

DETAILED PROJECT REPORT

Cluster Location: Andaman & Nicobar Islands



Submitted to
Coir Board, Kochi

Prepared by



ITCOT Consultancy and Services Ltd.

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

50 - A, GREAMS ROAD, CHENNAI - 600 006. Tel : (044) 42936800-02

FAX : 044 - 28293512 Web site: www.itcot.com Email : itcot@vsnl.com

CONTENTS

Chapter	Title	Page
	Executive Summary	i-iii
	Preamble	1
1.	Cluster Profile	3
	1.1 Background	3
	1.2 Regional setting of the Cluster	3
	1.3 Location	4
	1.4 Evolution of the Cluster	4
	1.5 Demography and Growth Trends	5
	1.6 Socio-economic aspects	5
	1.7 Human Development Aspects	7
	1.8 Key Economic Activities in the region	7
	1.9 Infrastructure – social, physical, financial and production related	10
2.	Cluster Value Chain Mapping	12
	2.1 Product Profile	12
	2.2 Production Process	12
	2.3 Value Chain Analysis	14
	2.4 Cluster Map	15
	2.5 Principal Stakeholders	16
3.	Market Assessment and Demand Analysis	18
4.	SWOT and Need Gap Analysis	23
5.	Profile of the Implementing Agency	26
6.	Project Concept and Strategy Framework	28
	6.1 Project Rationale	28
	6.2 Project Objective	28
	6.3 Focus Products/Services	29
	6.4 Conceptual Framework / Project Strategy	29
7.	Project Interventions	30
	7.1 Soft Interventions	30
	7.2 Hard Interventions	31
8.	Hard Interventions	32
	8.1. Proposed Interventions	32
	8.2. Land & Building	32
	8.3. Product & Process	33

Chapter	Title	Page
	8.4. Proposed Capacity	50
	8.5. Proposed Machinery & Equipments	51
	8.6. Project cost	52
	8.7. Power	52
	8.8. Water	52
	8.9. Manpower	53
	8.10. Operation and Maintenance Model	53
	8.11. Statutory Approvals	53
9.	Soft Interventions	54
	8.1 Capacity Building Programme	54
	8.2 Market Promotion Programme	56
10.	Project Cost and Means of Finance	57
11.	Plan for convergence of Initiatives	59
12.	Enhanced Project Cost & Means of finance	60
13.	Project Timeline	61
14.	Proposed Implementation Framework	62
	14.1 Role of Implementing Agency	62
	14.2 Details of Strategic Partners	62
	14.3 Structure of the SPV	62
	14.4 Composition of the SPV	62
15.	Expected Impact	64
	FINANCIAL STATEMENTS	
1.	Cost of Project and Means of Finance	65
	1.1 Estimation of Deposits / Advances	66
	1.2 Preliminary and Preoperative Expenses	66
2.	Assessment of Working Capital	67
3.	Cost of Production & Profitability	68
4.	Assumptions for Cost of Production and Profitability	70
5.	Calculation of Income Tax	73
6.	Estimation of Power Cost	74
7.	Manpower Requirement and Estimation of Cost	75
8.	Estimation of Depreciation	76
9.	Projected Cash-Flow Statement	77
10.	Projected Balance Sheet	78
11.	Estimation of Break-Even Point	79
12.	Estimation of NPV & IRR	80

EXECUTIVE SUMMARY

1.	Name of the cluster	ANDAMAN COIR CLUSTER
2.	Type of cluster	Regular Cluster
3.	Location of the cluster	Port Blair & Ferrargunj Tehsil
4.	Product range	Coir Fibre, Yarn, Handicrafts
5.	Cluster Category	INDUCED CLUSTER (The inducing factor being ample availability of raw material (Husk) and availability of Skilled manpower in Coir Handicrafts)
6.	Size of cluster	The Cluster is primitive one, with one Coir Fibre Extraction unit, one Spinning unit and one Curled coir unit. Hence the size of the cluster extends to 3 villages in Port blair and 2 villages in Ferra kunj tehsils. The total number of beneficiaries estimated to be around 220 members which includes the trained handicrafts artisans in the cluster.
7.	Key concern areas	<ul style="list-style-type: none"> ➤ The key concern area is the inadequate system for collection of husks from the farms. ➤ Even though local market is available for Coir yarn and handicrafts, sufficient production could not be undertaken for want of Coir Fibre, the basic raw material. ➤ Lack of awareness of the value chain of the Coir and hence no entrepreneurial activity in Coir has been initiated so far, in large scale. ➤ The availability of skilled artisans in Coir handicrafts sector is not utilized. ➤ Utility Coir products such as Coir mats, Coir pith compost etc., which could be manufactured & marketed locally are not undertaken so far. ➤ No direct linkage with domestic or export buyers. Total distribution is through local dealers only.
8.	Proposed Strategic Interventions	Soft Interventions: <ul style="list-style-type: none"> • Capacity Building initiatives • Market Promotion initiatives Hard Interventions (Common facility creation):

		<ul style="list-style-type: none"> ➤ Coir fibre extraction facility ➤ Coir Two ply yarn spinning facility ➤ Curled Coir Manufacturing facility ➤ Coir Handicrafts & Frame mats manufacturing facility ➤ Coir Pith Compost (Organic Manure) <p>Thematic Interventions: Participation in activities such as national and international level brand promotion campaigns, New Media marketing, E-commerce initiatives etc., as detailed in the SFURTI implementation guidelines</p>																								
9.	Budget for Soft interventions	Rs.15.00 lakhs																								
10.	Budget for Hard interventions	Rs.224.40 lakhs																								
11.	Total Project Cost including Agencies cost	Rs.271.71 lakhs																								
12.	Means of Finance	Grant under SFURTI scheme : Rs. 249.27 lakhs IA/SPV share : Rs. 22.44 lakhs																								
13.	Post Intervention Scenario (Expected Impact)	<p>The pre-intervention & post-intervention scenario of the cluster is given below:</p> <table border="1"> <thead> <tr> <th>S.No.</th> <th>Parameter</th> <th>Pre-intervention</th> <th>Post-intervention</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Cluster Turnover (Rs. Lakhs)</td> <td>85.00</td> <td>275.00</td> </tr> <tr> <td>2</td> <td>Investment (Rs. Lakhs)</td> <td>80.00</td> <td>300.00</td> </tr> <tr> <td>3</td> <td>Employment (Nos.)</td> <td>20</td> <td>250 (including Handicraft artisans)</td> </tr> <tr> <td>4</td> <td>Wages per day (Rs.)</td> <td>250</td> <td>350 - 400</td> </tr> <tr> <td>5</td> <td>Profitability (%)</td> <td>8-10%</td> <td>15-18%</td> </tr> </tbody> </table>	S.No.	Parameter	Pre-intervention	Post-intervention	1	Cluster Turnover (Rs. Lakhs)	85.00	275.00	2	Investment (Rs. Lakhs)	80.00	300.00	3	Employment (Nos.)	20	250 (including Handicraft artisans)	4	Wages per day (Rs.)	250	350 - 400	5	Profitability (%)	8-10%	15-18%
S.No.	Parameter	Pre-intervention	Post-intervention																							
1	Cluster Turnover (Rs. Lakhs)	85.00	275.00																							
2	Investment (Rs. Lakhs)	80.00	300.00																							
3	Employment (Nos.)	20	250 (including Handicraft artisans)																							
4	Wages per day (Rs.)	250	350 - 400																							
5	Profitability (%)	8-10%	15-18%																							

