI scheme by KVIC and Coir Board.

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.

4 Market Assessment and Demand Analysis

The Indian coir industry is an important cottage industry contributing significantly to the economy of the major coconut-growing States and Union Territories such as Kerala, Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Goa, Orissa, Assam, Andaman & Nicobar, Lakshadweep and Puducherry.

About 5.5 lakh get employment, mostly part time, from this industry. Coconut husk is the basic raw material for coir products. At least 50 per cent of the available coir husk is used to produce coir products. The rest is used as fuel in rural areas. Hence, there is scope for growth of coir industry.

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 35% 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 area and production of coconut is given below:

S.No.	State	Area ('000 Ha)	Production (in million nuts)	Productivity (Nuts/ha)
1.	Kerala	770.62	7429.39	9641
2.	Tamil Nadu	459.74	6171.06	13423
3.	Karnataka	526.38	5128.84	9744
4.	Andhra Pradesh	103.95	1427.46	13732
5.	West Bengal	29.51	373.58	12658
6.	Odisha	50.91	328.38	6451
7.	Gujarat	22.81	312.68	13706
8.	Maharashtra	22.75	271.24	9775
9.	Bihar	14.9	141.38	9489
10.	Assam	19.73	132.59	6720
11.	Chhattisgarh	1.85	30.54	16508
12.	Tripura	7.2	29.51	4097
13.	Nagaland	0.33	2.67	8091
14.	Others	52.8	388.13	7351
	All India	2088.47	22167.45	10614

Coir Board has targeted to double the export of coir and coir products from India within the next three years. During 2015-16, the growth of exports, compared to the previous year, was 20% in terms of quantity and 16.6% in terms of value. During 2016-17 the growth was increased to 27.3% in terms of quantity and 20% in terms of value. There has been an increasing trend in the exports of coir and coir products year to year, it is expected that the trend will continue during the coming years also. The total export of coir and coir products during the last three years are as under:

Years	2014-15	2015-16	2016-17
Quantity (In Metric Tonnes)	626666	752020	957045
Value (Rs. in lakhs)	163033.77	190142.52	228164.82

The major products that are exported are Coir pith, Coir fibre and Tufted Mats. It has been observed that the percentage growth in value of export of Coir pith has been 31.60% in 2016-17 compared to the previous year. Also the percentage growth in value of export of Coir fibre has been 29.10% in 2016-17 compared to the previous year. The data on export of Coir products from India in FY 2015-16 & 2016-17, as per Coir Board, are given below:

Item	April 2016- March2017		April 2015- March2016		% Growth	
	Q	V	Q	V	Q	V
Coir Pith	490552	90539.11	408897	68808.56	20.0	31.6
Coir Fibre	370357	53913.63	255293	41767.11	45.1	29.1
Tufted Mat	51718	48442.83	45770	44316.03	13.0	9.3
Handloom Mat	20143	21316.31	20386	22279.96	-1.2	-4.3
Geo textiles	6219	4481.04	4520	3531.72	37.6	26.9
Coir Yarn	4426	2948.32	4134	2820.82	7.1	4.5
Curled Coir	10356	2419.30	9470	2510.07	9.4	-3.6
Handloom Mattings	1272	1535.25	1706	1968.78	-25.4	-22.0
Rubberized Coir	888	1295.64	678	971.74	30.9	33.3
Coir Other Sorts	256	416.59	46	94.79	451.9	339.5
Coir Rope	484	388.50	517	396.61	-6.3	-2.0
Coir Rugs & Carpet	205	271.92	307	282.5	-33.1	-3.7
Powerloom Mat	166	196.38	280	367.35	-40.5	-46.5
Powerloom Matting	0	0.00	16	26.48	-	-
Total	957045	228164.82	752020	190142.52	27.3	20.0

* Q=Quantity in MT, V=Value in Rs.Lakhs

The percentage of share of each product with respect to total exports, both in Quantity and Value for the year 2016-17 is given below:

Item	2016-17		Export Composition %	
	Q	V	Q	V
Coir Pith	490552	90539.11	51.26	39.68
Coir Fibre	370357	53913.63	38.70	23.63
Tufted Mat	51718	48442.83	5.40	21.23
Handloom Mat	20143	21316.31	2.10	9.34
Geo textiles	6219	4481.04	0.65	1.96
Coir Yarn	4426	2948.32	0.46	1.29
Curled Coir	10356	2419.30	1.08	1.06
Handloom Mattings	1272	1535.25	0.13	0.67
Rubberized Coir	888	1295.64	0.09	0.57
Coir Other Sorts	256	416.59	0.03	0.18
Coir Rope	484	388.50	0.05	0.17
Coir Rugs & Carpet	205	271.92	0.02	0.12
Powerloom Mat	166	196.38	0.02	0.09
Total	957045	228164.82	100.00	100.00

* Q=Quantity in MT, V=Value in Rs.Lakhs

The Top five County wise Exports of Coir and Coir products in the year 2016-17:

S.No.	Country	Quantity (in MTs)	Value (Rs.Lakhs)	Quantity (%)	Value (%)
1.	China	439884.57	66655.52	45.96	29.21
2.	USA	133536.72	53286.56	13.95	23.35
3.	Netherlands	82487.53	18148.78	8.62	7.95
4.	UK	17668.15	11076.22	1.85	4.85
5.	South Korea	57545.12	9486.28	6.01	4.16

As far as the cluster is concerned, Coir fibre produced in the cluster is being marketed to other districts in the stage viz. Salem, Erode, Coimbatore etc., apart from the fibre utilization by coir yarn units in the cluster. The Coir yarn produced in the cluster is marketed to northern states of the country.

Considering the fibre availability and the scope for value addition of fibre, Coir composite panel manufacturing has been proposed as the Common facility center, as an upgraded production infrastructure, which would directly benefit the Coir fibre manufacturers in the cluster region.

5 SWOT and Need Gap Analysis

5.1. SWOT Analysis

STRENGTHS:

- Sufficient Availability of coconut husk (basic raw material) and Coir fibre provides scope for development of value added coir products in the district.
- Availability of relatively cheap manpower.
- Well established physical infrastructure such as road, rail, power (Uninterrupted Supply) 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, ITCOT etc.

WEAKNESSES:

- Absence of collective/collaborative efforts to take common initiative.
- Abundant availability of coconut husk not turned as raw material for coir units
- Available labour force not effectively utilised.
- Lack of awareness on the incremental benefits of manufacturing of value added finished coir products.
- Unproductive utilization of Coir husks viz. as fuel in brick chamber units & road side hotels.
- Lack of formal networks for marketing and input procurement.
- Limited contact with BDS providers and Technical Institutions.

OPPORTUNITIES:

- Increased potential for product diversification and value addition
- Growing demand for Coir products both in domestic and international markets.
- Emerging focus on cluster based approach for industrial development and implementation of various cluster development schemes by the State and Central Governments.

THREATS:

- Competition from products such as Nylon, Jute Sisal fibre etc.
- Competition from coconut growing country viz.: Sri Lanka, Indonesia & Philippines etc.

