DETAILED PROJECT REPORT

Cluster Location: BHOGRAI, ODISHA

(Bhograi Coir Cluster, Balasore, Odisha)




SUBMITTED TO

COIR BOARD, KOCHI

PREPARED BY

ITCOT CONSULTANCY AND SERVICES LIMITED

Joint venture of SIDBI, IFCI, SIPCOT, TIIC, SIDCO and BANKS,

50 A, GREAMS ROAD, CHENNAI 600 006

TEL: 044-42936800, 28290324, FAX: 044-28293512

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Executive Summary

Name of the cluster	Bhograi coir Cluster, Balasore, Odisha
Type of cluster	Regular cluster
Location & Spread of the cluster	Bhograi Coir Cluster covers Bhograi Block of Balasore District, Odisha. This Block is the primary for Coir Cluster in terms of Coir products. The Geographical spread of the cluster measures about 10-12 Km radius.
Product range	The following products are produced in the cluster presently. • Coir Yarn • Coir Mat
Size of cluster & Type of units	The size of the cluster extends to 51 villages in Balasore district. The total number of beneficiaries estimated to be around 559 members which include coir workers in the cluster.
Key concern areas	• Sourcing of Coir Fibre and Coir yarn from distant places, which leads to increased price of the final product, due to logistics cost. • Even though husk availability is ample, no fibre extraction facility available within the cluster. • No organized effort towards husk collection within the cluster. • No other Coir activity than Mat making by artisans in the cluster. • Skill upgradation of artisans needed to improve the quality of mats and handicrafts products • Lack of knowledge on value added coir products viz. Geo-textiles, Coir pith manure, Coir pith blocks etc
Proposed Strategic Interventions	**Soft Interventions:** • Capacity Building initiatives • Market Promotion initiatives

<table>
<tr><td></td><td>Hard Interventions (Common facility creation):
Building for Common facility in 3 locations
Common facilities proposed:
<u>CFC-I:</u>
Coir Fibre Extraction
Coir pith compost/Manure production
<u>CFC-II:</u>
Automatic Coir Yarn spinning (5 M/cs.)
Fully auto. Geo-textiles production
<u>CFC-III:</u>
Automatic Coir Yarn spinning (1 M/c.)
Mat making
Handicrafts making
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</td></tr>
<tr><td>Budget for Soft interventions</td><td>Rs.15.00 lakhs</td></tr>
<tr><td>Budget for Hard interventions</td><td>Rs. 176.00 lakhs</td></tr>
<tr><td>Total Project Cost including Agencies cost</td><td>Rs. 216.34 lakhs</td></tr>
<tr><td>Means of Finance</td><td>Grant under SFURTI scheme : Rs. 198.74 lakhs
IA/SPV share : Rs. 17.60 lakhs</td></tr>
<tr><td>Post Intervention Scenario (Expected Impact)</td><td><table>
<tr><th>S.No.</th><th>Parameter</th><th>Pre-intervention</th><th>Post-intervention</th></tr>
<tr><td>1</td><td>Cluster Turnover (Rs. Lakhs)</td><td>24.00</td><td>150.00</td></tr>
<tr><td>2</td><td>Employment (Nos.)</td><td>559</td><td>650</td></tr>
<tr><td>3</td><td>Wages per day (Rs.)</td><td>100.00</td><td>150.00</td></tr>
<tr><td>4</td><td>Profitability (%)</td><td>8-10%</td><td>18-20%</td></tr>
</table></td></tr>
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	➢ Establishment of new units by converging various schemes of State and Central Governments (such as CITUS, 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
Cluster Management – Post interventions	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. **Orissa Cooperative Coir Corporation Ltd**, having its registered office at No.361, Sahid Nagar, Bhubaneswar– 751007 is proposed as the Implementing Agency. Special Purpose Vehicle (SPV) is formed and registered as Trust in the name of **"M/s SPV FOR BHOGRAI COIR CLUSTER"** as per the Trust Deed dated 22.12.2017. The registration has been carried out with 7 trustees, 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.

1 Preamble

India is the largest coir producer in the world accounting for more than 80 per cent of the total world production of coir fibre. Coir is popularly known as the 'golden fibre.' It is a natural fibre extracted from fibrous husk of the coconut sell and is used to make a wide range of products such as ropes, mats, mattresses, baskets, brushes, brooms etc.

Coir's global production is about 350,000 tonnes. India and Sri Lanka being the major producers of coir, account for 90 per cent of the world production. Coir industry in India is an important cottage industry contributing significantly to the economy of the major coconut growing States and Union Territories, i.e., Kerala, Orissa, Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Assam, Goa, Andaman & Nicobar, Lakshadweep and Pondicherry. About 5.5 lakh get employment, mostly part time, from this industry. Exports from the coir industry are around Rs 70 crore. 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.

India has made unprecedented progress in coconut cultivation from mid 2014 to 2018 and now it has become the leading country in coconut production and productivity. Productivity increased to 11516 fruits per hectare in 2017-18 as compared to 10122 in 2013-14. Between 2014 and 2018, 13,117 hectare was brought under new plantation as compared to 9,561 hectare during 2010-2014. The coconut production in Odisha was 341.68 million nuts in 2016-17. It increased by 13.98 million nuts as compared to the year 2015-16.

The Industrial utilization of coconut husk was very low in India. With the implementation of various schemes of the Coir Board the Industrial use of coconut husk has picked up in the non-traditional areas such as Tamil Nadu, Karnataka, Andhra Pradesh, **Orissa,** Gujarat, Maharashtra, West Bengal, Assam, Tripura, Andaman Nicobar Islands, Lakshadeep islands etc.

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). Coir Board has entrusted the task of preparation of Detailed Project Report for the Coir Cluster located at Bhograi, Balasore District, Odisha to

ITCOT Consultancy and Services Ltd. Accordingly, ITCOT has 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

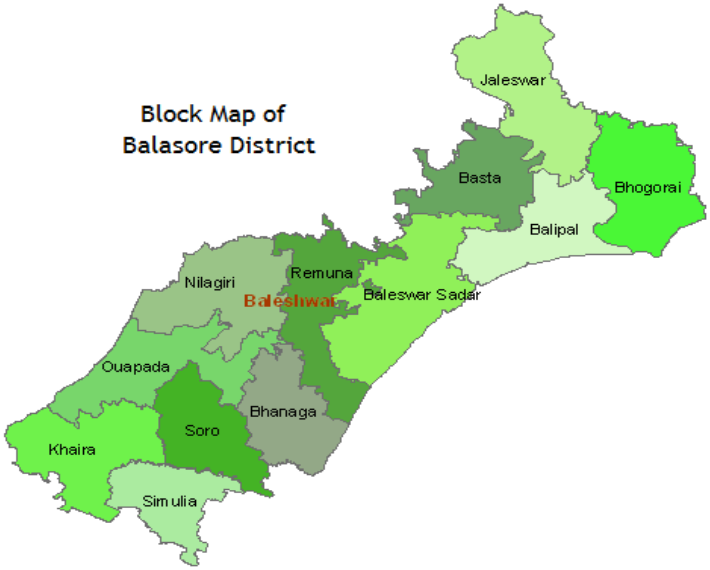
2.1 Background

Balasore District is also known as Baleshwar District. Baleshwar District is one of the 30 administrative districts of Odisha state in eastern India with a total geographical area of 3634 sq. km. The District is surrounded by Medinipur district of West Bengal in its northern side, Bay of Bengal in its east, Bhadrak district in its south and Mayurbhanj and Kendujhar districts lies on its western side. It is one of the most populous districts of the state as it accommodates 5.50% of total population of the state. Balasore District is one of the economically strong districts in Odisha, which is privileged in both agriculture and industry. In spite of being an agrarian economy, agriculture is the main stay of the people of Balasore.

It is in the coastal section of Odisha blessed with hot and humid climate, with alluvium soil and intersected by the perennial rivers, which collectively provides conducive infrastructure for the growth of agriculture in the region. Rice, Pulses, coconut, betel, oil seeds like groundnut, mustard, castor and linseed are grown in the District of Balasore.

2.2 Regional setting of the Cluster

The regional setting of the cluster extends over Bhograi Block of Balasore District. The block map of Balasore district is given below:



2.3 Location

Bhograi Coir Cluster covers Bhograi Block of Balasore District, Odisha. This Block is the primary for Coir Cluster in terms of Coir products covering around 51 villages. Bhograi Block covers 340 villages. The Geographical spread of the cluster measures about 10-12 Km radius.

2.4 Evolution of the Cluster

The Cluster is categorized as **'INDUCED CLUSTER'**, the inducing factor being the plentiful availability of raw material, the coconut husk.

Odisha is one of the major coconut producing states of the country, where about 50,906 hectares of land is under coconut cultivation with overall production of 3277 lakh nuts. The total coconut cultivation area of Balasore district in 2015-16 is 1,486.00 hectares, coconut production is 70.08 lakh nuts and the productivity is 4,716.00 nuts per hectare.

The details of area of cultivation, production and productivity of Coconuts in Balasore district is given below:

Year	Area (Ha)	Production (Lakh Nuts)	Productivity (Nuts/Ha)
2010 - 2011	1160.00	67.57	5825.00
2011 - 2012	1456.00	69.04	4742.00
2012 - 2013	1472.00	70.22	4770.00
2013 - 2014	1472.00	70.22	4770.00
2014 - 2015	1472.00	70.22	4770.00
2015 – 2016	1486.00	70.08	4716.00
Average (2010-16)	**1419.67**	**69.56**	**4900.00**

2.5 Demography and Growth trends

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

Description	2011	2001
Actual Population	2,320,529	2,024,508
Male	1,185,787	1,036,511

Description	2011	2001
Female	1,134,742	987,997
Population Growth	14.62%	19.33%
Area Sq. Km	3,806	3,806
Density/km2	610	532
Proportion to Orissa Population	5.53%	5.50%

Balasore is one of the most populous districts of the state. As per the Census Data of 2011, the total population of the District is 23,20,529. Of this the Male population is 11,85,787 and the female population is 11,34,742. It occupies only 2.44% of the total land mass of the state but accommodates 5.50% of total population. The population density of the district (610 persons) is very high; more than double that of Orissa State (270 persons). The decadal growth rate (2001-2011) of population in the district is also high (14.6%) as against 14.0% for the State.

2.6 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.

2.7 Human Development Aspects

As per 2011 censes, the total workforce of the district is 9,32,707 of which 6,18,064 are main workers and 3,14,643 are marginal workers. It accounts for 40.19% of the total population of Odisha. The non-workers to the total population were 59.81% in 2011. The total work participation rate (the percentage of total workers to total population) of the district was 40.19%. In rural areas, it was 41% and 33.80% in urban areas.

The Coir industry is agro based industry capable of providing rural employment, mostly to women. Presently there is limited activity in Coir and the number of

workers directly engaged in coir activity is about 559 and the present income level is Rs.100/- to Rs.150/- per day.

2.8 Key Economic Activities in the region

- Balasore district is one of the economically strong districts in Odisha, which is privileged in both agriculture and industry.
- People of Balasore are dependent on agriculture as their major source of livelihood. About 67% of the total workforce is either cultivators or agricultural labourers. The coconut and betel are the prime products of the district being produced all around the year.
- The district is the nodal agency for promotion and establishment of small, medium and large industries as well as for the cottage and handicraft industries in the district.
- In Balasore, people are also working in small and medium scale industries. A total of 5,728 people, were employed in large and medium scale industries as on 31st march 2017. Total of 53,394 were employed in Micro and small scale industries by the end of 2015.
- Apart from the agriculture, construction works forms a major source of income in Balasore. The agricultural workers are mostly involved in construction work during off season.
- There are many micro enterprises set up in the district in different sectors, the prominent ones are food & allied, Glass & ceramics, electronics, textiles and servicing.
- Ori Plast Limited, Jagannah Biscuits Private Limited, Odisha rubber Industries and Odisha plastic processing are some of the award winning small scale units in the district.
- Birla Tyres, Ispat Alloys Limited, Emami Paper Mills Limited and Polar Pharma India Limited are some of the large scale industries which are contributing in a big way towards the growth of the economy of the District.