		<ul style="list-style-type: none"> ➤ Strong linkages among the Cluster members and actors in all levels of the value chain and an established Collaborative setup in place to undertake development initiatives & address common issues. ➤ Emergence of specialized support service providers and their active involvement in the development process ➤ Increased production of Coir Fibre and yarn, resulting in enhanced income for coir products manufacturers by minimum 15%, on utilizing the CFC for value addition and marketing of finished products. ➤ Establishment of new units by converging various schemes of UT and Central Governments resulting in additional investments and increased turnover in Coir sector in the region. ➤ 100% Coverage of Coir workers in the cluster under social security schemes.
14.	<p>Cluster Management - Post interventions</p>	<p>The cluster is proposed to be developed under SFURTI (Scheme of Fund for Regeneration of Traditional Industries). The Coir Board is the Nodal agency (NA) and ITCOT Consultancy and Services Limited is the Technical Agency (TA) appointed by Coir Board. The Implementing agency proposed is Ms.YUVASAKTHI, the Non Government Organization, registered under Societies Act 1860, having its office at Port Blair, A&N islands.</p> <p>A Special Purpose Vehicle (SPV) is formed and being registered as Cooperative Society in the name of "ANDAMAN COIR CLUSTER COOPERATIVE SOCIETY LIMITED" in Andaman and Nicobar islands. The SPV is being registered with 9 executive members and 400 members of the Cooperative society. The SPV will be strengthened to manage the Cluster activities in sustainable nature after the project implementation is over.</p>

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 shell 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, Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra, Goa, Orissa, Assam, 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.

Coir is the only natural fibre that does not get cultivated solely to extract the coir whereas jute and sisal are grown only to produce the fibres and in turn, the spun and woven products. Fibres like jute, sisal, cotton etc are derived from short cropping plants whereas coir originates from the near perennial coconut palm.

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**, Lakshadweep islands etc.

Andaman and Nicobar Islands have immense collection of natural resources. The agriculture supports a major portion of the economy of Andaman and Nicobar islands. Coconut plantation is 42.83% of the land out of 50,000 hectares of land available in the island for Agriculture purpose. Major

production and cultivation of Coconuts in the island is concentrated in South Andaman, Campbell Bay, Car Nicobar and Katchal Island. As per DCMSME, it is estimated that 56000 MT of coconut husk are available annually for industrial use in these Islands but only a negligible quantity i.e. 120 MT of coconut husk is being utilized presently for making coir products and the rest is wasted or used as domestic fuel.

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 conducting the Diagnostic Study and the preparation of Detailed Project Report for the Coir Cluster located at Andaman and Nicobar Islands to ITCOT Consultancy and Services Ltd. Accordingly, ITCOT has prepared the Detailed Project Report for submitting the same for seeking the 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 Andaman and Nicobar Islands, Informal interviews with industry participants and experienced entrepreneurs, collection of secondary information etc.

The Chapter scheme of the detailed project report is as follows:

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

1 Cluster Profile

1.1 Background

The Andaman and Nicobar Islands are a group of islands at the juncture of the Bay of Bengal and Andaman Sea, and is a Union Territory of India. It consists of about 572 islands, of which only 38 islands are having inhabitants. The Islands consist of two groups, the Andaman and Nicobar and are mostly covered with dense rain forest. These two groups are separated by about 300 km. The area of the Islands is about 8,249 square kilometers, of which 6,408 sq. km of area is occupied by the Andaman group and 1,841 sq km by the Nicobar groups of Islands. Of the total land area 92 percent of the land is covered with rain forests and of the 572 islands, only 37 islands are inhabited.

1.2 Regional setting of the Cluster

The regional setting of the cluster extends over 2 Blocks in South Andaman district viz. Port Blair and Ferrargunj. The map of Andaman & Nicobar Islands is given below:



1.3 Location

The cluster spread includes 3 Villages in Port Blair Block namely new pahargaon, Shadipur & Neil Island and 2 villages in Ferrargunj block viz. Bambooflat & Mannarghat. The Geographical spread of the cluster measures about 25-30 Km radius.

1.4 Evolution of the Cluster

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

The warm humid climate with little variation in temperature makes the Andaman & Nicobar Islands an ideal place for the growth of coconut. The Andaman & Nicobar Islands is divided into North and Middle Andaman, South Andaman and Nicobar. The popular coconut variety are CARI - C1 (Annapurna), CARI-2, (Surya), CARI-C3, (Omkar) and CARI-C 4 (Chandan).

The total coconut cultivation area of Andaman & Nicobar Islands in 2014-15 is **21,910 hectares**, coconut production is **1,298 lakh nuts** and the productivity is **5,924 nuts per hectare**.

The details of area of cultivation, production and productivity of Coconuts in Andaman & Nicobar Islands are as given below:

Year	Area (Ha)	Production (Lakh Nuts)	Productivity (Nuts/Ha)
2010 - 2011	21768.00	950.00	4364.00
2011 - 2012	21800.00	1050.00	4817.00
2012 - 2013	21875.00	1250.00	5714.00
2013 - 2014	21900.00	1289.50	5888.00
2014 - 2015	21910.00	1298.00	5924.00
Average (2010-15) :	21850.60	1167.50	5341.40

Coir, being the natural fibre extracted from the husk of Coconut, Coir industries started flourishing in Andaman & Nicobar Islands owing to the local availability of raw material and naturally the cluster evolved.