5.2. Need Gap Analysis

- ✓ Tiruvarur district along with nearby Thanjavur district characterizes with the high production of Coconuts and thereby features abundant availability of Coconut husks. The advantage of local availability of basic raw material (husks) has not been exploited properly.
- ✓ Cluster's present production is limited to regular products such as Coir fibre, Coir yarn, and 5 Kg. pith block. Lack of any initiatives in the cluster so far, to endeavor into the production of value added finished products.
- ✓ Purely depends on the local trader / marketer to sell their products even through there is huge scope for direct marketing with enhanced margins.

Procurement of upgraded technology, training facilities and exposure to current market trends are considered to be the genuine concerns that the proposed project is intended to address directly.

Collaborative efforts towards effective utilization of locally available raw material, strengthening the value chain and venturing into premium market platform would augment the cluster turnover and profitability.

6 Profile of the Implementing Agency

SHIYAMALA EDUCATIONAL RURAL YOUTH WELFARE TRUST an NGO registered as Trust, having its registered office at 147, Palaniappan Street, VNS Campus, Pattukkottai, Thanjavur District about 20 Kms. from the Cluster is proposed as the Implementing Agency of this cluster. The details of the agency are given below:

Institutional Structure / Registration Details	SHIYAMALA EDUCATIONAL RURAL YOUTH WELFARE TRUST
Legal Status	Registered as Trust
Date of Incorporation / Registration	01.04.2002
Registered Address	147, Palaniappan Street, VNS Campus, Pattukkottai, Thanjavur District-614 601
Office Address / Location	147, Palaniappan Street, VNS Campus, Pattukkottai, Thanjavur District-614 601
Affiliated to KVIC	No

Governance structure	#	Name of the Member	Designation	Back Ground / Profile	Contact Number	Email id
Composition of the executive Board / Trustees /Governing Body /Managing Committee and Back ground of the Members	1	Mr R.A. Nadimuthu	Managing Trustee	Correspondent Shiyamala Industrial School, (SCVT) affiliated to Govt. of Tamil Nadu, NSIC Ministry of MSME, Govt. of India. Incubation centre.	+91 93627 10338	sheywet@yahoo.com

	2	Smt.S.Shanthi W/o.R.Srinivasan	Trustee	Area Co-coordinator VLV Social Worker.		
	3	Mr.R. Christoper Arokiyaraj, S/o. P. Richard Rajarethinam	Trustee	Social Worker		
	4	Mr. Sivanesan S/o. Ramalingam	Trustee	Social Worker		
	5	Mr. S Marimuthu S/o. Sambasivam	Trustee	Social Worker		

Operational Profile	
Major Objectives - Vision, Mission, Goal of the Organisation	<p>By Developing Employment oriented activities such as cottage and small scale industries, appropriate agriculture protection and auxiliary units.</p> <p>By Organising seminar, conference work shop and training programmes in association with Government and non-governmental organizations.</p> <p>By organising special training programmes for skill development for women and youth.</p> <p>By Acting as a liaison organisation between the voluntary organisation and the similar interest organisations at national and international level.</p>

<p>What are the focus areas of Operations</p>	<ul style="list-style-type: none"> • SHG Members Training • General EDP • Coir EDP • Women Empowerment program • Herbal garden awareness program • Environment awareness program • Bio diversity awareness program • Rain water harvesting
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Management Profile

Background of Key Personal (Professionals and others) with brief profile of the Senior Management Personnel

No	Name	Designation	Responsibilities
1	Mr. R A Nadimuthu	Managing Trustee	Correspondent - Shiyamala Industrial School, (SCVT Govt. of Tamil Nadu Department of Employment and Training, NSIC Govt. of India Ministry of MSME)
2	Smt. S. Shanthi	Trustee	Co-ordinator SHG Co-ordinator VLV
3	Mr. R. Christoper Arokiyaraj,	Trustee	Social Worker
4	Mr. Sivanesan S/o. Ramalingam	Trustee	Social Worker
5	Mr. S Marimuthu	Trustee	Social Worker

Bank Account Details	
Name of the Bank	Corporation Bank
Branch Name	Pattukkottai
Account Number	176400101000712

Contact Details	
Name of the Contact Person	RA Nadimuthu
Designation of Contact Person	Managing Trustee
Correspondence Address	147, Palaniappan Street, V.N.S.Campus, Pattukkottai, Thanjavur District-614 601
CONTACT NUMBER	+91 93627 10338
E-MAIL ADDRESS	sheywet@yahoo.com

7 Project Concept & Strategy Framework

7.1 Project Rationale

The existing product range in the cluster is limited to intermediate products such as Coir Fibre, yarn and curled coir. The value addition undertaken in the cluster is very limited. Hence production of Value added competitive product is perceived to be a requirement of the cluster to boost up the cluster turnover, which would result in enhanced value chain on the whole.

An upgraded full-fledged infrastructure for the manufacture of Coir Composite panels, also termed as Coir wood, being the environment friendly value added product of fibre, is proposed as the Common facility center.

Project justification:

The Coir wood, the new entrant to the end uses of coir is a prospective wood substitute. The combination of coir with resin and subsequent processing shall definitely preserve the natural forests and saves the trees from cutting for wood.

One unit of coir ply with a production capacity of 40 cubic metres a day would be able to save about 22 trees per day which means 6,600 trees per year. Assuming that one such tree requires 40 sq.metre, then it would be 25 trees in one acre so that a coir ply unit could save about 264 acres of tropical forest in every year. If 10 % of coir fibre produced is utilized in the manufacture of coir ply, it would save about 8, 80,000 tropical trees per year which corresponds to 8,800 acres of tropical forests per year.

A tropical tree, which is 90 years old, would achieve a height of 15 metres with 0.5 meters width and 0.5 meters depth gives about 3.75 cubic meters of lumber. Timber recovery at 60% would yield about 2.25 meters of planks and sheets. When converted in to a finished product there is a further wastage of 20%. Hence the total recovery would only be about 1.80 cubic metres.

Coir wood made from coir fibre and phenol formaldehyde resin is an innovative wood substitute. It is a composite board and other hard fibres such as sisal and jute etc. and pre-treated plantation rubber wood veneers could be incorporated

The diversified new uses of coir composite will save the tropical forests, increase rural employment opportunities and also promote agriculture leading to sustainable development.

7.2 Project Objective

- Effective utilization of available raw material resource (Coconut husk) in the cluster by strengthening the linkages with raw material suppliers/farmers
- To engage in production of value added competitive products to increase the cluster turnover substantially and to enhance the value chain of the cluster
- Production of Environment friendly value added products and to attain an equilibrium with environment and sustainable development
- Eco production of products that augment the income level of huge number of employees/ artisans engaged coir yarn spinning

7.3 Focus Products/Services

- Coir Needled Felt - Standalone product, also raw material for Coir Plyboard
- Coir Ply Board - Environment friendly value added product which alternates conventional Ply board, resulting in curtailing

7.4 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

8 Project Interventions (Core SFURTI)

8.1 SOFT INTERVENTIONS

a) CAPACITY BUILDING:

- ✚ Trust Building: For strong association among cluster members to address common problems.
- ✚ 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.