2.9 Infrastructure – social, physical, financial and production related

The infrastructure details of Balasore district is tabulated as below:

S.No	Indicator	Details	
1.	Total Geographical Area	3806 Sq.Km	
2.	Population	23,20,529	
		Male	**Female**
		11,85,787	11,34,742

S.No	Indicator	Details	
		Rural	**Urban**
		20,67,236	2,53,293
3.	Population Growth	14.62%	
4.	Sex Ratio (per 1000 males)	957 females	
5.	Literacy rate	79.79%	
		Male	**Female**
		87.00%	72.28%
6.	Administrative Setup		
	Municipalities	3	
	No.of Blocks	12	
	No.of Taluks	12	
	Revenue Villages	3049	
	No. of Inhabited Revenue villages	2774	
	No. of uninhabited Revenue villages	275	
	Gram Panchyats	360	
7.	Agriculture		
	Total area	3,77,440 Ha	
	Area under Agriculture	2,50,550 Ha	
	Net sown area	2,16,000 Ha	
8.	Forest	332.21 Sq.km	
9.	Transport Infrastructure		
	Road length (NH, SH, Rural roads etc)	7611 Kms.	
	Railway stations	14 Nos.	
	Length of rail network	114.98 Kms.	
10.	Commercial Banks & Branches	24 & 291 Nos.	
11.	Education		
	Primary Schools	1495 Nos.	
	University	1 No.	
	Colleges	56 Nos.	
12.	Veterinary Dispensaries	21 nos.	
13.	Primary Health centres	68 nos.	
14.	Allopathic Hospital	87 Nos.	

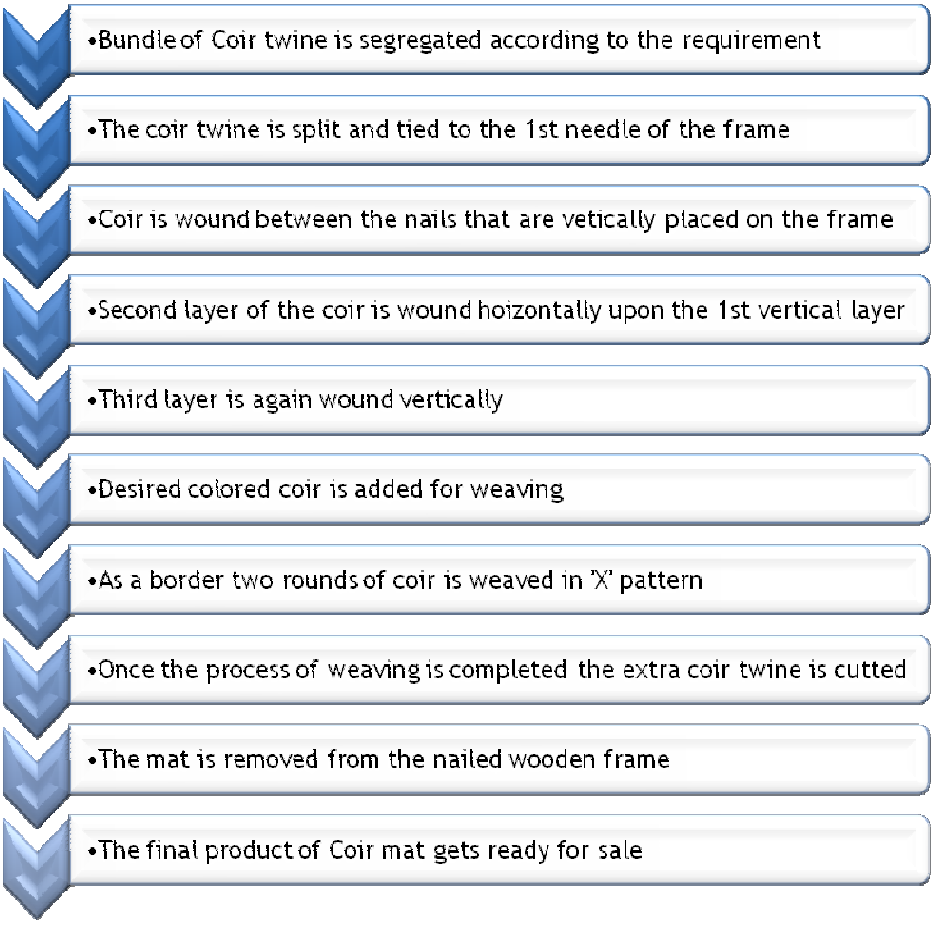
3 Cluster Value Chain Mapping

3.1. Product Profile

Coir Mat making is the major activity undertaken in the cluster. Coir mats are purely handmade products, which are 100% organic, ethnic, biodegradable and hygienic that is strong, resistant and moisture in nature. The brushing qualities of coir doormats and their ability to keep the dirt away make the product a unique one. These mats are produced in various shapes like rectangular, star shaped and etc. The coir mats are also produced with the wording on them like 'welcome'. These mats are made of standard size by being 2ft breadth and 1½ ft length. The cost of these coconut coir mats range from Rs.100/- to Rs.500/-.

Production Process

The process flow chart for Coir mat making is given below:



3.2. Value Chain Analysis

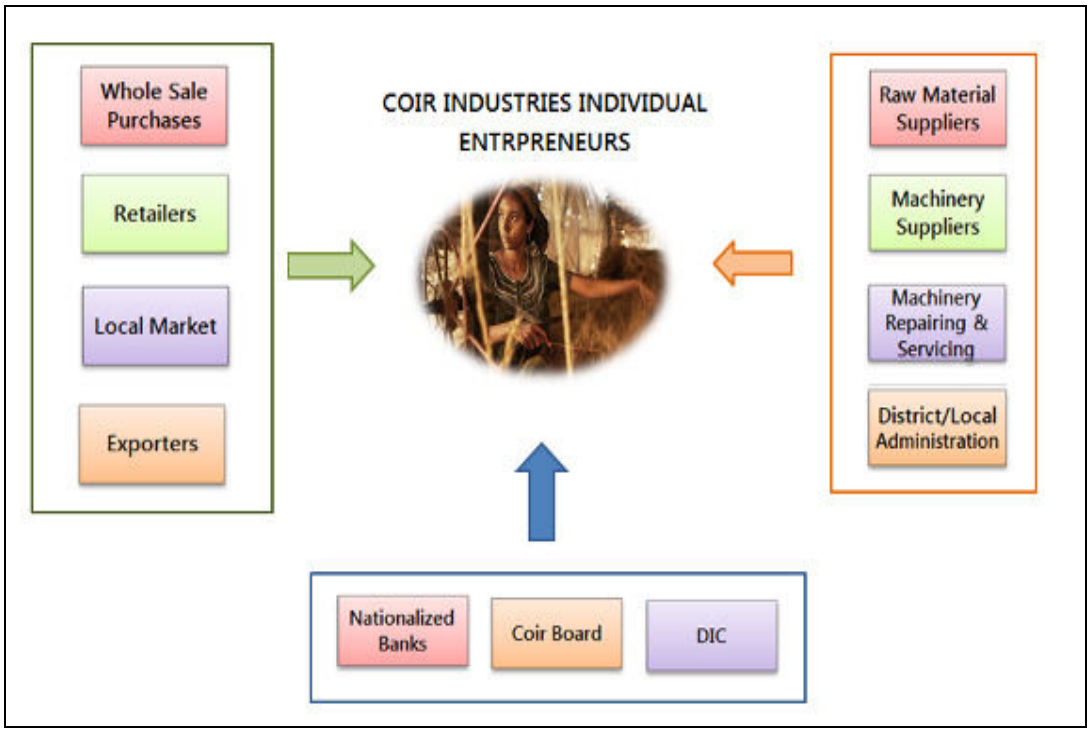
The value chain of coir frame mat (12x18) is given below.

Raw material (Two ply Yarn)
(400 gms per sq.ft x 1.5 sft = 600 gms @
Rs.47.60 per Kg = Rs. 28.56 per mat)
↓
Yarn Dyeing
(Rs.3/- per Kg - (600 gms @ Rs.3/-) = Rs.1.80 = Rs. 30.36/- per mat)
↓
Mat Making Charges
(Rs.10/-per sq.ft (1.5 sq.ft x Rs.10/-) = Rs.15/- = Rs.45.36 per Mat)
↓
Tightening & Finishing
(Rs.3/- per sq.ft x 1.5 sq.ft = Rs. 4.50 = Rs.49.86/- per mat)
↓
Profit Margin
(Rs.6/- per sq.ft = 1.5 sq.ft x Rs.6/- = Rs.9/- per Mat)
↓
Sales Price
(Rs.59/- per Mat (Whole sale price))

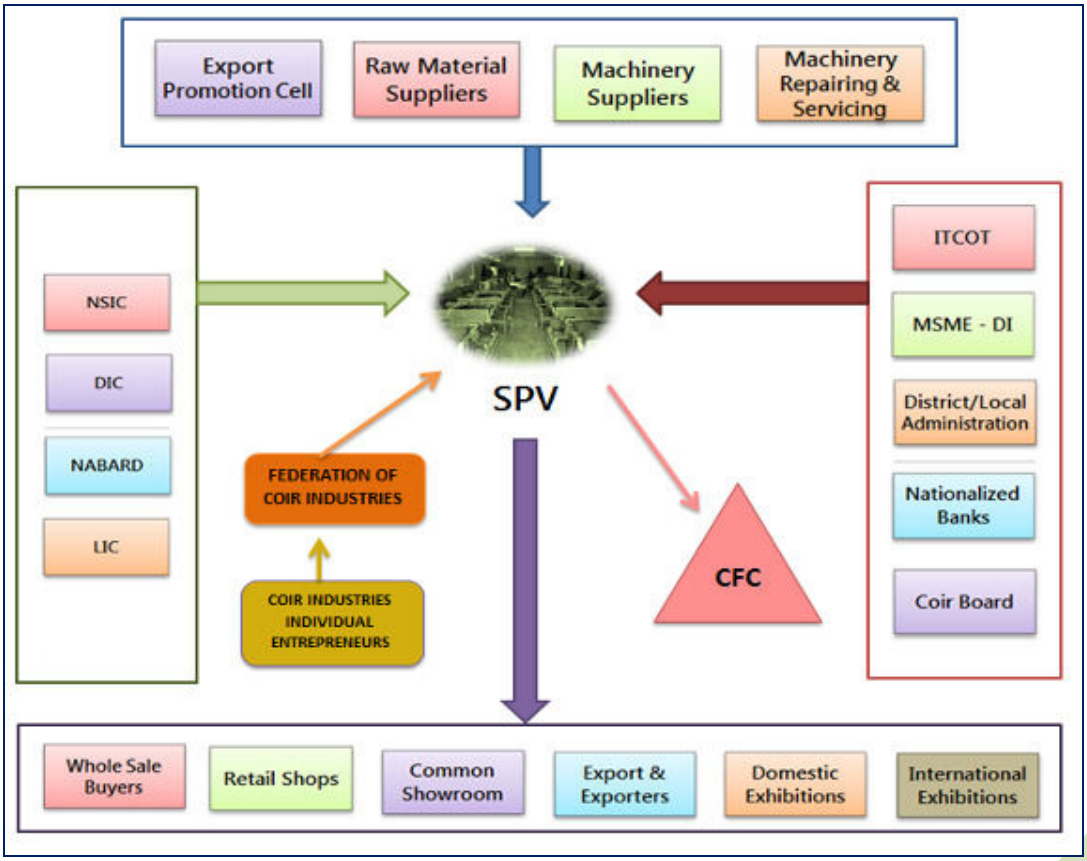
The production price is defined by the artisans on the basis of size, design work and consumption of the raw materials & consumables. As per the Sq.ft every rate is decided by the artisans. The profit margins for mats and yarn are low due to incurring additional transport expenses for raw material purchase from Puri in Odisha State. It may be noted that the labor charges in case of making mats is less and primary reason for same is that do not work for 8 hours. Most of the artisans are women and hence coir activity is taken up as a parallel activity to daily house hold work.

3.3. 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:



3.4. 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 Bhubaneswar which is near about 200 kms from the cluster area.