1.5 Demography and Growth trends

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

Description	2011	2001
Actual Population	380,581	356,152
Male	202,871	192,972
Female	177,710	163,180
Population Growth	6.86%	26.94%
Percentage of total Population	0.03%	0.03%
Sex Ratio	876	846
Area(Km2)	8,249	8,249
Density/km2	46	43

It is to be noted that the total population growth in this decade was 6.86 percent while in previous decade it was 26.94 percent. The population of Andaman and Nicobar Islands forms 0.03 percent of India in 2011. Out of total population of Andaman and Nicobar Islands, 37.70% people live in urban regions. Sex Ratio in urban regions of Andaman and Nicobar Islands was 874 females per 1000 males.

1.6 Socio-economic aspects

The population of Andaman and Nicobar islands is mixed population from all over India who came at different times. Therefore, there is a mixture of languages, religions and cultures and many a times these islands are described as miniature India. The official working language is English and spoken languages are Bengali, Hindi, Nicobaris, Tamil, and Telugu. The Andaman and Nicobar Islands now ranks 8th in literacy among various States/UTs in the country. There are six tribes in Andaman and Nicobar Islands. The Andamanese, Onges, Sentinelese, Jarawas are in Andaman

Islands and the Nicobarese and Shompens are in the Nicobar Group of Islands.

The fishing industry supports a major portion of the economy of Andaman and Nicobar islands. Besides agriculture is also a major revenue earning source for the peasants of that island. Andaman and Nicobar Islands agriculture is limited within 50000 hectares. Only 12000 hectares of land are flat, which is best suited for agriculture. The main cash crops are cashew nut, coconut, areca nut. Coconut and areca nut are actively cultivated in Andaman and Nicobar Islands and it continues to be important plantation crops for setting up Food based industries in these islands.

The hilly and plain agricultural lands of Andaman and Nicobar Islands are important source of income for the rural people of those areas. Seasonal vegetables, oilseeds, pulses, pepper, nutmeg, cinnamon are some special crops cultivated there. Even the economy at Andaman and Nicobar Islands to some extent, depends on the red oil, rubber, palm and cashew nut that are grown here marginally.

Other major industries that are also a big contributor to the Andaman and Nicobar islands economy include its handicrafts industry, minerals and energy resources. Even tourism is a big industry for the people of Andaman and Nicobar Islands. This land is full of natural beauties and the exotic collection of flora and fauna, which attract tourists worldwide. The innumerable tourist spots of Andaman and Nicobar islands support the tourism industry of the place.

The island abounds with lush green forests that are a storehouse of some rare variety of floras. As a result the timber industry has come up into the island. Woodcrafts are very beautiful that also plays a considerable role in the economy of Andaman and Nicobar islands.

Economy in Andaman and Nicobar Islands depend wholly on all the above factor.

1.7 Human Development Aspects

Human resources in Andaman and Nicobar Islands for development of Industries are limited due to its low population density of 46 persons per square kilometer and low population of 3,80,581 as per Census 2011.

As per 2011 censuses, the total workforce of the district is 1,52,535 of which 1,25,910 are main workers and 26,625 are marginal workers. It accounts for 40.08% of the total population of Andaman & Nicobar Islands. The non-workers to the total population were 59.92% in 2011.

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 20. There are about 400 women trained in Coir handicrafts and the present income level is Rs.300/- per day.

Among the artisans, 80% belongs to OBC category, 10% SC category and remaining 10% belongs to other categories.

1.8 Key Economic Activities of Andaman & Nicobar Islands

Fisheries:

Fishing industry is a big earning method and a big support to the economy of Andaman and Nicobar Islands. The Andaman and Nicobar Islands have a coastal length of 1,912 Km and the Continental Shelf area of about 35,000 Sq.Km. The islands have an exclusive economic zone (EEZ) of 6,00,000 sq.km, which is about 30 percent of the country's EEZ and endowed with unique marine habitat. The annual fishery potential of the islands (1.48 lakh tones) is about 3.8 percent of the fishery potential of the country. In the waters of A&N Island over 1100 species of fish are identified of which about 30 species are commercially exploited at present. The territory is still virgin for exploitation of fish species to serve international markets.

Tourism:

Tourism Industry in the Andaman and Nicobar islands is quite promising, especially in South Andaman District and North and Middle Andaman District. In Nicobar District, the tourism is not promoted due to tribal restrictions. The tourist traffic to this Island has grown from a mere 9500 in 1980 to 86066 in 2000 and 307814 in 2014. Tourist arrival in the Andaman and Nicobar Islands may be seen in the following statement:

Year	Domestic Tourists	Foreign Tourists	Total Tourist
2010	180781	14615	195396
2011	202221	15814	218035
2012	238699	17538	256237
2013	243703	14742	258445
2014	292233	15581	307814

Coir and Coconuts:

Major production and cultivation of Coconuts in the island is concentrated in South Andaman, Campbell Bay, Car Nicobar and Katchal Islands. Coconut plantation is 42.83% of the land out of 50,000 hectares of land available in the island for Agriculture purpose. It is estimated that 280 million nuts are available annually for industrial exploitation. These nuts can be used for development of a number of industries based upon coconuts such as:

- Production of Copra
- Coconut oil manufacturing
- Production of desiccated Coconut which is widely used in the preparation of sweets, confectionery, curry preparation, scented
- Production of Coconut shell powder which can be used for making thermostat molding powders such as phenol formaldehyde, and synthetic resin glues.
- Production of Handicrafts items, toys and bowls from coconut shell.
- Production of Activated carbon.

It is estimated that 56000 M.T. of coconut husk is available annually for exploitation for industrial use in these Islands but only a negligible quantity i.e. 120 M.T of coconut husk is being utilized presently for making coir products and the rest is wasted or used as domestic fuel. There are a few small coir rope manufacturing units in Rangachang & Burmanallah area and one curled coir unit at Hati Tapu, South Andaman.

Cane & Bamboo:

- Out of the total exploitable cane of around 33,00,000 running meter (RM) annually, about 12,50,000 RM is available annually for meeting the requirement of Small Scale Cane Industries and for general consumption
- A complete ban has been imposed on the export of raw cane to ensure availability of cane for industrial use
- The Industrial Estate at Bakultala (Middle Andaman) is being developed as a cane and bamboo cluster by the Directorate of Industries, Andaman and Nicobar Administration.