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

8.2 HARD INTERVENTIONS:

CREATION OF COMMON FACILITY CENTRE:

The following common facilities are proposed for the Thiruvarur (Mannargudi) Coir Cluster to enhance raw material utility, marketability and profitability.

- I) Coir Needled Felt Manufacturing based Coir Ply Board Manufacturing

8.3 THEMATIC INTERVENTIONS

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

9 Soft Interventions

9.1 Capacity Building

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	1
4	Batch size	25 nos
5	Training content	Motivation, Govt Subsidy Schemes, Banker role in Industries, Government statutory approvals, Marketing
6	Trainer / Training Institution	ITCOT Consultancy and Services Limited
7	Cost of Training programme	Rs. 1,00,000/-
8	Implementation timeline	Year I Quarter II

S. No	Particulars	
1	Proposed Programme / Intervention	Skill upgradation Programme
2	Target group	Coir workers
3	No. of Batches	2

4	Batch size	25 nos
5	Training content	Skill Training for Needle felt and Composite ply board manufacturing
6	Trainer / Training Institution	Coir Board (at CICT, Bangalore)
7	Cost of Training programme	Rs. 2,00,000/-
8	Implementation timeline	Year I Quarter III & Quarter IV

S. No	Particulars	
1	Proposed Programme / Intervention	Exposure tours
2	Target group	Coir Entrepreneurs
3	No. of batches	As per requirement
4	Programme content	Visiting research institutions, other Coir clusters to understand cluster dynamics and technology update
5	Coordinating Institution	ITCOT Consultancy and Services Limited
6	Cost of programme	Rs. 3,00,000/-
7	Implementation timeline	Year I Quarter III

9.2 Market Promotion

S. No	Particulars	
1	Proposed Programme / Intervention	Market study tours
2	Target group	Coir Entrepreneurs
3	No. of Batches	As per requirement
4	Programme content	To understand market dynamics, To interact with market intermediaries to understand the product wise market potential in potential market centers
5	Coordinating Institution	IA & TA
6	Cost of programme	Rs. 4,00,000/-
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
4	Training content	Participation & Exhibit cluster products
5	Trainer / Training Institution	Coir Board
6	Cost of Training programme	Rs. 5,00,000/-
7	Implementation timeline	Year II - Quarter III / Quarter IV

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	Trainer / Training Institution	IA, TA & Coir Board
6	Cost of Training programme	Rs. 2,00,000/-
7	Implementation timeline	Year II - 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
4	Training content	New Product development New design development
5	Trainer / Training Institution	BDS Providers
6	Cost of Training programme	Rs. 2,00,000/-
7	Implementation timeline	Year II - Quarter I / Quarter II

10 Hard Interventions

CREATION OF COMMON FACILITY CENTRE:

The details of Common Facility Center proposed are given below:

a) Land & Building

The land to an extent of 2 acres 60.5 cents (113578 Sq.Ft.) is proposed to be taken for lease by the SPV for a period of 15 years. The land identified is located at 34 Ullikottai village, vide SF Nos. 379-1B, 117-3, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20 in Mannargudi Taluk, Thiruvarur District. The location has other infrastructural facilities such as road, power etc. and is suitable for the proposed CFC. The substation having 110 KVA capacity is located adjacent to the proposed CFC land.

Cost & Area of Building works

CFC activities	Built up Area (in Sq.ft)	Rate/Sq.ft. (in Rs.)	Cost of Building (Rs. in Lakhs)
Composite Panel with Needled Felt production	15000	Rs.750/-	Rs. 112.50 lakhs
Total			Rs.112.50 lakhs

The following common facilities are proposed for the Coir Ply board Cluster at Salem to enhance value addition of coir fibre & coir yarn in the cluster.

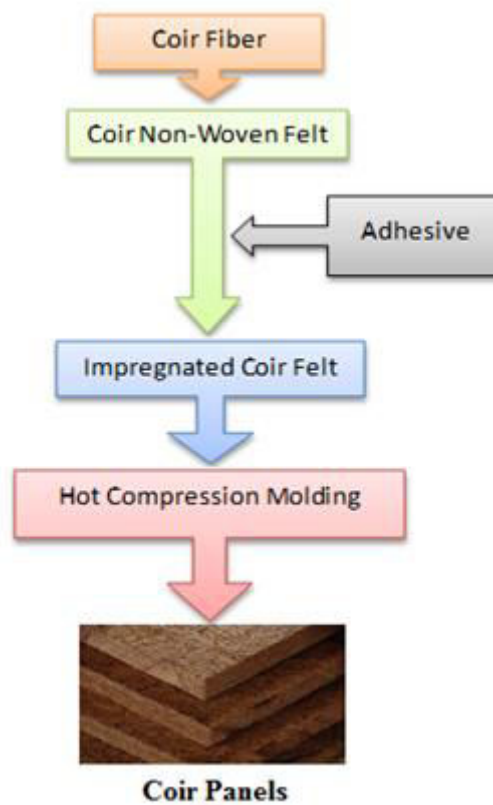
b) Manufacturing Process

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-woven sheets are dried to remove the excess moisture to form prepress. These prepress are cut to required length and kept ready for assembling. The coir prepress 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 is given below:



c) Plant and Machinery

The technical specification of the proposed machinery is given below:

1	Hammer Mill	1 no	<ul style="list-style-type: none"> • The machine is intended to make small wood branches or wood veneers or tuft wastes or coconut leaf stem in to particles of size 3 to 10 mm • Capacity of 350 kgs per hour • Run by three phase electric motor of 15 hp. • Main shaft speed - 1800 to 2000 rpm • Feeding material - branches of wood and coconut leaf stem • Desired output (particle) size - 3 to 20 mm, with bottom perforation of 20mm
2	Mixing machine	1 no	<ul style="list-style-type: none"> • The machine is intended to mix the coir pith, wood waste/coconut leaf stem/tuft waste particles along with the adhesive of required quantity. The ingredients are put in the top opening of a mixer and the blade mixes the materials homogeneously. • Capacity of 350 kgs per hour of four batches • Run by three phase electric motor of 10 hp • Provision for the removal of the mixed material at the bottom of the machine.
3	Hot Compression Moulding Machine (Hydraulic Hot Press)	1 no.	<ul style="list-style-type: none"> • 1500 tonne capacity • 6 day light • Day light gap of 200 mm • Finished size of the material is 8 ft x 4 ft • Platen size 8 ft 4 in x 4 ft 4in • Provision for keeping spacer bars of different thickness • Complete with power pack and fittings. • Provision in platens for thermic fluid heating oil flow
4	Wood fired thermic fluid boiler	1 no	<ul style="list-style-type: none"> • 10 lakh kilo cals • To be coupled with the online drier and hot press with piping system • Complete with all safety accessories • The hot press temperature is about 140 degree centigrade and of the drier is about 100 degree centigrade