DISTRICT INDUSTRIES CENTRE (DIC)

The DIC, Balasore has been involved in the promotion and development of Micro, small & medium enterprise since 1978. The present economic scenario and growing unemployment problem has bestowed more responsibility on the centre towards eradicating them. The DIC organizes entrepreneurship development programmes in various palaces for imparting skills to unemployed youths for setting up of micro enterprises in the Islands.

NABARD

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

LEAD BANK

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

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:

	April 2016-March2017		April 2015-March2016		% Growth	
Item	**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:

	2016-17		Export Composition %	
Item	**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	Quatity (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

It is observed that the growth in coir product exported from India in 2016-17 has increased 27.30% in terms of quantity and 20% in terms of value compared to the previous year of 2015-16.

Proposed Marketing Plan:

- Coir Fibre will be internally value added as Coir Yarn in the cluster.
- Coir yarn will be value added as Geo Textiles & Mats.

- The marketing will be done through the retail show rooms (including Coir Board showrooms) as the state is one of the pilgrimage centres in India.
- Engaging Business Development Service providers to enhance the cluster market share in both domestic and export market for the products.
- Popularizing the brand as eco-friendly and exploring the opportunities in transport sectors and Government organizations with Coir Board support.
- Establishing linkages with retail showrooms (including Coir Board showrooms) in Chennai, Bangalore, Mumbai & Delhi and potential buyers for the products

5 SWOT and Need Gap Analysis

5.1. SWOT Analysis

In order to understand the Strength and Weakness of the cluster and also emerging opportunities and threats, SWOT analysis has been done. The highlights are depicted under:

Strengths

- The state ranks 5th in coconut production in the country with overall production of 341.68 million nuts in 2016-17.
- Sufficient availability of coconut husk (basic raw material) provides scope for development of coir sector in the cluster.
- Agricultural land is about 60% of the total geographical area of the district and it is in the coastal section of Odisha blessed with hot and humid climate makes the district an apt place for the growth of coconut.
- The district has very good network of railroad as well as national highway.
- Presence of Support institutions such as Coir Board, District Industries Centre, Commercial banks, Technical consultancy organization etc.

Weaknesses

- Unavailability of Coir Fibre locally, though husk availability is ample
- No awareness on export marketing procedure, as manufacturers are apprehensive to opt for direct exports
- Lack of Knowledge on manufacturing of value added/diversified products i.e. Geo-textiles, Coir pith compost etc.
- Adoption of traditional technology and lack of awareness of the modern Technology.
- Absence of collective/collaborative efforts to address common problems.
- Lack of formal networks for marketing and input procurement
- Limited contact with BDS providers and Technical Institutions
- Weak linkages with banks and financial institutions

Opportunities

- Potential for product diversification and value addition from existing products
- Availability of advanced machinery in fibre extraction, spinning, mat making and Geo textiles in the market at reasonable prices
- Coir products market demand is increasing day by day in domestic as well as export market
- Common procurement of raw material for availing price benefits.
- Implementation of SFURTI Scheme for focused development of the cluster.

Threats

- The district is highly prone to natural disasters. Bhograi is one of the block is very close to sea and therefore quite vulnerable to all types of calamities originating from sea.
- Presence of substitutes for coir like wood and plastic and still limited awareness among middle and lower income groups about importance of eco-friendly products
- Competition from coconut growing country viz.: Sri Lanka, Indonesia & Philippines etc.
- Utilization of husk for fuel purposes
- Expansion of industries and mining activity will have multiple effects in the form of land availability for agriculture and labour shortage.

5.2. Need Gap Analysis

- Sourcing of Coir Fibre and Coir yarn from distant places, which leads to increased price of the final product, due to logistics cost.
- Even though husk availability is ample, no fibre extraction facility available within the cluster.
- No organized effort towards husk collection within the cluster.
- No other Coir activity than Mat making by artisans in the cluster.
- Skill upgradation of artisans needed to improve the quality of mats and handicrafts products
- Lack of knowledge on value added coir products viz. Geo-textiles, Coir pith manure, Coir pith blocks etc.

6 Profile of the Implementing Agency

ORISSA COOPERATIVE COIR CORPORATION LTD., is a social development institution, incorporated as a Apex society under Orissa Cooperative Societies Act, 1962 (Orissa Act 2 of 1963), having its registered office at 361, Sahid Nagar, Bhubaneswar – 751007 is proposed as the Implementing Agency of this cluster. The details of the agency are given below:

Institutional Structure / Registration Details	Orissa Co-Operative Coir Corporation Ltd
Legal Status	Apex Society registered under Orissa Cooperative Societies Act, 1962 (Orissa Act 2 of 1963).
Date of Incorporation / Registration	BH-1/89 Dt.21.02.1989
Registered Address	Orissa Cooperative Coir Corporation Ltd., 361, Sahid Nagar, Bhubaneswar - 751007
Office Address / Location	District Industries Centre Campus, Rasulgarh Industrial Estate, Bhubaneswar, Dist.-Khurda, Pin-751010
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 /ManagingCommittee and Back ground of the Memebers	1	Purna Chandra Nanda	President	Advocate	91240-20028	-
	2	Pramila Behera	Vice President	Member Coir Society	78738 07881	-
	3	Netramani Dei	Member	Member Coir Society	99379 61397	-
	4	Bishnu Priya Nanda	Member	Member Coir Society	73772 38593	-
	5	Kalpana Chand	Member	Member Coir Society	97761 91574	-
	6	Sanjukta Mohanty	Member	Member Coir Society	-	-
	7	Sina Swain	Member	Member Coir	94371	-

Governance structure	#	Name of the Member	Designation	Back Ground / Profile	Contact Number	Email id
				Society	34783	
	8	Sandhya Rani Sahoo	Member	Member Coir Society	94390 02461	-
	9	Niramani Sahoo	Member	Member Coir Society	94371 34783	-
	10	Harish Gaurang	Member	Member Coir Society	94372 28666	-
	11	Pramod Kumar Mohapatra	Member	Member Coir Society	94394 97328	-
	12	Ramakanta Mallick	Member	Member Coir Society	-	-
	13	Bela Sethy	Member	Member Coir Society	-	-

Operational Profile	
Major Objectives – Vision, Mission, Goal of the Organisation	All round development of Coir Industry in the State through marketing & production of Coir
What are the focus areas of Operations	Marketing of coir product and implementation of Government Schemes on Coir in the State
Provide Key Projects / Activities being undertaken by the IA – Brief Description including the project scope, size , duration (mention specific experience in the area / sector of the proposed project	Implemented 1st phase SFURTI Programme in Jagatsinghpur and Puri District namely Alanahat Coir Cluster and Sakhigopal Coir Cluster.
Mention Key Clients / Donors associated with for Project implementation along with details on the nature of association	Coir Board, Government of India, MSME Department
Mention key partnerships/alliances (if any)	Directorate of Industries, Odisha, Cuttack

Management Profile	
Background of Key Personal (Professionals and others) with brief profile of the Senior Management Personnel	Sri Prabhu Prasad Choudhury, BSE Engg.,(Civil), Managing Director/Manager, D.I.C., Bhubaneswar

Bank Account Details	
Name of the Bank	Syndicate Bank
Branch Name	VaniVihar , Sahid Nagar, Bhubaneswar
Account Number	80042200001799

Contact Details	
Name of the Contact Person	Sri Prabhu Prasad Choudhury
Designation of Contact Person	Managing Director
Correspondence Address	D.I.C. Building , Industrial Estate, Rasulgarh, Bhubaneswar – 751010 Khurda, (Odisha)
CONTACT NUMBER	09937184192
E-MAIL ADDRESS	occcltdbbsr405@gmail.com

7 Project Concept & Strategy Framework

7.1 Project Rationale

The existing production potential of intermediate Coir products in the cluster is promising and hence the cluster is considered suitable for development in order to cater the growing market needs for the Value added coir products, both in domestic and international arena.

Focusing on empowering the Coir entrepreneurs in the cluster, the cluster development programme envisages establishment of Common Facility Centers (CFCs) on User fee basis to enable them the access of Modern technology/machinery to manufacture of value added products and to experience the benefits of value addition. Accordingly, the following projects are proposed as Common Facility Center for the cluster.

i) Coir fibre extraction, which is the basic value addition of the husks by producing Coir fibre,
ii) Coir two ply yarn production, which is the value addition of Coir fibre, to be utilized for further value addition to finished product.
iii) Geo-Textiles, which is the value addition yarn to finished product,
iv) Coir pith manure, which is value addition of Coir pith, the by-product generated during Coir Fibre Extraction.
v) Coir Frame Mat, which is the value addition of yarn to utility product
vi) Coir Handicrafts, which is the value addition of fibre

The establishment of the Common Facility Center revitalizes coir based activities in the cluster and the cluster convergence effect would result in additional investment in coir based industries, increased turnover and better employment opportunities.

7.2 Project Objective

- To advance growth and ensure sustainability of coir based industries with diversified basket of heterogeneous coir products based on target consumer segment.

- Setting up of suitable cluster-specific Common Facility Center (CFC) to ensure optimum output of value added coir products in the cluster
- Effective utilization of available raw material resource in the cluster by strengthening the linkages with raw material suppliers/farmers
- To form a Special Purpose Vehicle (SPV) with the participation of coir units in the cluster and to strengthen/capacitate the SPV as a whole.
- Strengthening linkages among the Cluster/SPV members and stakeholders and to have a Collaborative setup to address common problems.

7.3 Focus Products/Services

In addition to the Soft interventions for Capacity building and Market promotion initiatives, the following facilities are proposed as interventions for the development of the cluster:

- Coir fibre extraction facility
- Coir Two ply yarn spinning facility
- Geo-Textiles manufacturing facility
- Coir Pith Compost (Organic Manure)
- Coir Handicrafts manufacturing facility
- Coir frame mat manufacturing facility

7.4 Conceptual Framework / Project Strategy

- Cluster initiatives are considered to be efficient policy instruments in that they allow for a concentration of resources and funding in targeted areas with a high growth and development potential that can spread beyond the target locations (spillover and multiplier effects)
- The overall guiding principle is to make the Cluster more productive and the Cluster products more competitive by way of addressing the current production and supply bottlenecks, enhancing the marketability of the products, introduction of improved technology/techniques and strengthening Cluster linkages.
- Exploit the benefits arising out of optimization of resources and economies of scale. Create an autonomous governance framework in the cluster, in a step-by-step process that will affect dynamism and positive change in the cluster.

8 Project Interventions (Core SFURTI)

8.1 SOFT INTERVENTIONS

a) CAPACITY BUILDING:

- **Trust Building:** For strong association among cluster members to address common problems.
- **Awareness Programme:** To provide awareness about 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.

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
- **Design Development Programme:** To develop new design of the product to achieve commercial success of the business.
- **Engagement of Business Development Service Providers:** To improve the performance of the enterprise, its access to markets, and its ability to compete.