Agriculture:

Agriculture in Andaman and Nicobar Islands is about a century old. Out of the total geographical area of 8249 sq. km, agricultural activities occupy a mere 50,000 ha out of which 10561 ha is under field crops and 29774 ha under plantation crops. The major cultivable areas are Diglipur, Havelock, Neil and some pockets in south Andaman. The crops produced in these Islands are paddy, pulses, vegetables, banana, sugarcane, chilies, sweet potato, tapioca, etc. As per figures reported by Directorate of Statistics, 24368.20 MT Paddy was produced in 8005.20 hectare land; 71.36 tonnes of sugar cane was produced in 269.5 hectare during 2013-14. Regarding Spices, 641.30 MT Chilly in 329.5 Ha land was produced in 2013-14. Other spices produced include Black Pepper, Ginger Turmeric, Nutmeg, Cinnamon and cloves etc.

1.9 Infrastructure - social, physical, financial and production related

The infrastructure details of Andaman & Nicobar Islands are tabulated as below:

S.No	Indicator	Details	
1.	Total Geographical Area	8249 Sq.Km	
2.	Population	380581	
		Male	Female
		202871	177710
		Rural	Urban
		237093	143488
3.	Population Growth	6.86%	
4.	Sex Ratio (per 1000 males)	876 females	
5.	Literacy rate	86.63%	
		Male	Female
		90.27%	82.43%
6.	Administrative Setup		
	Total No. of Islands	572	
	No.of Districts	3	
	Municipalities	1	
	Taluks	9	
	Blocks	5	
	Revenue Villages	204	
	No.of Panchyats	69	
	Municipalities	4	
7.	Agriculture		
	Area under Agriculture	50000 Ha	
	Area under Coconut Plantation	42.83% of land	
	Net sown area	12755.74 Ha	
	Cultivable Barren Land	1332 Sq.km	
8.	Forest	7171 Sq.Km	
9.	Transport Infrastructure		
	Road length (NH, SH, Rural roads etc)	1272.38 Kms.	
	Registered Motor Vehicles	85442 Nos.	
10.	Commercial Banks	41	
11.	Education		
	Primary Schools	329 Nos.	

S.No	Indicator	Details
	Colleges	2 Nos.
12.	Veterinary Dispensaries	12 nos.
13.	Allopathic Hospitals	3 nos.
14.	Primary Health centres	19 nos.

There were 2221 registered Micro & Small Scale Industries as on 2012-13 in the Union Territory of Andaman and Nicobar Inlands with a total investment of Rs 4511.89 lakh and an employment of 10703 persons. There were 406 Engineering based Industries followed by 243 Wood based Industries, 159 food based Industries and 152 agro based industries in the Islands.

2 Cluster Value Chain Mapping

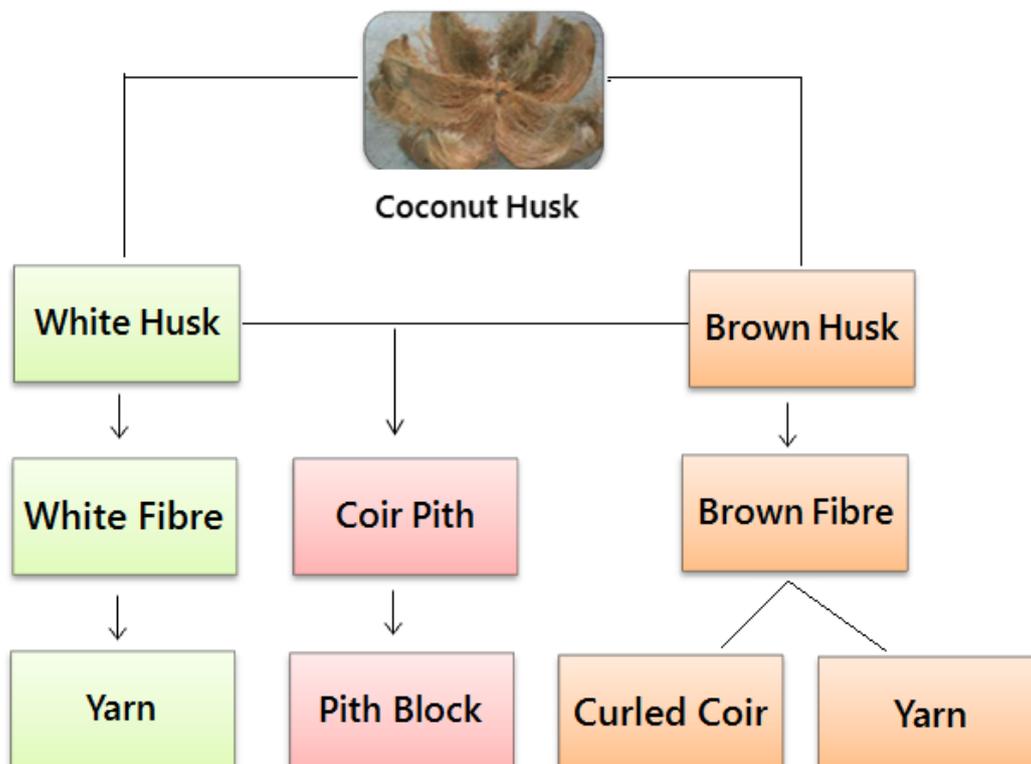
2.1 Product Profile

The following products are produced in the cluster presently.

- Coir Fibre Extraction
- Coir Yarn Spinning

2.2 Production Process

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

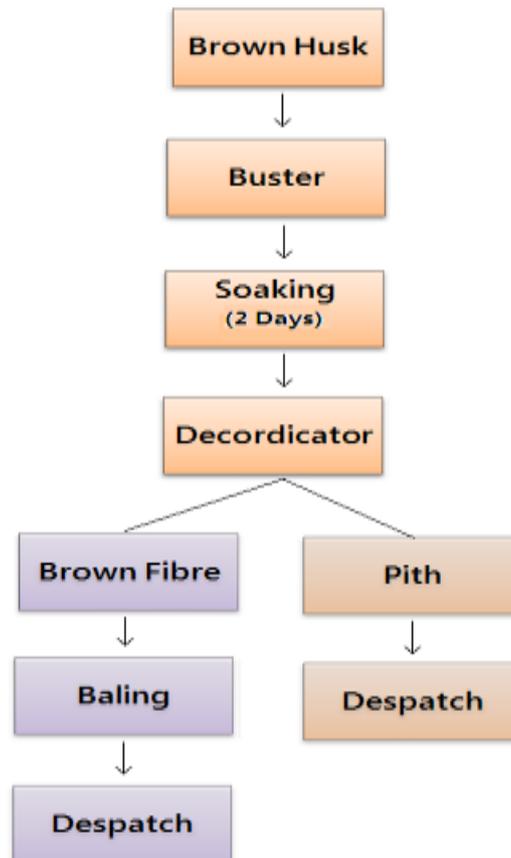


a) Coir Fibre:

The coconut husk (raw material) is collected from the farms and stored. The collected husk is soaked in water. Then soaked material is fed into the decorticator wherein the fibre and pith are separated. The fibre is dried in

the sunlight and is pressed in the form of 35-Kg bundles by using balling press and dispatched for sales.