5	<p>Coir Sheet Making Plant comprising of following Machine</p> <ol style="list-style-type: none"> 1. Coir Bale Opener 2. Non woven coir needle felt machine 3. ON line Resin Spraying both top and bottom side(In 2 stages) 4. 3 Pass Online Drier 5. Online Cutting System (both cross & side cutting) 6. Drum press 7. Pressure tank for resin spray (1000 Ltrs capacity) 	1 no	<ul style="list-style-type: none"> • Width 2.6 meters • Output 2.5 to 3.0 meters per minute • Density of the material should be varied from 300 gsm to 700 gsm • Punching with single or double punching system • Online spray arrangement for the felt on both sides with drier of 5 meters and three pass with rod conveyors. • Adjustment of drier temperature from 70 to 120 degree centigrade. • Variable speed arrangements for the drier conveyors • Cutting of fleece to make the fleece of 8 ft x 4 ft with cutting allowances. • Drum press for laminating 2 or more pieces
6	Edge trimming machine	1 no.	<ul style="list-style-type: none"> • Double cutter • Cutting size of the board is 8 ft x 4 ft • One fixed cutter and one movable cutter wherein the cutter adjustment should be from 2 ft to 8 ft. • Machine should be complete in all respects with motor and cutter and ready for operation.
7	RESIN REACTOR TANK WITH	1 no	<ul style="list-style-type: none"> • 500 Kgs capacity • Suitable to manufacture PF & UF Resin • S.S. Body • With Pump, Cooling Tower, Piping • Ready for running

8	Other accessories	<ul style="list-style-type: none"> • Scissor lift • Aluminum caul plates 3 mm thickness, 8ft 4 in x 4 ft 4 in - 50 nos • Double dimension saw :1 no • Cooling rack - 1 set • Weighing machine • Assembly tables - 2sets
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The estimated cost of the proposed machineries for the Needle felt based Composite panel manufacturing is given below:

Coir Needle felt based Coir Composite Panel manufacturing plant with supporting machineries	1 set	Rs.288.00 lakhs
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d) Production Capacity

The installed production capacity of Needle felt plant and the Composite board plant of the proposed CFC are given below:

Needle felt production:

Installed Capacity of Needled Felt	160.00	meters per hour
Maximum width	2.50	meters
No. of operational hours per shift	8	per shift
Installed Production Capacity per shift	3200.00	Sq.M. per shift
Density	0.80	Kg.
Installed Production Capacity per shift	2560.00	Kgs. per shift
Number of Shifts	1	Shifts per day

Composite board production:

Installed production capacity per hour	20	sheets
No. of hours per shift	8	hours
Number of shifts	2	Shifts per day
Installed production capacity per day	320	boards per day

e) Raw material

Coir Fibre is the raw material utilized for the production of Needle felt and Needle felt is the raw material for the Composite panels manufacturing. Coir Fibre

requirement for the proposed project is estimated at about 920 MTs per annum for the installed capacity of Needle felt production.

The Felt requirement per board is estimated as below:

Felt requirement per board	6.25	Sq.m. per board (2.5m x 1.25m)
Felt requirement for 2 shifts (in Sq.m.)	2,000.00	Sq.m. per day
Felt requirement for 2 shifts (in Kgs.)	1,600.00	Kgs. per day

There are about 35 Coir fibre extraction units with the production capacity of about 17,500 MTs per annum within the cluster area. Coir Fibre, the raw material is proposed to be sourced from within the cluster.

f) Marketing Strategy

M/s. CHOLANADU Coir Ply boards Private Limited intends to adopt an insightful, intensive and innovative marketing approach. Apart from conventional marketing strategies, the proposed marketing programme includes the following initiatives:

- **Partner with allies** - Marketing partnerships have a number of benefits to push a marketing campaign. For starters, when you collaborate with someone else, you tend to deliver better content. On top of that, marketing partnerships are cheaper to create, see success more quickly, and expose your brand to a new audience.
- **Collaborate with influencers** - Another way to gain new audience and extend brand awareness is by collaborating with the top influencers in the industry.
- **Experiment with new channels and platforms** - Building a brand needs new ways of looking at how to communicate with the customer across multiple digital and traditional channels. Eco friendly products & Handicraft products offers immense scope to experiment with new channels and platforms
- **Use big data to target customers** - big data can be used to predict purchasing trends get in touch with consumers before they search for our products or services.

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

- a. Promotion of the brand **“CHOLANADU”** 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. Natura India, Hosur.
- f. The SPV lead members have already established linkages with lead wood furniture manufacturers to include Coir Composite panels in their product mix and enhance the market prospects of the proposed eco friendly product.
- g. The Company also propose to establish tie-up with lead builders in Salem district to promote Coir Composite panels for varied utilities such as Modular Kitchen, other interior design applications etc., apart from common ply board 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 rests with Builder/Architect 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.

The SPV has proposed to establish linkages with lead builders / Architects & Interior designers to promote Coir Composite panels for home furnishing applications.

g) Implementation timeline:

Project phasing complete is given in Chapter 14.

11 Project Cost & Means of Finance

The estimated project cost based on the computations of the project interventions and the means of finance for the project is given below:

S.No.	Proposed Interventions	Project Cost (Rs.Lakhs)	GOI Share (Rs.Lakhs)	SPV Share (Rs.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	1.00	1.00	--
1.1.3	Skill Upgradation Programme	2.00	2.00	--
1.1.4	Exposure Tour	3.00	3.00	--
	Total Capacity Building cost	7.00	7.00	--
1.2	Market Promotion			
1.2.1	Market Study Tour	4.00	4.00	--
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	2.00	2.00	--
	Total Market Promotion cost	13.00	13.00	--
	Total Soft Interventions Cost	20.00	20.00	--

Contd...

S.No.	Proposed Interventions	Project Cost (Rs.Lakhs)	GOI Share (Rs.Lakhs)	SPV Share (Rs.Lakhs)
2	HARD INTERVENTIONS			
2.1	Building for CFC (15,000 Sq.ft. @ Rs.750/- per Sq.ft.)	112.50	101.25	11.25
2.2	Machinery & other components of Hard Interventions			
2.2.1	Coir Needle Felt and Coir Composite panel production setup	288.00	259.20	28.80
2.2.2	Electricals and accessories	4.50	4.05	0.45
2.2.3	Handling infrastructure (Bull loader, Trolleys)	5.00	4.50	0.50
2.2.4	Working Capital (for one cycle of operation)	60.00	54.00	6.00
	Total - Machinery & other components of Hard Interventions	357.50	321.75	35.75
	Total Hard Interventions Cost (2.1 + 2.2)	470.00	423.00	47.00
	TOTAL INTERVENTIONS COST (SOFT & HARD)	490.00	443.00	47.00
3	Cost of TA	30.00	30.00	-
4	Cost of IA/SPV including CDE	20.00	20.00	-
	TOTAL PROJECT COST	540.00	493.00	47.00

11.1 Cost of Establishment & Operation Common Facility Center

The project components and the cost thereof are mentioned below:

(Rs.Lakhs)