8.2 HARD INTERVENTIONS:

CREATION OF COMMON FACILITY CENTRE:

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

- Coir fibre extraction facility
- Coir Two ply yarn spinning facility
- Geo-Textiles manufacturing facility
- Coir Pith Compost (Organic Manure)
- Coir Handicrafts manufacturing facility
- Coir frame mat manufacturing facility

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 Programme

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

S.No	Particulars	
1	Proposed Programme / Intervention	Awareness Programme (on Fire & Safety & Social security schemes, Statutory requirements)
2	Target group	Coir workers
3	No. of Batches	2
4	Batch size	50 nos
5	Training content	Self & Group motivation
6	Trainer / Training Institution	ITCOT Consultancy & Services Ltd.
7	Cost of Training programme	Rs. 1,00,000/-
8	Implementation timeline	Quarter II

S.No	Particulars	
1	Proposed Programme / Intervention	Entrepreneurship Development Programme
2	Target group	Coir Entrepreneurs
3	No. of Batches	2
4	Batch size	25 nos
5	Training content	Project Opportunity Identification and Guidance, Support system for setting

		up of industries, Banking procedures, Taxation, Export Import procedures, Marketing etc.
6	Trainer / Training Institution	ITCOT Consultancy & Services Ltd.
7	Cost of Training programme	Rs. 2,00,000/-
8	Implementation timeline	Quarter II

S.No	Particulars	
1	Proposed Programme / Intervention	Programme on Technical & Managerial inputs (Productivity improvement, Energy audit, Quality systems, Taxation, Marketing strategies etc.)
2	Target group	Coir entrepreneurs
3	No. of Batches	3
4	Batch size	25 nos
5	Training content	Skill Training
6	Programme duration	3 days
7	Trainer / Training Institution	Coir Board
8	Cost of Training programme	Rs. 3,00,000/-
9	Implementation timeline	Quarter III,IV

S.No	Particulars	
1	Proposed Programme / Intervention	Exposure Visit
2	Target group	Coir Entrepreneurs
3	No. of Batches	As per requirement
4	Programme content	To enable entrepreneurs to interact with & learn from others, allowing them to view practical examples in the field
6	Coordinating Institution	SPV
7	Cost of Training programme	Rs. 2,00,000/-
8	Implementation timeline	Quarter II

9.2. Market Promotion Programme

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. 1,00,000/-
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	Programme content	Participation, Exhibit products to generate market linkages and enquiries
5	Coordinating Institution	IA & NA
6	Cost of Training programme	Rs. 2,00,000/-
7	Implementation timeline	Year II, Quarter II / Quarter III

S.No	Particulars	
1	Proposed Programme / Intervention	Design Development programme
2	Purpose	CFC Product development
3	No. of Batches	As per requirement
4	Programme content	New design development
5	Trainer / Training Institution	Coir Board & NID
6	Coordinating Institution	Nodal Agency
7	Cost of Training programme	Rs. 2,00,000/-
	Implementation timeline	Year II, Quarter III / Quarter IV

S.No	Particulars	
1	Proposed Programme / Intervention	Tie up with Business Development service(BDS) providers
2	Purpose	CFC Business development
3	No. of Batches	As per requirement
4	Content	Marketing & Technology
5	Coordinating Organization	SPV & Nodal agency
6	Cost of Training programme	Rs. 1,00,000/-
7	Implementation timeline	Year II, Quarter I / Quarter II

10 Hard Interventions

10.1. Creation of common facility centre:

a) Land

The land proposed is at three locations, Unit I, Unit II & Unit III. The details are given below:

Unit I: The land for Unit III has been taken for lease by the SPV, the lease period being 15 years and the extent of land is 6098 Sq.ft (0.14 acres). The land is located at Plot no.791, Bharabatia, Bhograi, Balasore District. This unit is proposed to accommodate coir fibre extraction facility and pith manure manufacturing facility.

Unit II: The SPV has taken land for long term lease (15 years) to an extent of 6,970 Sq.ft (0.16 acres) for creating the Common Facility Centre. The land is situated at plot no.284, Chanbadi, Jaleshwarpur, Bhograi, Balasore district. The unit is proposed to house automatic yarn spinning facility and geo textiles facility. The location has other infrastructural facilities such as road, power etc. and is suitable for the proposed CFC.

Unit III: The location address is Plot no. 71/96, Bindapadmapur, Bhograi, the extent of land being 4,356 Sq.ft (0.10 acres). This unit is proposed to house yarn spinning facility, Mat making facility and coir handicrafts facility.

b) Cost & Area of Building works

CFC activities	Built up Area (in Sq.ft)	Rate/Sq.ft. (in Rs.)	Cost of Building (Rs. in Lakhs)
Unit I			
Work shed for Auto yarn Spinning	1800	Rs.800/-	Rs.14.40 lakhs
Work shed for Geo Textiles	1200	Rs.800/-	Rs.9.60 lakhs
Sub Total	**3000**		**Rs.24.00 lakhs**
Unit II			
Work shed for Auto yarn Spinning	500	Rs.800/-	Rs.4.00 lakhs

CFC activities	Built up Area (in Sq.ft)	Rate/Sq.ft. (in Rs.)	Cost of Building (Rs. in Lakhs)
Work shed for Mat making & Coir Handicrafts	500	Rs.800/-	Rs.4.00 lakhs
Sub Total	**1000**		**Rs.8.00 lakhs**
Unit III			
Work shed for Fibre Extraction	1500	Rs.800/-	Rs.12.00 lakhs
Process shed for Pith Manure	300	Rs.800/-	Rs.2.40 lakhs
Sub Total	**1800**		**Rs.14.40 lakhs**
Grand Total	**5800**		**Rs.46.40 lakhs**

The estimate of building and civil works proposed has been worked out to **Rs.46.40 lakhs** as mentioned above.

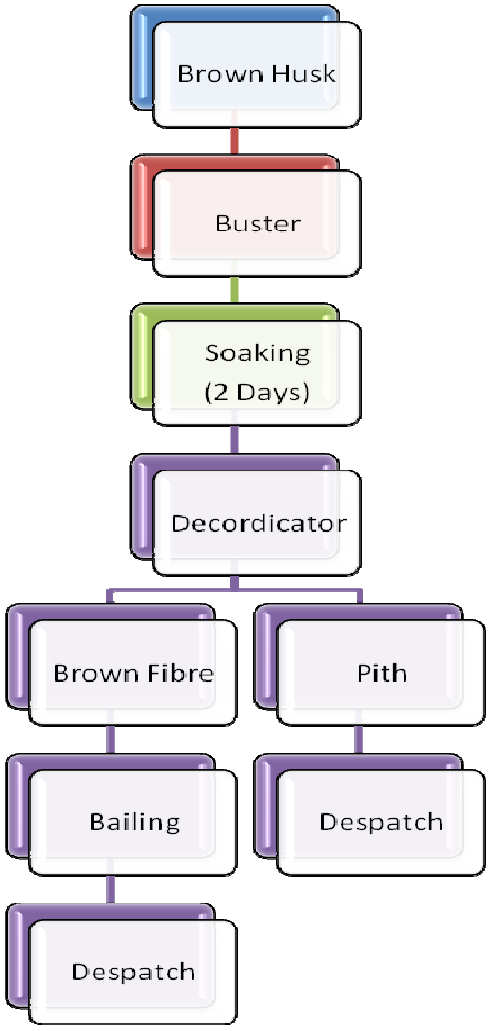
10.2. Product & Process

a) Coir Fibre Extraction

Coir fibre is 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.

Production Process:

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:



Soaking of coconut husk in water

Fibre Extraction Machine

Usage of Coir Fibre:

- Rope manufacturing
- Mattress & cushions filling

- Material for coir logs
- As a stitched blanket to control soil erosion
- Making fishing nets
- Prevent heat transfer and room insulation

Physical Properties of Coir Fibre:

Length in inches	6-8
Density (g/cc)	1.40
Tenacity (g/Tex)	10.0
Breaking elongation %	30
Diameter in mm	0.1 to 1.5
Swelling in water (diameter)	5 per cent
Moisture at 65 % RH	10.50 per cent

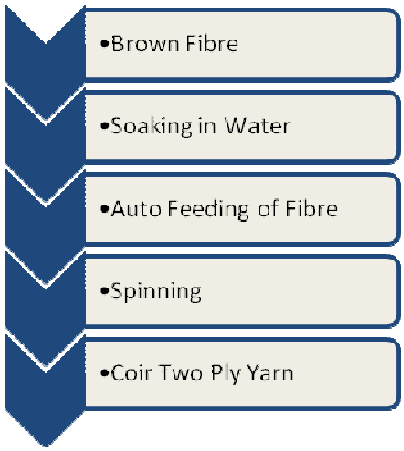
b) Coir Two Ply Yarn spinning facility

Coir Yarn is generally of two ply, spun from coir fibre with fully automatic spinning machines. The Coir yarn is of different qualities/grades based on the quality of fibre used, the nature of twist, presence of impurities etc.

Coir yarn, being an intermediate product is consumed for varied uses. For the proposed Coir Matting and Geo-textiles manufacturing facility in the cluster, spinning facility is created to strengthen the backward linkage i.e. ensured raw material resource. The need for this facility is to ensure uniform quality of raw material, which is mandatory for Coir matting and also to ensure uninterrupted supply & stable price.

Production Process:

The process flow chart for Coir yarn spinning is given below:



Two Ply Yarn Spinning Machine

Coir Two Ply Yarn

The automatic spinning machine units are capable of production of yarns of runnage varying from 50 to 300 meters/kg and twists from 10 to 30 twists/feet.

c) Coir Geo-textiles

Coir Geo-textiles are made from Coir yarn through fully automatic Power loom. Like other polymeric counterparts, coir geotextiles are developed for specific application in civil engineering like erosion control, ground improvement, filtration, drainage, river bank protection, road pavements, slope stability etc. Coir geo textiles promote the growth of new vegetation by absorbing water and preventing the topsoil from drying out. As it has strength and durability, it protects slopes and help natural vegetation to take root in the soil. Coir geo-textiles can be used to stabilize the soil temporarily when construction roads or banks. Coir geo-textiles are being used as a separation cum drainage layer in the road construction, as depicted below:

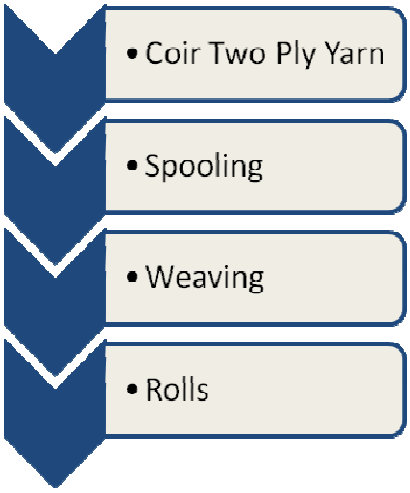
Coir Geo-textiles @ River banks

Coir Geo-textiles @Road construction

This biodegradable and environment friendly material is virtually irreplaceable by any of the modern synthetic substitutes. Due to growing awareness to preserve environment, use of biodegradable natural material has gained popularity. The natural fibre, coir, which has been used in geotextiles for the past 20 years, has already proved its worth.

Production Process:

The process flow chart for Geo Textiles is given below:



Coir Geo-textiles loom

Coir Geo-textiles

The BIS Standard for Coir Geo-textiles is IS 15872-2009. This standard prescribes the code for the guidelines of woven coir bhoovastra suitable for application in slopes of water bodies such as lakes, Ponds, Roads and Railway Embankments and also in Hill slopes including the selection of woven coir bhoovastra and installation methods.

d) Coir Compost

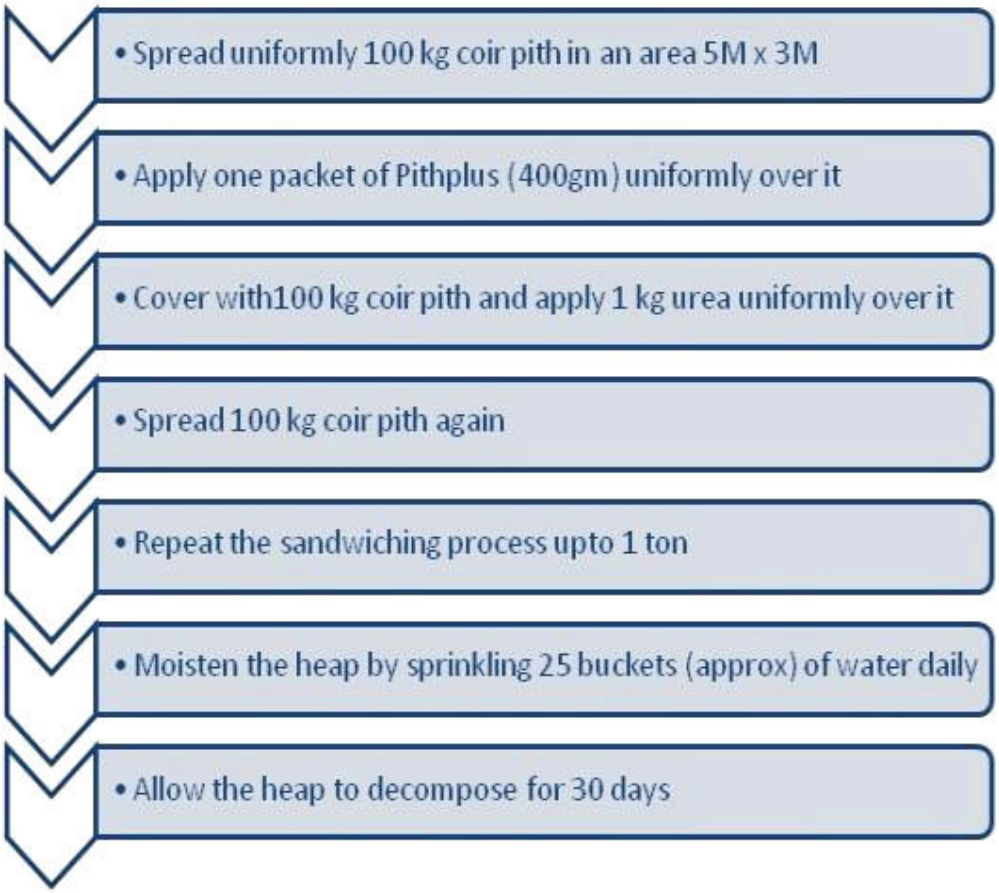
Coir pith has gained importance owing to its properties for use as a growth medium in Horticulture. Because of wider carbon and nitrogen ratio and lower biodegradability due to high lignin content, coir pith is still not considered as a good carbon source for use in agriculture. Coir pith is composted to reduce the wider C:N ratio, reduce the lignin and cellulose content and also to increase the manorial value of pith. Composting of coir pith reduces its bulkiness and converts plant nutrients to the available form.