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



b) Coir Yarn:

Coir yarn spinning is similar to cotton yarn spinning. The processes involved given here under:

- a. Willowing
- b. Combing & Spinning
- c. Winding

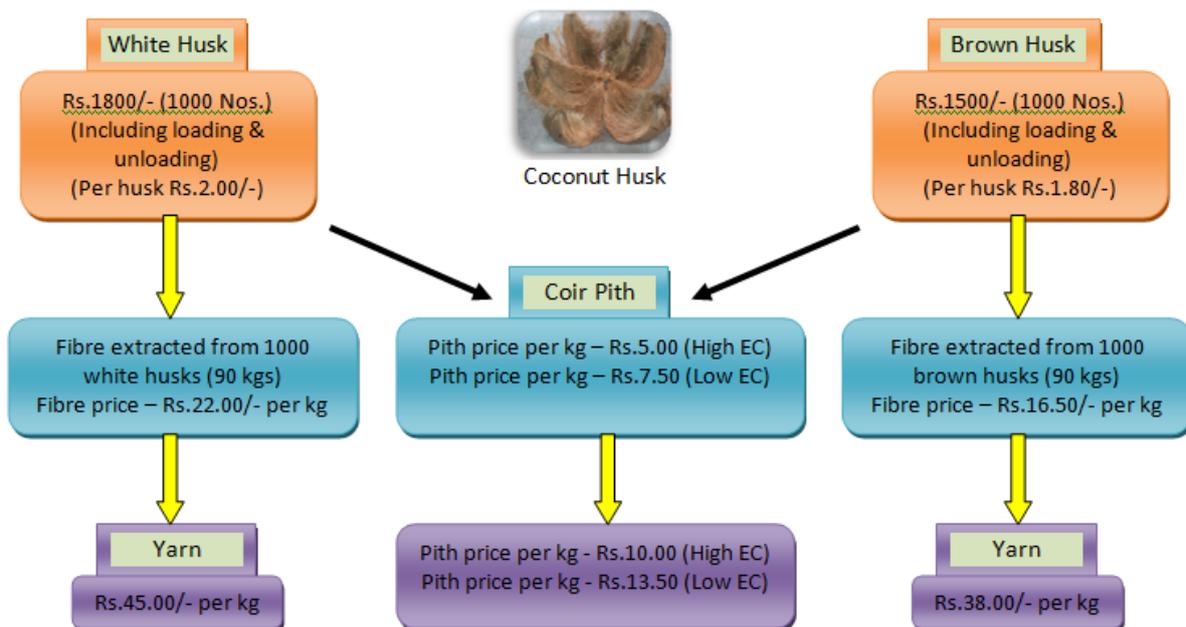
Coir fibre obtained from fibre extraction units and is wetted by spraying water. After 2-3 hours, the wetted fibre is passes through the willowing machine to remove the impurities and the place the fibre and parallel to each other. The fibre is then fed in to slivering machine wherein it is converted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

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



2.3 Value Chain Analysis

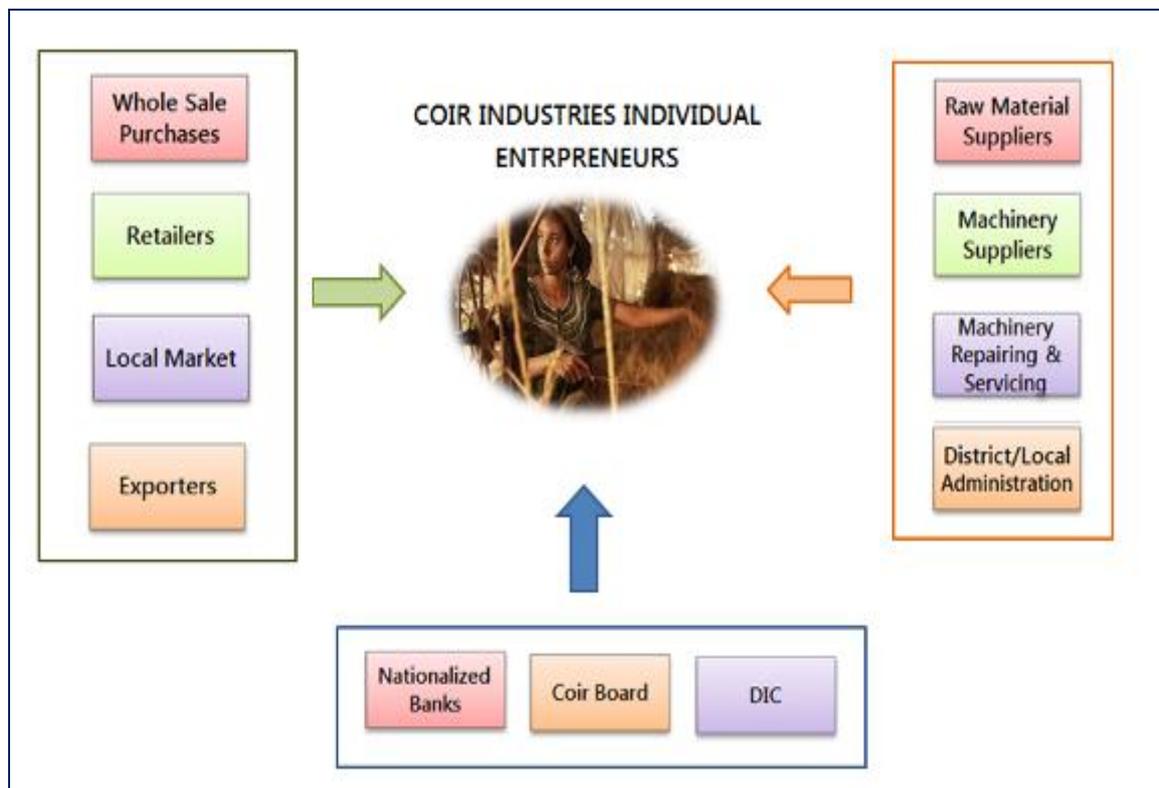
The incremental value of the cluster products from the basic raw material to the final product is given below:



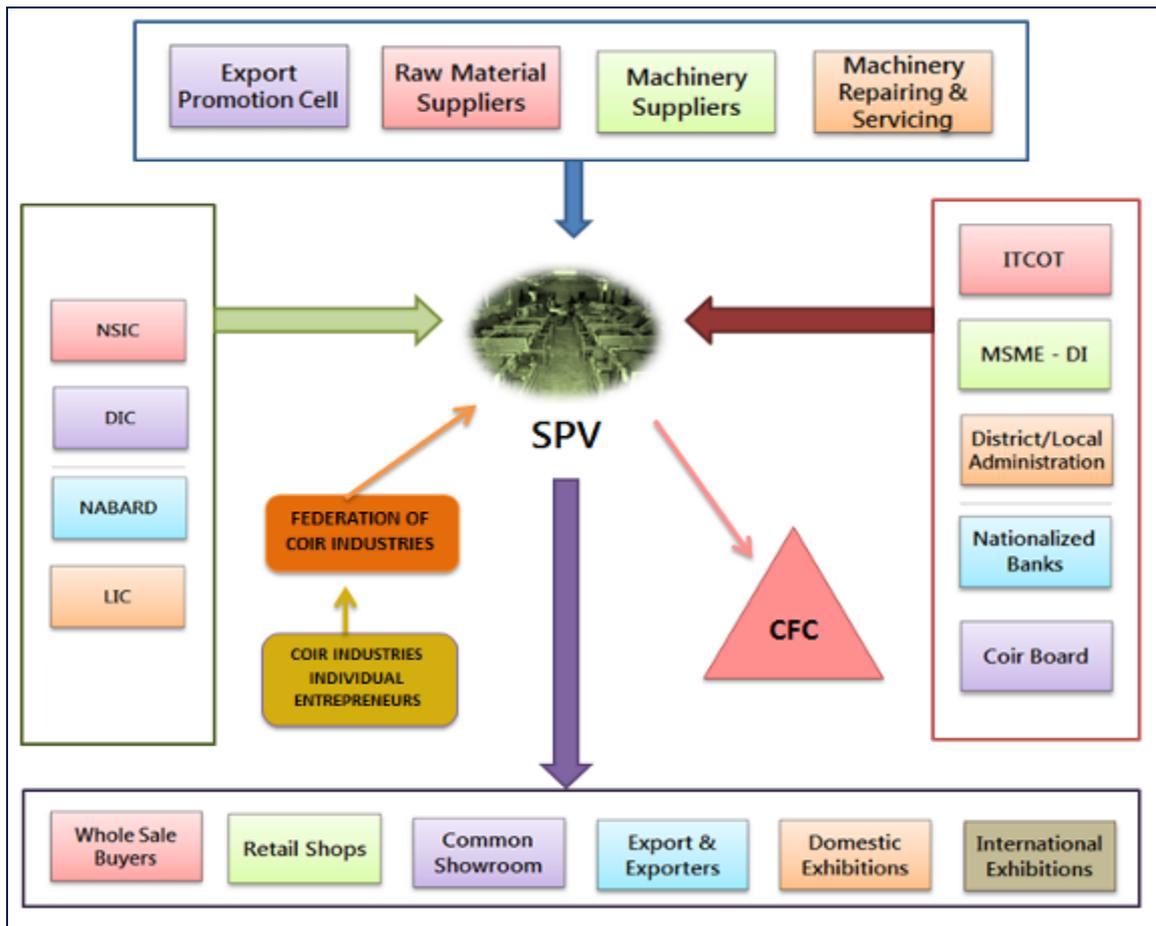
It is observed that the cost of white husk including loading and unloading is valued at Rs.2.00 and that of Coir fibre is Rs.22.00 per Kg. of fibre, which is further value added to Rs.45.00 per Kg. of yarn. Similarly the cost of Brown husk including loading and unloading is valued at Rs.1.80, and that of Coir fibre is Rs.16.50 per Kg. of fibre, which is further value added to Rs.38.00 per Kg. of yarn. The cost of Coir pith, extracted during Fibre extraction, is Rs.7.00 (High EC) and Rs.9.50 (Low EC) is incremented to Rs.10.00 (High EC) and Rs.13.50 (Low EC) per Kgs., when converted to Coir Pith 5 Kgs. blocks.

2.4 Cluster Map

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



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



2.5 Principal Stakeholders

COIR BOARD

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

DISTRICT INDUSTRIES CENTRE (DIC)

The DIC, Port Blair 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 places 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. The institution also focuses on artisan cluster development.

LEAD BANK

State Bank of India is the lead bank in Andaman & Nicobar Islands. 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.

3 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

S.No.	State	Area ('000 Ha)	Production (in million nuts)	Productivity (Nuts/ha)
12.	Tripura	7.2	29.51	4097
13.	Nagaland	0.33	2.67	8091
14.	Others	52.8	388.13	7351
	All India	2088.47	22167.45	10614

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

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

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

Item	April 2016- March2017		April 2015- March2016		% Growth	
	Q	V	Q	V	Q	V
Coir Pith	490552	90539.11	408897	68808.56	20.0	31.6
Coir Fibre	370357	53913.63	255293	41767.11	45.1	29.1
Tufted Mat	51718	48442.83	45770	44316.03	13.0	9.3
Handloom Mat	20143	21316.31	20386	22279.96	-1.2	-4.3
Geo textiles	6219	4481.04	4520	3531.72	37.6	26.9
Coir Yarn	4426	2948.32	4134	2820.82	7.1	4.5

Curled Coir	10356	2419.30	9470	2510.07	9.4	-3.6
Handloom Mattings	1272	1535.25	1706	1968.78	-25.4	-22.0
Rubberized Coir	888	1295.64	678	971.74	30.9	33.3
Coir Other Sorts	256	416.59	46	94.79	451.9	339.5
Coir Rope	484	388.50	517	396.61	-6.3	-2.0
Coir Rugs & Carpet	205	271.92	307	282.5	-33.1	-3.7
Powerloom Mat	166	196.38	280	367.35	-40.5	-46.5
Powerloom Matting	0	0.00	16	26.48	-	-
Total	957045	228164.82	752020	190142.52	27.3	20.0