Cost Of Project	Total	SPV Share	Gol Grant
Hard Interventions - Grant Components			
Building & Civil works	112.50	11.25	101.25
Plant and Machinery	288.00	28.80	259.20
Electricals & accessories	4.50	0.45	4.05
Handling infrastructure	5.00	0.50	4.50
Working Capital	60.00	6.00	54.00
<i>Total</i>	<i>470.00</i>	<i>47.00</i>	<i>423.00</i>
Other Non-Grant components			
Contingencies (2.00%)	6.01	6.01	-
Deposits	2.23	2.23	-
Prel. & Pre-operative Expenses	2.26	2.26	-
<i>Total</i>	<i>10.50</i>	<i>10.50</i>	<i>-</i>
Total	480.50	57.50	423.00

The CFC cost of establishment and operation works out to Rs.480.50 Lakhs, of which Rs.57.50 lakhs will be the SPV share and Rs.423.00 lakhs will be the Grant component under SFURTI from the Government of India. The above project cost includes **Hard interventions viz. Building and Core machinery components and Working capital amounting to Rs.470.00 lakhs**, which are to be contributed by SPV and Gol in 10:90 ratio and also includes the lateral components viz. Contingencies, Deposits, Prel. & Preop. Expenses & Working capital, which amounts to Rs.10.50 lakhs, for which Gol Grant is not applicable and the cost would be borne by the SPV separately.

11.2 Working Capital

Working capital gap for the first year of operation works out to Rs.60.00 lakhs. This is based on 18 days stock of Consumables, 2 days work-in-progress, 8 days finished goods stock and receivables for 8 days. The SPV would contribute 10% of the total working capital requirement and Rs.54.00 lakhs would be met by the Gol grant under SFURTI. The increase in working capital in the subsequent years of operation will be met by internal generation. The details are provided in **Financial Statement 2**.

12 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 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
- 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 NEEDS, PMEGP etc. for individual cluster members are foreseen as below:

Scheme	No. of beneficiaries/ Activity	Cost of project	Scheme Funding (Rs. in lakhs)	Bank Loan (Rs. in lakhs)	Promoter Contribution (Rs. in lakhs)
NEEDS	5 (Coir Fibre Extraction units)	5 members x Rs.50.00 lakhs =Rs.250.00 lakhs	62.50	175.00	12.50
PMEGP	5 (Coir Fibre Extraction units)	5 members x Rs.25.00 lakhs =Rs.125.00 lakhs	43.75	75.00	6.25
	Total	Rs.375.00 lakhs	106.25	250.00	18.75

The additional investment estimated in the cluster is Rs.375.00 Lakhs with the scheme funding of Rs.106.25 lakhs, bank credit of Rs.250.00 lakhs and the promoter's contribution of Rs. 18.75 lakhs.

13 Enhanced Project Cost & Means of Finance

The Project cost and Means of Finance of CORE SFURTI project is illustrated in **Chapter 8**. Convergence of initiatives would be undertaken to improve the viability of projects, strengthening the value chains and market linkages and to enable the 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
1	Core SFURTI	546.50	499.35	47.15
2	Convergence initiatives (Establishment of individual units under various schemes)	375.00	106.25	268.75
	Total	921.50	605.60	315.90

The enhanced project cost including the Core SFURTI and other convergence initiatives works out to Rs.921.50 lakhs, whereas the corresponding Grant component is Rs.605.60 lakhs and that of Contribution and bank loan is Rs.315.90 lakhs.

14 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
1.1.3	Entrepreneurship Development Programme	I	Q2
1.1.4	Skill Upgradation Programme	I	Q3, Q4
1.1.5	Exposure Tour	II	Q2, Q3
1.2	Market Promotion		
1.2.1	Market Study Tour	II	Q1/Q2
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	II	Q2/Q3
2	HARD INTERVENTIONS		
2.1	Land Lease (15 years lease)	I	Q1
2.2	Building for CFC	I	Q1, Q2
2.3	Machinery for Common Facility Proposed		
2.3.1	Coir Needled Felt	I	Q3
2.3.2	Coir Composite Panels	I	Q4

15 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
No. of operational hours per shift	8 per shift
Installed Production Capacity per shift	3200.00 Sq.M. per shift
Density	0.80 Kg.
Installed Production Capacity per shift	2560.00 Kgs. per shift
Number of Shifts	1 Shifts per day
Capacity Utilisation	
- First year	70%
- Second year	80%
- Third year onwards	90%
Raw material requirement (Coir Fibre)	120% of Production Quantity (i.e. Yield wastage: 20%)
Coir Fibre requirement for entire felt production	3,072.00 Kgs. per day for the installed capacity
Cost of raw material (Coir Fibre)	Rs. 16,000.00 per ton
Coir Composite Panel Section:	
Installed production capacity per hour	20 sheets
No. of hours per shift	8 hours
Number of shifts	2 Shifts per day
Capacity Utilisation	
- First year	70%
- Second year	80%
- Third year onwards	90%
Panel size	8 ft. x 4 ft.
Selling Price	Rs. 1,350.00 per board
Selling price	Rs.42.18 per Sq.ft.
Felt requirement per board	6.25 Sq.m. per board (2.5m x 1.25m)
Felt requirement for 2 shifts (in Sq.m.)	2,000.00 Sq.m. per day

Felt requirement for 2 shifts (in Kgs.)	1,600.00 Kgs. per day
Coir Fibre requirement (for board production)	120% of Needle felt output
Coir Fibre requirement (for board production)	1,920.00 Kgs. per shift for installed capacity
Resin requirement	35% of Coir Fibre requirement
Cost of Resin	Rs.80,000 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.640 per board of 8ft. X 4 ft. size.
Cost of consumables (Chemicals)	Rs.25 per board of 8ft. X 4 ft. size.
Cost of fuel (Panel section)	Rs.20 per board of 8ft. X 4 ft. size.
Power Cost	Rs.6.50 per KWH
Repairs & Maintenance	1.50% of plant and machinery cost in the first year of operation and 10% increase in every subsequent years
Administrative Expenses	0.50% Of sales realisation
Selling Expenses	1.00% Of sales realisation

The Sales Realization, Profitability and Break Even point worked out on the above said assumptions are given below:

	(Rs.lakhs)				
Year	1	2	3	4	5
Annual Sales Realization	972.72	1111.68	1250.64	1250.64	1250.64
Profit Bef. Tax	141.94	170.70	199.30	196.45	193.43
Provision for taxation	28.28	45.40	60.76	63.83	65.87
Profit after Tax	113.67	125.30	138.54	132.62	127.56
Break Even Point	34%	31%	28%	29%	30%

Net Present Value (NPV) : Rs.208.73 lakhs

Internal Rate of Return (IRR) : 22.58 %

Project Financials:

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

Statement 13: Sensitivity analysis

16 Proposed Implementation Framework

16.1 Role of Implementing Agency

The role and responsibility of the IA includes the following:

- a) 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
- b) The IA would implement various interventions as outlined in the approved DPR
- c) Undertake procurement and appointment of contractors, when required, in a fair and transparent manner
- d) The IA will enter into an agreement with the Nodal Agency for timely completion on cluster intervention and proper utilization of Government Grants
- e) Operation & Maintenance (O&M) of assets created under the project by way of user-fee based model
- f) Responsible for furnishing Utilization Certificates (UCs) and regular Progress reports to Nodal Agency in the prescribed formats.