Benefits of composted coir pith

- The addition of composted coir dust improves soil texture, structure and tilth, sandy soil become more compact and clayey soil become more arable.
- It improves the soil aggregation
- It improves the water holding capacity (more than 5 times its dry weight) contributing towards increased soil moisture.
- The bulk density of both the sub surface (15-30 cm) soil is reduced to considerable extent with the application composted coir pith.
- Composted coir dust contains all plant nutrient elements and it can provide a supplemental effect along with inorganic fertilizers.
- There is improvement in cation exchange capacity of soils, where composted coir pith is applied.
- Coir pith compost application increased the soil native microflora because of addition of humic materials.
- Ammonification, nitrification and nitrogen fixation are increased due to improved microbiological activity.

Production Process

One tone of coir pith, 5 kg of urea and 5 bottles of, Pleurotus spawn is required to prepare one ton of coir pith compost. First 100 kg of coir pith waste should be spread over a shady place. Then one bottle of Pleurotus
spawn should be applied over this layer uniformly. Now 100 kg of coir pith waste should be applied over this first layer and one kg of urea spread over the second layer of coir pith. This procedure of alternate application of Pleurotus and urea should be done for the whole one tonne of coir pith waste. Sufficient moisture should be ensured for speedy decomposition in this composting process. It takes nearly one month for complete decomposition of coir pith indicated when its colour changes to black. The process flow chart is given hereunder:



Specifications of Coir Pith Compost:

The specifications of Coir Pith Compost are as follows:

Moisture	30- 40%
pH	6.6-6.9
Electrical Conductivity (EC)	< 0.25 Millimhos/cm
Salinity	0-1 ppt
Cation Exchange Capacity (CEC)	40-60 meq/100 gm
Porosity	65-70%

e) Coir Handicrafts

Coir fiber is converted into gorgeous toys by tying and folding the fibers together, the artisan in the cluster make animal figures, birds and utility products like Wall hangings, Pen stands etc, nearly a decade ago.

Production Process

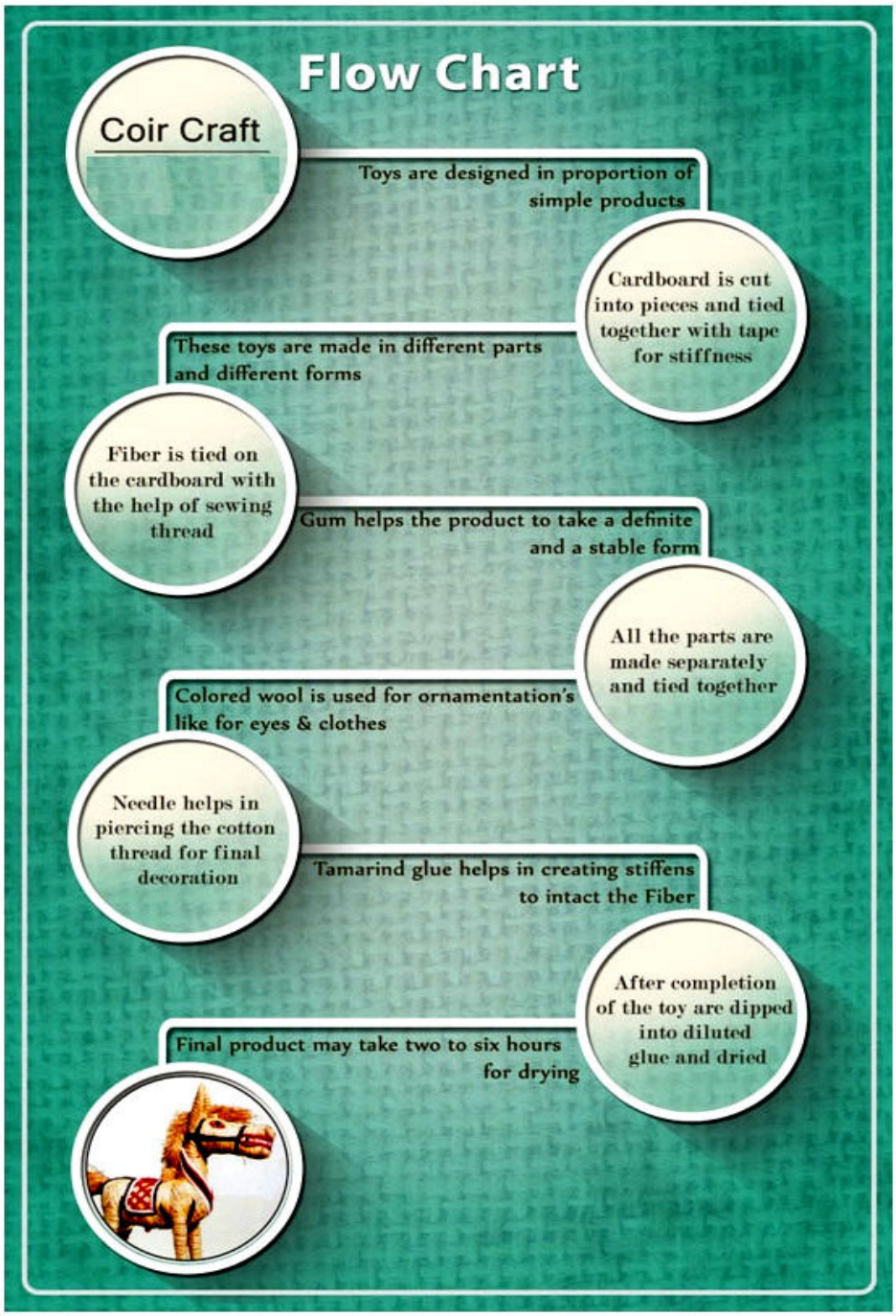
For making a toy, firstly, the design is to be finalized and made on the paper. According to the design they work on the proportion of the toys. For simple and small products, the coir is simply tied with the thread to make desired products. Glue is diluted with water and then used for pasting the fiber on the main body. The card board is cut into required shapes then fiber is stuck over the board which is used to provide proper shape and stiffness.

These toys are worked out in different parts and made in different forms. An artisan makes these parts in the particular day after which they are attached once all the parts are ready. Different parts are made by different people and then all the parts are assembled together with the help of thread, needle and glue. After the completion of the product it is to be dipped in diluted glue for durability and stiffness.

Cotton thread is used to wrap the forms or products made of coir fiber. This helps the product to take a definite and a stable form. Colored wool is used for surface ornamentation of coir crafts like for eyes, clothes etc. Use of color wool also enhances the look of the toy. For value addition, wooden beads and metal bells are also used. After the completion of the toy or product, it is dipped into diluted glue. This is done, so that the thread stiffens up and does not open up. Glue solution provides better durability and stability to the product or toy. The final

product may take two hours to six hours for completing depending upon the size of the product. Once the products are dried, they are packed in a newspaper, tied with the help of thread, and either sold to the middle men or direct marketing in front of a temple, tourist spots, shops etc. These products are attractive due to its decoration and various other attractive elements involved in the fiber.

The main steps in Coir toys making are illustrated in the flow chart below:



The following images project a visual narrative of how a master craftsman transforms coir fibre to an attractive toy.

Coir Jewellery

Coir jewellery is one of the exotic new products. Artisans in the cluster are involved in making many beautiful jewellery articles like bracelet, necklace, bangles, ear rings, finger rings and other exclusive products. The price varies from Rs.50/- to 5000/-.

Production Process

Firstly the coir fibres are taken out of the husk. For making of the coir jewellery the coir is taken from the immature green coconut and soaked in water for months together. Later the coir fibres are naturally dyed with pleasant colors. Small articles like sequences, pearls, crystals, stones and studs are used in embellishments for the jewellery. Initially the longer coir fibre is picked and sewed onto a thin stick in order to make a ring with the help of needle. The rings are made in bulk which is then comprehended in making of a finger ring by binding all the linked rings together and sewing it in an appropriate manner like how plaiting is made. Sometimes the coir is winded with regard to the diameter required and then single coir is taken and sewed around the winded coir to fasten the rings in crochet technique. The protruding fibres are cut with the help of nail cutter. The jewelries are made with subject to the form and design thought off. The coir fibres are bind together, sewed and twisted to the form needed.

- The coir is extracted from the immature coconut.
- The coir is soaked in water to attain its flexibility.
- Coir is dyed with natural colors.
- Coir fibres are taken and winded with regard to the required shape, size, and then single coir is sewed around the winded coir to fasten the rings in crochet technique.
- Embellishments like pearl, sequences, beads, crystals are added when required.

f) Coir Frame Mats

Coconut coir mats are purely handmade products, which are 100% organic, ethnic, biodegradable and hygienic that is strong, resistant and moisture in nature. They are available in spectrum of golden shades naturally like golden brown to reddish

brown that is suitable for rustic environment. These mats are available in various shapes like rectangular, star shaped and etc. The coir mats are also available with the wording on them like 'welcome'. These mats are made of standard size by being 2ft breadth and 1½ ft length. The cost of these coconut coir mats range from Rs.100/- to Rs.500/-

Production Process

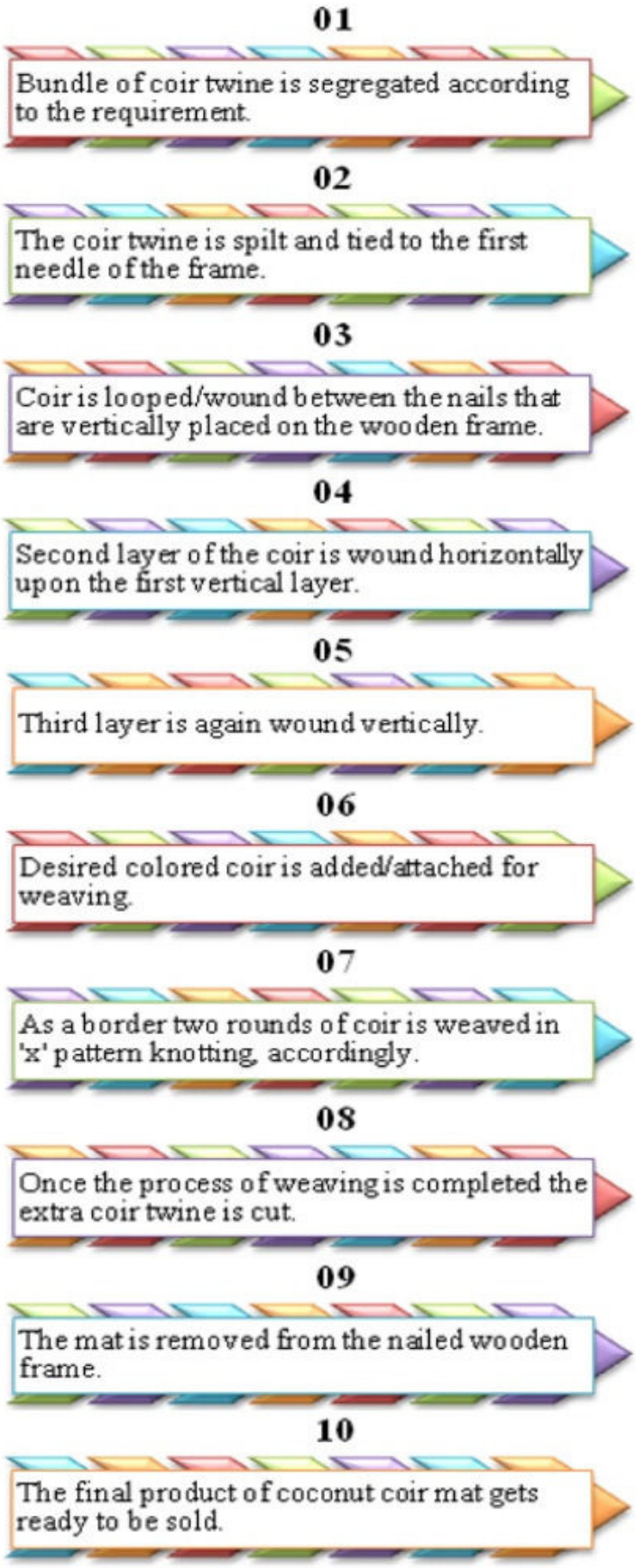
The coir mat is made of coir twine. The artisans used the natural brown coir according to the design concept, some coir twine are colored and segregated. Rectangular wooden frame with the nails attached to it is used for this process, and the coir mat making procedure gets begin.