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

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

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

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

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

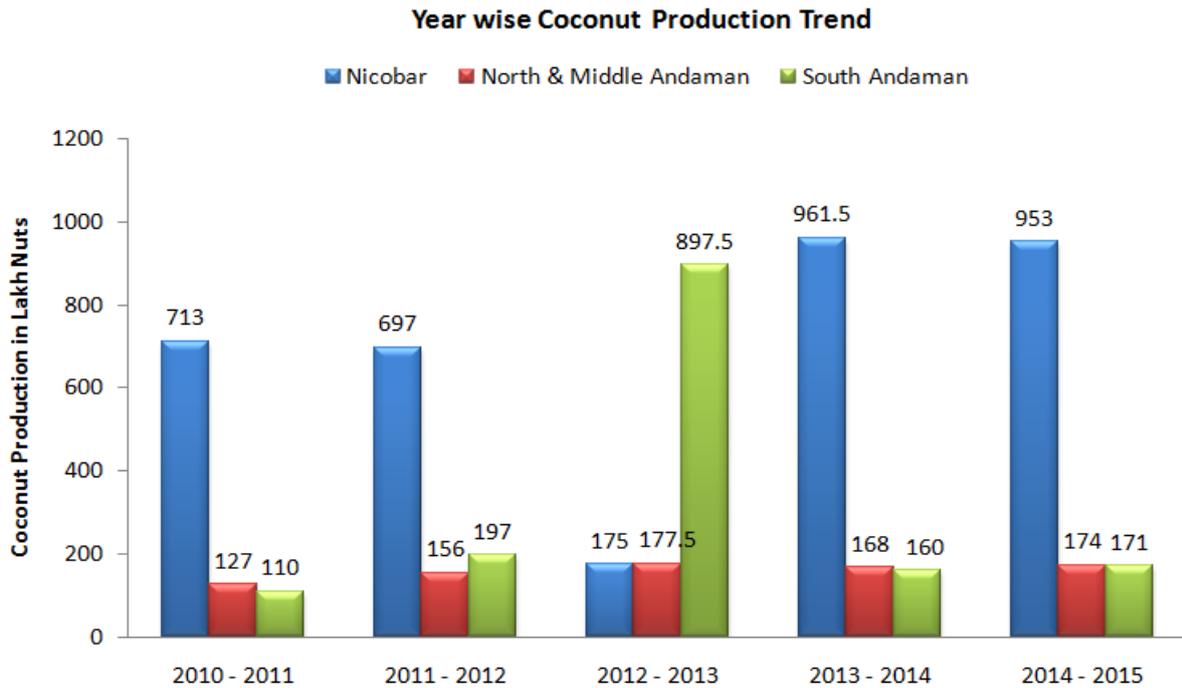
S.No.	Country	Quantity (in MTs)	Value (Rs.Lakhs)	Quantity (%)	Value (%)
1.	China	439884.57	66655.52	45.96	29.21
2.	USA	133536.72	53286.56	13.95	23.35
3.	Netherlands	82487.53	18148.78	8.62	7.95
4.	UK	17668.15	11076.22	1.85	4.85
5.	South Korea	57545.12	9486.28	6.01	4.16

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.

Coconut production trend in Andaman & Nicobar Islands

Andaman and Nicobar Islands predominantly growing coconut crops and major produce is coconut. The husk of the coconut which is the basic raw materials for coir industries now available in plenty and thrown it as waste without industrial exploitation as well as value addition. In term of livelihood, about 50% of the UT population is directly dependent of Agriculture & Allied Activities. The total land being used for agriculture is relatively small due to paucity of non-forested land and numerous competing infrastructural demands. Thus, only about 6% of the non-forested land i.e. about 50,000 ha is being used for agriculture purposes of which 10561 ha is under field crops and 29774 ha is under plantation crops. Half of the agriculture land is used for coconut plantation. Coconut cultivation occupies 42.83% of land followed by Paddy and other field crop 18.73% of land, Areca nut 8.11% of land, Fruits 5.9% of land, Spices 3.22% of land and Red Oil Palm 3.18% of land.

The year wise coconut production in Andaman & Nicobar Islands is given below:



Coconut is considered as one of the major remunerative crop of the islands. The main economy of the people directly depends on the fortunes of the crop. The total production of nuts in the year 2014-15 in the Andaman & Nicobar Islands is 1,298 Lakhs. The productivity of coconut per hectare is about 5924 nuts per hectare. It is also observed that the major coconut production centres are Nicobar Islands and South Andaman with an average coconut production of 700 and 307 lakh nuts per year respectively.

As far as the cluster is concerned, Andaman & Nicobar Islands is the significant market place for Coir yarn. The product line is limited to mainly Coir Fibre and Coir Yarn. There are good prospect to utilize the available husk in Andaman and Nicobar Islands. The amounts of husk generated today are going as waste. Hence, it is considered that the growth prospects for Coir fibre and coir yarn are excellent, both domestically and internationally.

4 SWOT and Need Gap Analysis

SWOT Analysis and Need Gap Analysis of the Andaman Coir cluster is given hereunder:

4.1. SWOT Analysis

Strengths

- Sufficient availability of coconut husk (basic raw material) provides scope for development of coir sector in the cluster.
- The cluster is situated in the major tourist zone. There is potential for increasing volume of direct marketing of coir handicraft products to local and foreign tourists.
- The warm humid climate with little variation in temperature makes the Andaman & Nicobar Islands an apt place for the growth of coconut.
- The average availability of husk in this area is about 969.98 lakhs nuts per annum. Hardly 5-10% of the husk is utilized for productive purpose.
- Excellent network of commercial and co-operative banks in the cluster.
- Presence of Support institutions such as Coir Board, District Industries Centre, Commercial banks etc.

Weaknesses

- The utilization of raw material (husk) for productive purpose is very less, due to inadequate facility.
- The island, being distant to the main land, accessibility of machineries, technologies, support services etc. is an issue.
- The cluster needs holistic approach at farm level and enterprise level, in order to stimulate increased coir activity in the island.
- Lack of formal networks for marketing and input procurement.

Opportunities

- The upcoming CFC with updated technology would augment coir activities in the islands.
- Possibility of exploiting the tourist footfalls, in selling the Coir handicrafts products, for which ample number of skilled artisans are available in the cluster.
- Being natural and eco-friendly, acceptable to even developed market and Increasing Domestic and Export market for coir products is foreseen as a bright opportunity.
- Cluster development schemes like SFURTI, soft credit etc., would open new opportunities for the development of coir sector in the region.
- Willingness of entrepreneurs for associating in the scheme and hence share beneficiary contribution can be mobilized.