16.2 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 Technical agency will identify a potential Implementing agency (IA) for the cluster. The Implementing agency is Shiyamala Educational Rural Youth Welfare Trust, the Non Government Organization, having its registered office at 147, Palaniappan Street, VNS Campus, Pattukkottai, Thanjavur District. The above agencies work in tandem towards the successful implementation of the project in a sustainable manner.

16.3 Structure of the SPV

A Special Purpose Vehicle (SPV) is formed and registered as Private Limited Company under sub-section (2) of section 7 of the Companies Act 2013 and rule 18 of the Companies (Incorporation) Rules, 2014 in the name of "CHOLANADU COIR

PLY BOARDS PRIVATE LIMITED” as per the Certificate of Incorporation issued by Registrar of Companies, Coimbatore dated 27.08.18. The CIN of the company is U74999TN2018PTC124208. The registration has been carried out with 6 members as Directors and 9 additional members, who have evinced interest, are proposed to be included as shareholders. The SPV will be strengthened to manage the Cluster activities in sustainable nature after the project implementation is over.

16.4 Composition of the SPV

An SPV is formed with 15 members with 6 Directors and the list is given below:

S.No.	Name	Designation	Present Activity
1	S.Ilavarasan	Managing Director	Coir Fibre Manufacturing
2	T.Veeramani	Director	Coconut Husk Trading
3	I.Guganesan	Director	Coir Fibre Manufacturing
4	R.Sreevarshini	Director	Coir Yarn Spinning
5	G.Govindaraj	Director	Coconut Husk Trading
6	V.Ashwathy	Director	Coir Yarn Spinning & Curling
7	I.Anbarasi	Shareholder	Coir Fibre Trading
8	T.Vallusamy	Shareholder	Coconut Husk Trading
9	N.Ramasami	Shareholder	Coconut Husk Trading
10	K.Veeraseenan	Shareholder	Coir Pith Trading
11	B.Thiruveragan	Shareholder	Coir Yarn Trading
12	K.Alagesan	Shareholder	Coir Yarn Trading
13	G.Vetriselvan	Shareholder	Coconut Husk Trading
14	R.Ilayaraja	Shareholder	Coconut Husk Trading
15	N.Veerappan	Shareholder	Coconut Husk Trading

17 Expected Impact

The pre-intervention & post-intervention scenario of the cluster is given below:

S. No.	Parameter	Pre-Intervention	Post-intervention					
			Y 1	Y2	Y3	Y4	Y 5	Y 10
1	Cluster Turnover (Rs. Lakhs)	3331.00	5970	6328	6686	7044	7460	9325
2	Investment (Rs. Lakhs)	970.00	1497	1586	1676	1766	1870	2338
3	Employment (Nos.)	809	1030	1090	1154	1215	1288	1610
4	Wages per day (Rs.)	300	420	450	480	510	525	650
5	Profitability (%)	8-10%	20%	22%	24%	25%	25%	25%

- Strong linkages among the Cluster members and actors in all levels of the value chain and an established Collaborative setup in place to undertake development initiatives & address common issues.
- Emergence of specialized support service providers and their active involvement in the development process
- Establishment of new units by converging various schemes of State and Central Governments (such as NEEDS, PMEGP etc.) resulting in additional investments and employment in Coir sector by the cluster members
- Improved access to financial capital for cluster members
- 100% Coverage of cluster artisans under social security schemes

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

			Statement	1			
COST OF PROJECT AND MEANS OF FINANCE							
Cost Of Project		RS.LAKHS		SPV Share	GoI Grant		
Land		Leased					
Building & Civil works		112.50		11.25	101.25		
Plant and Machinery		288.00		28.80	259.20		
Electricals and accessories		4.50		0.45	4.05		
Handling equipments (Bull loader, trolley etc.)		5.00		0.50	4.50		
Contingencies	1.50%	6.01		6.01	0.00		
Deposits (as per statement 1.1)		2.23		2.23	0.00		
Prel. & Pre-operative Expenses		2.26		2.26	0.00		
Working Capital (as per statement-2)		60.00		6.00	54.00		
Total		480.50		57.50	423.00		
Means of Finance							
SPV Contribution		57.50					
Grant under SFURTI Scheme		423.00					
Total		480.50					

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

		Statement-1.1					
DEPOSITS							
Deposits payable to TNEB for	120	KVA Power Connection					
	Amount	Total					
Details	Per KVA	(Rs.Lakhs)					
Development Charges	Rs.200	0.24					
Earnest Money Deposits	Rs.600	0.72					
Security Deposit	Rs.600	0.72					
		1.68					
Other Deposits / Advances		0.55					
Total		2.23	say	Rs.2.23	Lakhs		
		Statement-1.2					
PRELIMINARY AND PREOPERATIVE EXPENSES							
Statutory fees (RoC, CTO etc.)	0.46						
Trial run expenses	1.80						
	2.26						

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

ASSESSMENT OF WORKING CAPITAL							Statement-2
Current Assets	Days	1	2	3	4	5	
Coir Fibre stock	18	6.19	7.08	7.96	7.96	7.96	
Work in Process	2	5.26	5.99	6.71	6.73	6.75	
Finished products	8	21.06	23.94	26.83	26.90	26.98	
Receivables	8	25.94	29.64	33.35	33.35	33.35	
Cash for expenses		4.00	4.40	4.84	5.32	5.86	
Other current assets		1.85	1.94	2.04	2.14	2.25	
Total		64.30	72.99	81.73	82.41	83.15	
Current Liabilities							
Sundry creditors for R.M	10	3.44	3.93	4.42	4.42	4.42	
Other Current Liabilities		0.86	0.95	1.04	1.14	1.26	
Total		4.30	4.88	5.46	5.57	5.68	
Working Capital Gap		60.00	68.11	76.26	76.84	77.47	

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

COST OF PRODUCTION & PROFITABILITY					Statement	3	
				RS.LAKHS			
Years		1	2	3	4	5	
Coir Needle Felt							
Installed Production Capacity per shift	Sq.M.	3200	3200	3200	3200	3200	
Number of shifts per day		1	1	1	1	1	
Number of working days per annum		300	300	300	300	300	
Installed Production Capacity per annum	Sq.M.	960000	960000	960000	960000	960000	
Capacity Utilisation		70%	80%	90%	90%	90%	
Annual Production Quantity	Sq.M.	672000	768000	864000	864000	864000	
Wastage	5%	33600	38400	43200	43200	43200	
Nett Annual Production Quantity	Sq.M.	638400	729600	820800	820800	820800	
Felt requirement for Composite boards	Sq.M.	420000	480000	540000	540000	540000	
Felt surplus for external sales	Sq.M.	218400	249600	280800	280800	280800	
Coir Composite Panels:							
Installed Production Capacity per hour	Sheets	20	20	20	20	20	
No. of hours per shift		8	8	8	8	8	
Installed Production Capacity per shift		160	160	160	160	160	
Number of shifts per day		2	2	2	2	2	
Number of working days per annum		300	300	300	300	300	
Installed Production Capacity per annum	Sheets	96000	96000	96000	96000	96000	
Capacity Utilisation		70%	80%	90%	90%	90%	
Annual Production Quantity	Sheets	67200	76800	86400	86400	86400	
Annual Sales Realisation - Panels	Rs. 1,350.00	907.20	1036.80	1166.40	1166.40	1166.40	
Annual Sales Realisation - Felt	Rs. 30.00	65.52	74.88	84.24	84.24	84.24	
Total Annual Sales Realisation		972.72	1111.68	1250.64	1250.64	1250.64	Contd...