At the one end of the coir twine, some length of the twine is divided into two strands and is knotted around the first nail of the wooden frame. And the coir twine is wound vertically of the frame around the nails that are at the opposite sides of the wooden frame.

Once the first layer is wound around the nails as the base, the same coir twine is continued to be woven for the second layer of the mat by winding it around the nails horizontally to the frame, by attaching the fresh coir twine to the one which is being wound and the process of winding gets continued to the second layer.

Once the whole of the second layer of winding gets completed the same coir twine is continued to be wound for the third layer, which is wound vertically to the frame and in the end it is knotted to the nail that is placed in a corner of the frame. Then the desired colored coir twine is weaved by inserting it in the spaces in-between the layers of the coir twine that is wound. This colored coir twine is weaved according to the 'X' pattern on these three layers of coir twine by using the knotting technique. Once the weaving is completed, the extra coir twine is cut and the mat is removed from the wooden frame. As a final practice, whole of the mat is cross-checked by the artisan and kept for the sales.

The main steps in Coir frame mat making are illustrated in the flow chart below:


01
Bundle of coir twine is segregated according to the requirement.
02
The coir twine is spilt and tied to the first needle of the frame.
03
Coir is looped/wound between the nails that are vertically placed on the wooden frame.
04
Second layer of the coir is wound horizontally upon the first vertical layer.
05
Third layer is again wound vertically.
06
Desired colored coir is added/attached for weaving.
07
As a border two rounds of coir is weaved in 'x' pattern knotting, accordingly.
08
Once the process of weaving is completed the extra coir twine is cut.
09
The mat is removed from the nailed wooden frame.
10
The final product of coconut coir mat gets ready to be sold.

10.3. Installed capacity

a) Coir Fibre Extraction

The installed capacity of the proposed Coir Fibre production unit is 1.20 Ton per shift. It has been proposed one shift operations and the installed capacity of the unit is worked out to 360 tons per annum, with 300 working days per annum.

Installed Capacity per shift	1.20 Ton of fibre
Number of shifts per day	1
Number of days per annum	300 days
Installed Capacity per annum	360 Tons
Raw material (Coconut Husk) requirement	12000 no. of husks per ton of Fibre output
Cost of Coconut Husk	Rs. 1.20 per husk

The Capacity utilization of the unit is proposed to be 75% in the first year of operation, 80% in the second year of operation and 90% in the subsequent year of operations.

b) Coir Two Ply Yarn Spinning

The installed capacity of the proposed Coir yarn spinning unit is 80 kgs per shift. It has been proposed to purchase 6 Nos. of yarn spinning machine. On single shift operation for 300 working days per annum, the installed capacity is worked out to 144 tons per annum

Capacity per machine per shift	80 kgs
Number of machines	6
Number of shifts per day	1
Number of days per annum	300 days
Installed Capacity per annum	144 tons

The capacity utilization has been proposed at 75%, 80% and 90% in the first, second and subsequent years respectively.

c) Geo-Textiles

Fully Automatic powerlooms proposed are suitable for manufacture of Geo-textiles. It has been proposed to procure 1 no. of fully automatic power loom. The

production capacity of the geo-textiles is 400 Sq.mt per shift. The production details for Geo-textiles facility proposed are given hereunder:

Capacity per loom per shift	400 Sq.m
Number of looms	1
Number of shifts per day	1
Number of working days per annum	300
Installed Capacity per annum	120000 Sq.m

The capacity utilization has been proposed at 75%, 80% and 90% in the first, second and subsequent years respectively.

d) Coir pith compost

The production capacity of the coir pith compost is given hereunder:

No. of Compost beds	10
Coir Pith requirement per bed	4 tons
Number of bed cycles per annum	8
Coir Pith processed per annum	320 tons

10.4. Plant and Machinery

a) Coir Fibre Extraction

The list of machineries proposed for the Coir Fibre Extraction activities are given below:

S.No	Name of the Machineries & Specifications
1.	Disintegrator 3.5'- 60 HP, 1440 RPM, 3 Phase
2.	Decorticator 7'- 60 HP, 1440 RPM, 3 Phase
3.	Bailing press – 3 HP, 1440 RPM, 3 Phase
4.	Screener (Fibre) – 2 HP, 960 RPM, 3 Phase
5.	Screener (Pith) – 2 HP, 960 RPM, 3 Phase
6.	Conveyor 285' – 1.5 HP, 960 RPM, 3 Phase

The estimated cost of Coir Fibre Extraction machineries and accessories is **Rs.45.00 Lakhs.**

b) Coir Two Ply Yarn Spinning

The list of machineries proposed for the Coir Yarn spinning facility is given below:

S.No	Name of the Machineries & Specifications
1.	Turbo Willowing Machine – 3 HP
2.	Double Head Double Combing 2 Ply Coir Yarn Spinning Machine – 1.5 HP, 1440 RPM Motor
3.	Auto Feed For Double Head Spinning Machine With 0.5 HP Motor 1440 RPM and Gear Box coupled with 0.5 HP Motor
4.	Auto Rewinding Machine

Totally 6 Nos. of Coir spinning machines is proposed for making of coir two ply yarn. The total cost of spinning section is estimated at **Rs.27.00 lakhs.**

c) Geo-Textiles

The Fully automatic Power loom proposed for the CFC can be utilized for the manufacture of Coir Geo-textiles. The list of machineries proposed for the Geo-textiles production is given below:

S.No	Description	Specifications
1	Coir Geo Textiles Width	2 meter
2	Speed of loom	Min. 60 shots per minute
3	Production capacity	Min. 60 to 65 of fabrics with 130 weft/m per shift
4	Tappets/Cams and Gears	Suitable to weave 2 shaft plain geo textiles
5	Heddle frames	2 Nos
6	Shuttles	6 Nos
7	Creel Stand	To hold 300 spools
8	Weavers Platform	Min 90 mm width running across the width of the loom

The cost of Automatic Loom machinery and accessories is estimated at **Rs.26.00 Lakhs.**

10.5. Project Cost

The project components and the cost thereof are mentioned below:

Cost of Project	Project Cost	SPV Share	GoTN Grant
Land	Leased	-	-
Building & Civil works (as per estimate)	46.40	4.64	41.76
Plant and Machinery (including Transportation, Erection & Comm.)	102.00	10.20	91.80
Electricals & accessories (including Genset, Borewell)	3.60	0.36	3.24
Contingencies (2.00%)	3.04	3.04	0.00
Deposits (as per statement 1.1)	4.00	4.00	0.00
Prel. & Pre-operative Expenses	0.96	0.96	0.00
Working Capital Margin (as per statement-2)	24.00	2.40	21.60
Total	**184.00**	**25.60**	**158.40**

Note: SPV Contribution proposed to be mobilized from the Grant component of Odisha Livelihood Mission (OLM) for the 7 Producer Groups, which are part of the cluster SPV. [To be facilitated by ORMAS (Odisha Rural Development and Marketing Society)]

10.6. Power

The connected load requirement estimated for the project is 180 HP (Unit I – 140 HP, II & III – 40 HP). The power connection could be availed through Single window scheme of District Industries Center.

10.7. Manpower

The manpower requirement estimated for the project is given hereunder:

Description	Nos.
Manager	1
Supervisors	2
Male Workers	5
Female workers (Unskilled)	12
Admin and Accounts	2
Security	2
Total	**24**

The required manpower would be sourced from within the cluster villages.

10.8. Operation and Maintenance

The SPV is responsible for the operation and maintenance of the project assets and the SPV has to manage the entire operation on its own. The IA will periodically monitor the expenditure incurred towards operation and maintenance. The operation and maintenance cost of the project is proposed to be managed with the income from commercial operations of the project.

10.9. Statutory Approvals

Statutory compliances include local body clearance, Fire, Health, Inspector of factories, GST Registration etc. The same may be applied for Single window clearance through District Industries Center.

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 motivational programme	1.00	1.00	-
1.1.2	Awareness Programme	1.00	1.00	-
1.1.3	Entrepreneurship Development Programme	2.00	2.00	-
1.1.4	Skill Upgradation Programme	3.00	3.00	-
1.1.5	Exposure Tour	2.00	2.00	-
	Total Capacity Building cost	**9.00**	**9.00**	-
1.2	**Market Promotion**			
1.2.1	Market Study Tour	1.00	1.00	-
1.2.2	Participation in Trade fairs	2.00	2.00	
1.2.3	Design Development Programme	2.00	2.00	-
1.2.4	Tie up with Business Development Service (BDS) providers	1.00	1.00	-
	Total Market Promotion cost	**6.00**	**6.00**	-
	Total Soft Interventions Cost	**15.00**	**15.00**	**-**

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 (Unit I, II & III)**	**46.40**	**41.76**	**4.64**
2.2	**Machinery & other components of Hard Interventions**			
2.2.1	Coir fibre Extraction	45.00	40.50	4.50
2.2.2	Fully Automatic Coir Yarn spinning	27.00	24.30	2.70
2.2.3	Geo Textiles	26.00	23.40	2.60
2.2.4	Pith Manure	2.00	1.80	0.20
2.2.5	Coir Handicrafts & frame Mat	2.00	1.80	0.20
2.2.6	Electricals	3.60	3.24	0.36
	Total - Machinery cost	**105.60**	**95.04**	**10.56**
2.2.7	Working Capital	24.00	21.60	2.40
	Total - Machinery & other components of Hard Interventions	**129.60**	**116.64**	**12.96**
	Total Hard Interventions Cost (2.1 + 2.2)	**176.00**	**158.40**	**17.60**
	TOTAL INTERVENTIONS COST (SOFT & HARD)	**191.00**	**173.40**	**17.60**
3	Cost of Technical Agency (8% of HI Grant)	**12.67**	**12.67**	**-**
4	Cost of Implementing Agency (8% of HI Grant)	**12.67**	**12.67**	**-**
	TOTAL PROJECT COST	**216.34**	**198.74**	**17.60**

12 Plan for Convergence of Initiatives

The initiatives for convergence of schemes and leveraging of resources from various sources 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
CITUS / Capital subsidy scheme	2 (Coir Fibre Extraction units)	2 members x Rs.50.00 lakhs = Rs.100.00 lakhs	Rs.25.00 Lakhs	Rs.70.00 Lakhs	Rs.5.00 Lakhs
PMEGP	5 (Coir yarn spinning 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.225.00 lakhs**	**68.75**	**145.00**	**11.25**

The additional investment estimated in the cluster is Rs.225.00 Lakhs with the scheme funding of Rs.68.75 lakhs, bank credit of Rs.145.00 lakhs and the promoter's contribution of Rs.11.25 lakhs.