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

					Statement-3 contd...		
COST OF PRODUCTION							
Needle felt							
Coir Fibre requirement		645.12	737.28	829.44	829.44	829.44	
Cost of Coir fibre	Rs. 16,000.00	103.22	117.96	132.71	132.71	132.71	
Composite boards							
Felt requirement for boards	Sq.M.	420000.00	480000.00	540000.00	540000.00	540000.00	
Felt requirement boards	Tons	336.00	384.00	432.00	432.00	432.00	
Coir Fibre requirement for Felt production	Tons	403.20	460.80	518.40	518.40	518.40	
Resin requirement		141.12	161.28	181.44	181.44	181.44	
Cost of Resin	Rs. 80,000.00	112.90	129.02	145.15	145.15	145.15	
BOPP requirement	No.of Sheets	134400	153600	172800	172800	172800	
Cost of BOPP	Rs. 40.00	53.76	61.44	69.12	69.12	69.12	
Particle Board requirement	Nos.	67200	76800	86400	86400	86400	
Cost of Particle board	Rs. 640.00	430.08	491.52	552.96	552.96	552.96	
Cost of Consumables - Chemicals, Binders, Stabilizer etc.	Rs. 25.00	16.80	19.20	21.60	21.60	21.60	
Cost of Fuel	Rs. 20.00	13.44	15.36	17.28	17.28	17.28	
COST OF RAW MATERIAL - COMPOSITE BOARDS		730.20	834.51	938.82	938.82	938.82	
Cost of RM & Cons.- Composite boards		730.20	834.51	938.82	938.82	938.82	
TOTAL COST OF RAW MATERIAL & CONSUMABLES		730.20	834.51	938.82	938.82	938.82	
						Contd...	

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

					Statement-3 contd...		
Cost Of Power	Statement 6	12.88	14.14	15.40	15.40	15.40	
Salary & Wages	Statement 7	42.24	44.35	46.57	48.90	51.34	
Repairs & Maintenance	1.50%	4.32	4.75	5.23	5.75	6.32	
		789.63	897.75	1006.02	1008.87	1011.89	
Administrative Expenses	0.50%	4.86	5.56	6.25	6.25	6.25	
Selling Expenses	1.00%	9.73	11.12	12.51	12.51	12.51	
Prel. & Preop. Expenses (w/o)	10.00%	0.23	0.23	0.23	0.23	0.23	
Depreciation	Statement 8	26.33	26.33	26.33	26.33	26.33	
Total		830.78	940.98	1051.34	1054.19	1057.21	
Profit Bef. Tax		141.94	170.70	199.30	196.45	193.43	
Provision for taxation		28.28	45.40	60.76	63.83	65.87	
Profit after Tax		113.67	125.30	138.54	132.62	127.56	

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

			Statement	4			
Assumptions For Cost Of Production And Profitability							
Needle Felt Section:							
Installed Capacity of Needled Felt	160.00	meters per hour					
Maximum width	2.50	meters					
No. of operational hours per shift	8	per shift					
Installed Production Capacity per shift	3200.00	Sq.M. per shift					
Density	0.80	Kg.					
Installed Production Capacity per shift	2560.00	Kgs. per shift					
Number of Shifts	1	Shifts per day					
Capacity Utilisation							
- First year	70%						
- Second year	80%						
-Third year onwards	90%						
Raw material requirement (Coir Fibre)	120%	of Production Quantity (i.e. Yield wastage: 20%)					
Coir Fibre requirement for entire felt production	3,072.00	Kgs. per day for the installed capacity					
Cost of raw material (Coir Fibre)	Rs. 16,000.00	per ton					
Coir Composite Panel Section:							
Installed production capacity per hour	20	sheets					
No. of hours per shift	8	hours					
Number of shifts	2	Shifts per day					
Capacity Utilisation							
- First year	70%						
- Second year	80%						
-Third year onwards	90%						
Panel size	8 ft. x 4 ft.						
Selling Price	Rs. 1,350.00	per board					
					contd...		

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

				Statement 4 contd...		
Felt requirement per board	6.25	Sq.m. per board (2.5m x 1.25m)				
Felt requirement for 2 shifts (in Sq.m.)	2,000.00	Sq.m. per day				
Felt requirement for 2 shifts (in Kgs.)	1,600.00	Kgs. per day				
Coir Fibre requirement (for board production)	120%	of Needle felt output				
Coir Fibre requirement (for board production)	1,920.00	Kgs. per shift for installed capacity				
Resin requirement	35%	of Coir Fibre requirement				
Cost of Resin	Rs.80,000	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.640	per board of 8ft. X 4 ft. size.				
Cost of consumables (Chemicals)	Rs.25	per board of 8ft. X 4 ft. size.				
Cost of fuel (Panel section)	Rs.20	per board of 8ft. X 4 ft. size.				
Power Cost	Rs.6.50	per KWH				
Repairs & Maintenance	1.50%	Of plant and machinery cost in the first year of operation and 10% increase in every subsequent years				
Administrative Expenses	0.50%	Of sales realisation				
Selling Expenses	1.00%	Of sales realisation				

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

					Statement	5	
CALCULATION OF INCOME TAX							
				RS.LAKHS			
Years		1	2	3	4	5	
Net Profit		141.94	170.70	199.30	196.45	193.43	
Add: Straight Line Dep.		26.33	26.33	26.33	26.33	26.33	
Less: Wdv Depreciation		87.47	67.32	52.03	40.41	31.56	
Total		80.80	129.71	173.60	182.37	188.20	
Income Bef. Incentives		80.80	129.71	173.60	182.37	188.20	
Less: Deductions	0%	0.00	0.00	0.00	0.00	0.00	
Taxable Income		80.80	129.71	173.60	182.37	188.20	
Income Tax	35%	28.28	45.40	60.76	63.83	65.87	
Loss C/F		0.00	0.00	0.00	0.00	0.00	
Profit After Tax		113.67	125.30	138.54	132.62	127.56	

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

					Statement	6	
ESTIMATION OF POWER COST							
					RS.LAKHS		
Connected Load	120.00	KVA					
Maximum Demand	96.00	KVA					
		ANNUAL POWER COST					
Years		1	2	3	4	5	
Working Days		300	300	300	300	300	
Capacity Utilisation		70%	80%	90%	90%	90%	
Power consumption per annum (KWH)		136080	155520	174960	174960	174960	
Current Consumption Charges	Rs. 6.50	8.85	10.11	11.37	11.37	11.37	
Max. Demand Charges	Rs.350.00	4.03	4.03	4.03	4.03	4.03	
Annual Power Bill		12.88	14.14	15.40	15.40	15.40	
Assumptions:							
Power Factor	0.90						
Average Load Factor	0.75						
Average Power Cost/K W H	Rs.6.50						
No. of working hours per shift	8.00						
No. of shifts per day	1						

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

				Statement	7		
MANPOWER REQUIREMENT AND ESTIMATION OF COST							
			RS.LAKHS				
Description	Nos.	Salary	Annual				
		per month	Salary				
Managers	2	20000	480000				
Supervisors	3	10000	360000				
Male Workers	12	7500	1080000				
Female workers (Semi/Unskilled)	20	6000	1440000				
Admin and Accounts	5	8000	480000				
	Total	42		3840000			
	Add: Benefits	10%	384000				
	Grant Total		4224000				

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

					Statement	8	
ESTIMATION OF DEPRECIATION							
			RS.LAKHS				
Straight Line Method	VALUE	DEP. RATE	1	2	3	4	5
Building & Civil works	114.19	3.34%	3.81	3.81	3.81	3.81	3.81
Plant & Machinery	294.58	7.40%	21.80	21.80	21.80	21.80	21.80
Electricals & Accessories	4.57	7.40%	0.34	0.34	0.34	0.34	0.34
Handling infrastructure	5.08	7.40%	0.38	0.38	0.38	0.38	0.38
Total	418.41		26.33	26.33	26.33	26.33	26.33
WDV Method							
Building & Civil works		10.00%	11.42	10.28	9.25	8.32	7.49
WDV	114.19		102.77	92.49	83.24	74.92	67.43
Plant & Machinery		25.00%	73.65	55.23	41.43	31.07	23.30
WDV	294.58		220.94	165.70	124.28	93.21	69.91
Electricals & Accessories		25.00%	1.14	0.86	0.64	0.48	0.36
WDV	4.57		3.43	2.57	1.93	1.45	1.08
Handling infrastructure		25.00%	1.27	0.95	0.71	0.54	0.40
WDV	5.08		3.81	2.85	2.14	1.61	1.20
Total	418.41		87.47	67.32	52.03	40.41	31.56
Note: Contingency & Pre-operatives are apportioned with the cost of assets.							

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

PROJECTED CASH-FLOW STATEMENT							Statement	9
							RS.LAKHS	
Years		1	2	3	4	5		
Source Of Funds								
Promoters Capital	57.50							
SFURTI Grant	423.00							
Profit Before Int.,Dep. & Tax		168.27	197.03	225.63	222.78	219.76		
Increase in W.C.Loan		0.00	0.00	0.00	0.00	0.00		
Total	480.50	168.27	197.03	225.63	222.78	219.76		
Uses								
Inc. in Capital Expenditure	418.27							
Deposits (as per statement 1.1)	2.23							
Increase in W.Capital		60.00	8.11	8.15	0.58	0.63		
Provision For Taxation		28.28	45.40	60.76	63.83	65.87		
Total	420.50	88.28	53.51	68.91	64.41	66.50		
Surplus	60.00	79.99	143.52	156.72	158.37	153.26		
Opening Balance	0.00	60.00	139.99	283.51	440.23	598.60		
Closing Balance	60.00	139.99	283.51	440.23	598.60	751.87		

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

PROJECTED BALANCE SHEET							Statement	10
							RS.LAKHS	
Years	PR. PERIOD	1	2	3	4	5		
Liabilities								
Promoters Capital	57.50	57.50	57.50	57.50	57.50	57.50		
SFURTI Grant	423.00	423.00	423.00	423.00	423.00	423.00		
Reserves & Surplus		113.67	238.97	377.51	510.14	637.70		
W.C.Borrowings		0.00	0.00	0.00	0.00	0.00		
Current liabilities		4.30	4.88	5.46	5.57	5.68		
Total	480.50	598.47	724.35	863.48	996.20	1123.88		
Assets								
Gross Block	418.27	418.27	418.27	418.27	418.27	418.27		
Less: Accu. Depreciation		26.33	52.65	78.98	105.31	131.63		
Net Block	418.27	391.94	365.61	339.29	312.96	286.64		
Deposits	2.23	2.23	2.23	2.23	2.23	2.23		
Current Assets		64.30	72.99	81.73	82.41	83.15		
Closing Balance	60.00	139.99	283.51	440.23	598.60	751.87		
Total	480.50	598.47	724.35	863.48	996.20	1123.88		
	0.00	0.00	0.00	0.00	0.00	0.00		

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

						Statement	11
ESTIMATION OF BREAK-EVEN POINT							
						RS.LAKHS	
Years	1	2	3	4	5		
Fixed Expenses							
Salary & Wages	42.24	44.35	46.57	48.90	51.34		
Repairs & Maintenance	4.32	4.75	5.23	5.75	6.32		
Preliminary expenses	0.23	0.23	0.23	0.23	0.23		
Depreciation	26.33	26.33	26.33	26.33	26.33		
Total(A)	73.11	75.66	78.35	81.20	84.22		
Variable Expenses							
Total Cost Of Raw Material & Consumables	730.20	834.51	938.82	938.82	938.82		
Cost Of Power	12.88	14.14	15.40	15.40	15.40		
Administrative Expenses	4.86	5.56	6.25	6.25	6.25		
Selling Expenses	9.73	11.12	12.51	12.51	12.51		
Total(B)	757.66	865.32	972.99	972.99	972.99		
Sales Realisation	972.72	1111.68	1250.64	1250.64	1250.64		
Break Even Point	34%	31%	28%	29%	30%		

DETAILED PROJECT REPORT ON SALEM COIR PLY BOARD CLUSTER (OMALUR) DEVELOPMENT UNDER SFURTI SCHEME

					Statement	12	
ESTIMATION OF NET PRESENT VALUE AND INTERNAL RATE OF RETURN							
					RS.LAKHS		
Years	PR. PERIOD	1	2	3	4	5	
Cash Out Flow							
Capital Expenditure	418.27						
Preliminary & Preoperative Expenses	2.23						
Technical Know-How	0.00						
Working Capital Margin	60.00						
Total	480.50	0.00	0.00	0.00	0.00	0.00	
Cash Inflow							
Profit After Tax		113.67	125.30	138.54	132.62	127.56	
Depreciation		26.33	26.33	26.33	26.33	26.33	
W.C.Margin						33.35	
Residual Value Of F.Assets						104.57	
Total	0.00	139.99	151.63	164.87	158.95	291.81	
Net Cash Flow	-480.50	139.99	151.63	164.87	158.95	291.81	
Net Present Value	Rs.208.73	lakhs					
at 8% discount rate							
Internal Rate of Return	22.58%						