13 Enhanced Project Cost & Means of Finance

The Project cost and Means of Finance of CORE SFURTI project is illustrated in **Chapter 11**. 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	**216.34**	**198.74**	**17.60**
2	Convergence initiatives (Establishment of individual units under various schemes)	**225.00**	**68.75**	**156.25**
	Total	**441.34**	**267.49**	**173.85**

The enhanced project cost including the Core SFURTI and other convergence initiatives works out to Rs.441.34 lakhs, whereas the corresponding Grant component is Rs.267.49 lakhs and that of Contribution and bank loan is Rs.173.85 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
1.1.2	Awareness Programme	I	Q2
1.1.3	Entrepreneurship Development Programme	I	Q2
1.1.4	Skill Upgradation Programme	I	Q3,Q4
1.1.5	Exposure Tour	I	Q2
1.2	**Market Promotion**		
1.2.1	Market Study Tours	II	Q1/Q2
1.2.2	Participation in Trade fairs	II	Q2/Q3
1.2.3	Design Development Programee	II	Q3/Q4
1.2.4	Tie up with BDS providers	II	Q1/Q2
2	**HARD INTERVENTIONS**		
2.2	**Building for CFC**	I	Q3,Q4
2.3	**Machinery for Common Facility Proposed**		
2.3.1	Coir fibre Extraction	II	Q1
2.3.2	Automatic Yarn Spinning (6 Machines)	II	Q1
2.2.3	Geo Textiles	II	Q2
2.2.4	Coir Pith Compost	II	Q2
2.2.5	Coir Handicrafts & Frame Mats	II	Q2
2.2.6	Electricals & accessories	II	Q1

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:

Assumptions For Cost Of Production And Profitability	
a. Coir Fibre Extraction	
Installed Capacity per shift	1.20 Tons of fibre
Number of shifts per day	1
Number of days per annum	300
Installed Capacity per annum	360 Tons
Raw material (Coconut Husk) requirement	12000 no. of husks per ton of Fibre output
Cost of Coconut Husk	Rs. 1.20 per husk
Selling price of Coir Fibre	Rs. 18,500.00 per Ton
b. Coir Yarn Spinning	
Capacity per machine per shift	80.00 Kgs.
Number of machines	6
Number of shifts per day	1
Number of days per annum	300.00
Installed Capacity per annum	144.00 Tons
Selling price of Coir Yarn	Rs. 38,000.00 per Ton
c. Coir Geo-textiles	
Installed Capacity per shift	400 Sq.M.
Number of machines	1
Number of shifts per day	1
Number of days per annum	300
Installed Capacity per annum	120000 Sq.M.
Selling Price	Rs. 50.00 per Sq.M.
Raw material (Coir yarn) requirement	40.00 Kgs. per Sq.M.
Raw material (Coir yarn) requirement	48.00 Tons for the installed capacity per annum
d. Coir Pith Compost	
No. of Compost beds	10
Coir Pith requirement per bed	4 Tons
Number of bed cycles per annum	8

Assumptions For Cost Of Production And Profitability	
Coir Pith processed per annum	320 Tons
Yield (Coir Pith to Compost)	70%
Cost of Pith plus and Urea	Rs. 750.00 per ton of output
Selling price of Coir pith compost	Rs. 16,000.00 per ton of output
e. Coir Handicrafts	
Annual Sales realization - Sale of Handicrafts	Rs. 20.00 lakhs in the first year of operation and 20% increase in subsequent years
Cost of consumables & labour	30% of Sales Realization
f. Coir Mats	
Annual Sales realization - Sale of Mats	Rs. 40.00 lakhs in the first year of operation and 20% increase in subsequent years
Cost of consumables & labour	30% of Sales Realization
Capacity Utilization	
- First year	*75%*
- Second year	*80%*
-Third year onwards	*90%*
Lease Rental for CFC land - Rs.6,000 per month in the first year and 10% increase every five years as per lease deed	
Power Cost - Rs.6.00 per KWH	
Repairs & Maintenance - 2.00%0f plant and machinery cost in the first year of operation and 10% increase in every subsequent years	
Administrative Expenses - 1.00% Of sales realization	
Selling Expenses 2.00% Of sales realization	

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	**153.54**	**171.78**	**198.65**	**215.93**	**236.66**
Profit Bef. Tax	**38.17**	**47.15**	**60.15**	**69.99**	**82.05**
Provision for taxation	5.68	11.31	17.76	22.65	27.98
Profit after Tax	**32.49**	**35.84**	**42.39**	**47.34**	**54.07**
Break Even Point	40%	36%	32%	29%	27%

Net Present Value (NPV) : Rs.64.26 lakhs
Internal Rate of Return (IRR) : 18.99 %

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

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 **Orissa Cooperative Coir Corporation Ltd**, having its registered office at No.361, Sahid Nagar, Bhubaneswar– 751007. 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 Trust in the name of **"M/s SPV FOR BHOGRAI COIR CLUSTER"** as per the Trust Deed dated 22.12.2017. The registration has been carried out with 7 trustees, 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 7 trustees and the list is given below:

S.No.	Name	Age	Designation
1.	Mr.Rabin Sen	46 years	Trustee
2.	Ms.Nilima Patra	40 years	Trustee
3.	Ms.Sibani Nayak	37 years	Trustee
4.	Ms.Lopamudra Pradhan	39 years	Trustee
5.	Ms.Mamata Panda	40 years	Trustee
6.	Ms.Minati Giri	42 years	Trustee
7.	Ms.Sumati Patra	42 years	Trustee

17 Expected Impact

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

S.No.	Parameter	Pre-intervention	Post-intervention
1	Cluster Turnover (Rs. Lakhs)	24	150.00
2	Employment (Nos.)	559	650
3	Wages per day (Rs.)	100.00	150.00
4	Profitability (%)	8-10%	18-20%

- Establishment of new units by converging various schemes of State and Central Governments (such as CITUS, 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

			Statement	1			
COST OF PROJECT AND MEANS OF FINANCE							
Cost Of Project		Rs.Lakhs		SPV Share	GoTN Grant		
Land		Leased		-	-		
Building & Civil works (as per estimate)		46.40		4.64	41.76		
Plant and Machinery (incl. Trans., Erec. & Comm.)		102.00		10.20	91.80		
Electricals & accessories (incl. Genset, Borewell)		3.60		0.36	3.24		
Contingencies	2.00%	3.04		3.04	0.00		
Deposits (as per statement 1.1)		4.00		4.00	0.00		
Prel. & Pre-operative Expenses		0.96		0.96	0.00		
Working Capital Margin (as per statement-2)		24.00		2.40	21.60		
Total		**184.00**		**25.60**	**158.40**		
Means of Finance							
SPV Share		25.60					
SFURTI Grant		158.40					
Total		**184.00**					

EB DEPOSITS (for 2 LT Connections)				Statement-1.1			
Deposits payable to TNEB for CFC I	**140**	**HP Power Connection**					
	Amount	**Total**					
Details	**Per HP**	(Rs.Lakhs)					
Development Charges	Rs.200	0.28					
Earnest Money Deposits	Rs.600	0.84					
Security Deposit	Rs.600	0.84					
		1.96					
Total		**1.96**	say	**Rs.1.96**	**Lakhs**		
Deposits payable to TNEB for CFC II & III	**40**	**HP Power Connection**					
	Amount	**Total**					
Details	**Per HP**	(Rs.Lakhs)					
Development Charges	Rs.200	0.08					
Earnest Money Deposits	Rs.600	0.24					
Security Deposit	Rs.600	0.24					
		0.70					
Total		**0.70**	say	**Rs.0.70**	**Lakhs**		
Total EB Deposits (Unit I, II & III)		Rs. 2.66	lakhs				
Other Deposits		Rs. 1.34	lakhs				
Total Deposits		**4.00**	say	**Rs.4.00**	**Lakhs**		
		Statement-1.2					
PRELIMINARY AND PREOPERATIVE EXPENSES							
Statutory fees (RoC, Land Regn. etc.)	0.36						
Trial run expenses	0.60						
	0.96						

ASSESSMENT OF WORKING CAPITAL						Statement-2	
Current Assets	Days	**1**	**2**	**3**	**4**	**5**	
Stock of Raw Materials (Husk, Pith consumable	30	5.81	5.00	5.68	5.85	6.06	
Work-in-process	8	2.70	2.93	3.28	3.46	3.68	
Finished products	18	6.06	6.59	7.37	7.79	8.27	
Receivables	15	7.68	8.59	9.93	10.80	11.83	
Cash and Bank balance		1.50	1.60	1.80	1.80	1.80	
Other current assets		0.45	0.48	0.54	0.54	0.54	
Total		**24.20**	**25.19**	**28.60**	**30.24**	**32.18**	
Current Liabilities							
Other Current Liabilities		0.20	0.21	0.22	0.23	0.24	
Total		**0.20**	**0.21**	**0.22**	**0.23**	**0.24**	
Working Capital Gap		**24.00**	**24.98**	**28.38**	**30.01**	**31.94**	
Margin		24.00	24.98	28.38	30.01	31.94	

					Statement	3	
COST OF PRODUCTION & PROFITABILITY							
				RS.LAKHS			
Years		**1**	**2**	**3**	**4**	**5**	
Installed Capacity per annum							
Coir Fibre Production	Tons	360	360	360	360	360	
Coir Yarn Spinning	Tons	144	144	144	144	144	
Coir Geo-textiles	Sq.M.	120000	120000	120000	120000	120000	
-Coir Geo-textiles in Tons	Tons	48	48	48	48	48	
Coir Pith Compost	Tons	224	224	224	224	224	
Capacity Utilisation	*%*	75%	80%	90%	90%	90%	
Production Quantity per annum							
Coir Fibre Production	*Tons*	270	288	324	324	324	
Coir Yarn Spinning	*Tons*	108	115	130	130	130	
Coir Geo-textiles	*Tons*	36.00	38.40	43.20	43.20	43.20	
Nett Fibre quantity available after yarn spun		126	134	151	151	151	
Coir Pith Compost	*Tons*	168	179	202	202	202	
User Charge / Sales Realisation (Rs. Lakhs)							
Coir Fibre sales (Nett off CFC Consumption)	Rs.18,500	23.31	24.86	27.97	27.97	27.97	
Coir Yarn (Two-ply)	Rs.38,000	17.10	18.24	20.52	20.52	20.52	
Coir Geo-textiles	Rs.50,000	18.00	19.20	21.60	21.60	21.60	
Coir Pith (Surplus of Compost)	Rs.5,000	8.25	8.80	9.90	9.90	9.90	
Coir Pith Compost	Rs.16,000	26.88	28.67	32.26	32.26	32.26	
Coir Mats (Frame mats, Corridor mats etc.)		40.00	48.00	57.60	69.12	82.94	
Coir Handicrafts		20.00	24.00	28.80	34.56	41.47	
Annual Sales Realisation		**153.54**	**171.78**	**198.65**	**215.93**	**236.66**	

Cost Of Production				Statement-3 contd…			
Raw material requirement							
Husk & Pith:							
- Coconut Husks (for Coir Fibre Extraction)	'000 Nos.	3240.00	3456.00	3888.00	3888.00	3888.00	
- Coir Pith (for Pith compost)	Tons	240.00	256.00	288.00	288.00	288.00	
Total Pith requirement	Tons	240.00	256.00	288.00	288.00	288.00	
Internal Pith generation (from Fibre Extr. In Tons)		*405.00*	*432.00*	*486.00*	*486.00*	*486.00*	
Surplus pith available		165.00	176.00	198.00	198.00	198.00	
Coir Yarn:							
Coir Yarn production in CFC		108.00	115.20	129.60	129.60	129.60	
- Yarn requirement for Geo-textiles		36.00	38.40	43.20	43.20	43.20	
- Yarn requirement for Mats	25%	27.00	28.80	32.40	32.40	32.40	
Total Yarn requirement for CFC		63.00	67.20	75.60	75.60	75.60	
Surplus yarn available for external sales		45.00	48.00	54.00	54.00	54.00	
Cost of raw material							
Coconut husk - Coir Fibre Extraction	Rs. 1,200.00	38.88	41.47	46.66	46.66	46.66	
Cost of Pith plus and Compost consumables	Rs.750	1.26	1.34	1.51	1.51	1.51	
Coir Mats consumables	30%	12.00	14.40	17.28	20.74	24.88	
Coir Handicrafts consumbles	30%	6.00	7.20	8.64	10.37	12.44	
Lease Rental for CFC Land	Rs.6,000	0.72	0.72	0.72	0.72	0.72	
Cost Of Power	Statement 6	13.12	14.00	15.75	15.75	15.75	
Salary & Wages	Statement 7	27.06	28.41	29.83	31.33	32.89	
Repairs & Maintenance	2.00%	2.04	2.24	2.47	2.72	2.99	
		101.08	**109.79**	**122.86**	**129.78**	**137.84**	
Administrative Expenses	1.00%	1.54	1.72	1.99	2.16	2.37	
Marketing Expenses	2.00%	3.07	3.44	3.97	4.32	4.73	
Prel. & Preop. Expenses (w/o)	10.00%	0.10	0.10	0.10	0.10	0.10	
Depreciation	Statement 8	9.58	9.58	9.58	9.58	9.58	
Total		**115.37**	**124.62**	**138.50**	**145.94**	**154.62**	
Profit Bef. Tax		**38.17**	**47.15**	**60.15**	**69.99**	**82.05**	
Provision for taxation		5.68	11.31	17.76	22.65	27.98	
Profit after Tax		**32.49**	**35.84**	**42.39**	**47.34**	**54.07**	

					Statement	4	
Assumptions For Cost Of Production And Profitability							
a. Coir Fibre Extraction							
Installed Capacity per shift	1.20	Tons of fibre					
Number of shifts per day	1						
Number of days per annum	300						
Installed Capacity per annum	360	Tons					
Raw material (Coconut Husk) requirement	12000	no. of husks per ton of Fibre output					
Cost of Coconut Husk	Rs. 1.20	per husk					
Selling price of Coir Fibre	Rs. 18,500.00	per Ton					
b. Coir Yarn Spinning							
Capacity per machine per shift	80.00	Kgs.					
Number of machines	6						
Number of shifts per day	1						
Number of days per annum	300.00						
Installed Capacity per annum	144.00	Tons					
Selling price of Coir Yarn	Rs. 38,000.00	per Ton					

						Statement	4 contd.
c. Coir Geo-textiles							
Installed Capacity per shift	400	Sq.M.					
Number of machines	1						
Number of shifts per day	1						
Number of days per annum	300						
Installed Capacity per annum	120000	Sq.M.					
Selling Price	Rs. 50.00	per Sq.M.					
Raw material (Coir yarn) requirement	40.00	Kgs. per Sq.M.					
Raw material (Coir yarn) requirement	48.00	Tons for the installed capacity per annum					
d. Coir Pith Compost							
No. of Compost beds	10						
Coir Pith requirement per bed	4	Tons					
Number of bed cycles per annum	8						
Coir Pith processed per annum	320	Tons					
Yield (Coir Pith to Compost)	70%						
Cost of Pithplus and Urea	Rs. 750.00	per ton of output					
Selling price of Coir pith compost	Rs. 16,000.00	per ton of output					
e. Coir Handicrafts							
Annual Sales realisation - Sale of Handicrafts	Rs. 20.00	lakhs in the first year of operation and 20% increase in subsequent years					
Cost of consumbles & labour	30%	of Sales Realization					
f. Coir Mats							
Annual Sales realisation - Sale of Mats	Rs. 40.00	lakhs in the first year of operation and 20% increase in subsequent years					
Cost of consumbles & labour	30%	of Sales Realization					

Capacity Utilisation							
- First year	*75%*						
- Second year	*80%*						
-Third year onwards	*90%*						
Lease Rental for CFC land	Rs.6,000	per month in the first year and 10% increase every five years as per lease deed					
Power Cost	Rs.6.00	per KWH					
Repairs & Maintenance	2.00%	0f plant and machinery cost in the first year of					
		operation and 10% increase in every subsequent years					
Administrative Expenses	1.00%	Of sales realisation					
Selling Expenses	2.00%	Of sales realisation					

					Statement	5	
CALCULATION OF INCOME TAX							
				RS.LAKHS			
Years		**1**	**2**	**3**	**4**	**5**	
Net Profit		38.17	47.15	60.15	69.99	82.05	
Add: Straight Line Dep.		9.58	9.58	9.58	9.58	9.58	
Less: Wdv Depreciation		31.53	24.42	19.00	14.86	11.70	
Total		16.22	32.32	50.74	64.71	79.93	
Income Bef. Incentives		16.22	32.32	50.74	64.71	79.93	
Less: Deductions	0%	0.00	0.00	0.00	0.00	0.00	
Taxable Income		16.22	32.32	50.74	64.71	79.93	
Income Tax	35%	5.68	11.31	17.76	22.65	27.98	
Loss C/F		0.00	0.00	0.00	0.00	0.00	
Profit After Tax		32.49	35.84	42.39	47.34	54.07	

					Statement	6	
ESTIMATION OF POWER COST							
				RS.LAKHS			
Connected Load - Unit I	140.00						
Connected Load - Unit II	40.00						
Connected Load	**180.00**	HP					
		ANNUAL POWER COST					
Years		1	2	3	4	5	
Working Days		300	300	300	300	300	
Capacity Utilisation		75%	80%	90%	90%	90%	
Number of hours per shift							
Power consumption per annum (KWH)		324000	345600	388800	388800	388800	
Annual Power Bill		**13.12**	**14.00**	**15.75**	**15.75**	**15.75**	
Assumptions:							
Power Factor	0.90						
Average Load Factor	0.75						
Average Power Cost/K W H	Rs.6.00						
No. of working hours per shift	8.00						
No. of shifts per day	1						

				Statement	7		
MANPOWER REQUIREMENT AND ESTIMATION OF COST							
			RS.LAKHS				
Description	**Nos.**	**Salary**	**Annual**				
		per month	**Salary**				
Manager	1	15000	180000				
Supervisors	2	12000	288000				
Male Workers	5	10000	600000				
Female workers (Unskilled)	12	7500	1080000				
Admin and Accounts	2	8000	192000				
Security	2	5000	120000				
Total	**24**		**2460000**				
	Add: Benefits	10%	246000				
	Grant Total		**2706000**				

					Statement	8	
ESTIMATION OF DEPRECIATION							
			RS.LAKHS				
Straight Line Method	VALUE	DEP. RATE	**1**	**2**	**3**	**4**	**5**
Building & Civil works	47.33	3.34%	1.58	1.58	1.58	1.58	1.58
Plant & Machinery	105.00	7.40%	7.77	7.77	7.77	7.77	7.77
Electricals	3.67	6.33%	0.23	0.23	0.23	0.23	0.23
Total	**156.00**		**9.58**	**9.58**	**9.58**	**9.58**	**9.58**
WDV Method							
Building & Civil works		10.00%	4.73	4.26	3.83	3.45	3.11
WDV	47.33		42.60	38.34	34.50	31.05	27.95
Plant & Machinery		25.00%	26.25	19.69	14.77	11.07	8.31
WDV	105.00		78.75	59.06	44.30	33.22	24.92
Electricals		15.00%	0.55	0.47	0.40	0.34	0.29
WDV	3.67		3.12	2.65	2.26	1.92	1.63
Total	**156.00**		**31.53**	**24.42**	**19.00**	**14.86**	**11.70**
Note: Contingency & Pre-operatives are apportioned with the cost of assets.							

PROJECTED CASH-FLOW STATEMENT					Statement	9	
				RS.LAKHS			
Years		**1**	**2**	**3**	**4**	**5**	
Source Of Funds							
Promoters Capital	25.60						
SFURTI Grant	158.40						
Profit Before Int.,Dep. & Tax		47.76	56.74	69.74	79.58	91.63	
Increase in W.C.Loan		0.00	0.00	0.00	0.00	0.00	
Total	**184.00**	**47.76**	**56.74**	**69.74**	**79.58**	**91.63**	
Uses							
Inc. in Capital Expenditure	155.04						
Deposits (as per statement 1.1)	4.00						
Increase in W.Capital		24.00	0.97	3.40	1.63	1.93	
Provision For Taxation		5.68	11.31	17.76	22.65	27.98	
Total	**159.04**	**29.68**	**12.29**	**21.16**	**24.28**	**29.91**	
Surplus	24.96	18.08	44.45	48.57	55.30	61.72	
Opening Balance	0.00	24.96	43.04	87.49	136.06	191.36	
Closing Balance	24.96	43.04	87.49	136.06	191.36	253.08	

PROJECTED BALANCE SHEET					Statement	10	
				RS.LAKHS			
Years	**PR. PERIOD**	**1**	**2**	**3**	**4**	**5**	
Liabilities							
Promoters Capital	25.60	25.60	25.60	25.60	25.60	25.60	
SFURTI Grant	158.40	158.40	158.40	158.40	158.40	158.40	
Reserves & Surplus		32.49	68.34	110.73	158.07	212.14	
W.C.Borrowings		0.00	0.00	0.00	0.00	0.00	
Current liabilities		0.20	0.21	0.22	0.23	0.24	
Total	**184.00**	**216.70**	**252.55**	**294.95**	**342.31**	**396.39**	
Assets							
Gross Block	155.04	155.04	155.04	155.04	155.04	155.04	
Less: Accu. Depreciation		9.58	19.17	28.75	38.33	47.92	
Net Block	155.04	145.46	135.87	126.29	116.71	107.12	
Deposits	4.00	4.00	4.00	4.00	4.00	4.00	
Current Assets		24.20	25.19	28.60	30.24	32.18	
Closing Balance	24.96	43.04	87.49	136.06	191.36	253.08	
Total	**184.00**	**216.70**	**252.55**	**294.95**	**342.31**	**396.39**	
	0.00	0.00	0.00	0.00	0.00	0.00	

					Statement	11	
ESTIMATION OF BREAK-EVEN POINT							
				RS.LAKHS			
Years	**1**	**2**	**3**	**4**	**5**		
Fixed Expenses							
Lease Rental for CFC Land	0.72	0.72	0.72	0.72	0.72		
Salary & Wages (50%)	13.53	14.21	14.92	15.66	16.45		
Preliminary expenses	0.10	0.10	0.10	0.10	0.10		
Repairs & Maintenance	2.04	2.24	2.47	2.72	2.99		
Depreciation	9.58	9.58	9.58	9.58	9.58		
Total(A)	**25.97**	**26.85**	**27.78**	**28.78**	**29.83**		
Variable Expenses							
Cost Of Raw Material and Consumables	58.14	64.42	74.09	79.27	85.49		
Cost Of Power	13.12	14.00	15.75	15.75	15.75		
Salary & Wages (50%)	13.53	14.21	14.92	15.66	16.45		
Administrative Expenses	1.54	1.72	1.99	2.16	2.37		
Selling Expenses	3.07	3.44	3.97	4.32	4.73		
Total(B)	**89.40**	**97.77**	**110.71**	**117.16**	**124.78**		
Sales Realisation	**153.54**	**171.78**	**198.65**	**215.93**	**236.66**		
Break Even Point	40%	36%	32%	29%	27%		

					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	155.04						
Preliminary & Preoperative Expenses	4.00						
Technical Know-How	0.00						
Working Capital Margin	24.00						
Total	183.04	0.00	0.00	0.00	0.00	0.00	
Cash Inflow							
Profit After Tax		32.49	35.84	42.39	47.34	54.07	
Depreciation		9.58	9.58	9.58	9.58	9.58	
W.C.Margin						31.94	
Residual Value Of F.Assets						38.76	
Total	0.00	42.08	45.42	51.98	56.93	134.35	
Net Cash Flow	**-183.04**	**42.08**	**45.42**	**51.98**	**56.93**	**134.35**	
Net Present Value	**Rs.64.26**	**lakhs**					
at 8% discount rate							
Internal Rate of Return	18.99%						