Threats

- Competition from products such as Nylon, Jute Sisal fibre etc.
- Competition from coconut growing country viz.: Sri Lanka, Indonesia & Philippines etc.
- Utilization of husk for unproductive purposes.

4.2. Need Gap Analysis

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

- As per the statistics of Coconut Board 2014-15, the production of coconut in the envisaged cluster area is 969.98 lakhs nuts per year. However, the utilization of husk is estimated to below 10%. The major problems perceived in this context are small land holding, inadequate system for collection of husks from the farms, etc.
- Lack of awareness of the value chain of the Coir and hence no entrepreneurial activity in Coir has been initiated so far, in large scale.
- Even though local market is available for Coir yarn and handicrafts, sufficient production could not be undertaken for want of Coir Fibre, the basic raw material.

- The availability of skilled artisans in Coir handicrafts sector is not utilized.
- Utility Coir products such as Coir mats, Coir pith compost etc., which could be manufactured locally are not undertaken so far.
- No direct linkage with domestic or export buyers. Total distribution is through local dealers only

Based on the need gap assessment, an integrated coir processing unit consisting of fibre extraction, spinning, curled coir making, pith compost making, coir handicrafts/ornaments making facilities are proposed.

5 Profile of the Implementing Agency

SFURTI scheme implementation guidelines prescribes that the Implementing agencies (IA) would be Non-Government Organizations (NGOs), institutions of the Central and State Governments and semi-Government institutions, field functionaries of State and Central Govt., Panchayat Raj Institutions (PRIs) etc. with suitable expertise to undertake cluster development. It has also been stipulated that Private sector participation is also encouraged. Corporate entities can also take up projects directly by forming cluster specific SPVs. Corporate and Corporate Social Responsibility (CSR) foundations with expertise in cluster development is also encouraged to participate as IAs.

YUVASAKTHI, an NGO functioning in Port Blair, A & N islands is proposed as the Implementing Agency for the cluster. YUVASAKTHI, registered under Societies Registration act, 1860 on 27.11.2003, has been involved in various social developmental activities such as Promotion of SHGs, conducting skill based and vocational trainings, Community development etc. The details of the agency, founders and General Secretary of the agency are given below:

Name of the agency	YUVA SAKTHI
Legal entity	Society registered under Societies act, 1860 (Regn.No. 1146)
Registration date	27.11.2003
Founders	1. Mr.P.Shenbagarraja 2. Mr.K.Subramani
General Secretary	Smt. P.Sulochana
Contact details	Address: 2 nd floor, Toor Niwas RGT Road, Port Blair - 700 141. Phone: 03192-241607 Mobile: 94742-86441, 94342-93579 E-mail: spsraja3@gmail.com aksm.andamans@gmail.com

Financial Performance of the Yuvasakthi

Financial performance of the Yuvasakthi for the last 3 years is given below:

Liabilities	Rs.	Assets	Rs.
Financial Year 2016-17			
Capital Account	48,769	Fixed Assets	4,03,257
Loans	78,35,552	Current Assets, Loans & Advances	78,72,313
Current Liabilities	6,21,151	Bank closing Balance	2,29,902
Total	85,05,472	Total	85,05,472
Financial Year 2015-16			
Capital Account	2,03,175	Fixed Assets	4,59,380
Loans	77,24,522	Current Assets, Loans & Advances	76,42,160
Current Liabilities	4,77,582	Bank closing Balance	3,03,739
Total	84,05,279	Total	84,05,279
Financial Year 2014-15			
Capital Account	10,77,202	Fixed Assets	4,83,936
Loans	62,99,911	Current Assets, Loans & Advances	70,80,203
Current Liabilities	2,54,826	Bank closing Balance	67,800
Total	76,31,939	Total	76,31,939

6 Project Concept & Strategy Framework

6.1. Project Rationale

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

The Cluster is concentrated with Coir yarn units and the scope for further value addition of Coir yarn is immense. In order to directly benefit the coir yarn units in the cluster, value addition of coir yarn is considered an apt infrastructure for the cluster.

6.2. Project Objective

- To engage in production of value added competitive products to increase the cluster turnover substantially and to enhance the value chain of the cluster
- Creation of additional employment opportunities in the cluster
- Improve quality and standard of life of the people working in the cluster
- To create suitable infrastructure for substantial increase of cluster turnover
- Production of value added commercial products that augment the income level of huge number of employees/ artisans engaged coir yarn spinning

6.3. 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
- Curled Coir Manufacturing facility
- Coir Handicrafts & Frame mats manufacturing facility
- Coir Pith Compost (Organic Manure)

6.4. Conceptual Framework / Project Strategy

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

7 Project Interventions

7.1 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

- **Participation in Trade Fairs:** The main objectives of participation of trade fairs are:
 - Increased Sales
 - Product showcasing for enhanced product visibility
 - Establish qualified leads

In addition, trade fairs are the ideal place for understanding market trends, comparing prices and sales terms etc.
- **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.

7.2 Hard Interventions

a) Creation of common facility centre:

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

- ✚ Coir fibre extraction facility
- ✚ Coir Two ply yarn spinning facility
- ✚ Curled Coir Manufacturing facility
- ✚ Coir Handicrafts & Frame mats manufacturing facility
- ✚ Coir Pith Compost (Organic Manure)

8 Hard Interventions

8.1. Proposed Interventions:

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

- ✚ Coir fibre extraction facility
- ✚ Coir Two ply yarn spinning facility
- ✚ Curled Coir Manufacturing facility
- ✚ Coir Handicrafts & Frame mats manufacturing facility
- ✚ Coir Pith Compost (Organic Manure)

8.2. Land & Building

Land:

The land for Common Facility Center (CFC) has been identified at SF No.73/1/2, Hasmatatabad village, Wandoor Post, Ferrakunj Tehsil, South Andaman. The total land extent is 2.50 acres, which is considered adequate for the proposed activities. The copy of agreement is enclosed in Annexure-1. Other infrastructural facilities such as road, power, water etc. are found adequate for the proposed CFC.

Building and Civil works:

The total extent of building for the proposed Common Facility Center is estimated at around 11,550 Sq.ft. and the section wise extent is given below:

S.No	CFC Building	Built up Area (in Sq.ft)	Rate (Rs./Sq.ft.)	Total (Rs.Lakhs)
1.	Coir fibre Extraction (incl. Storage)	3000	800	24.00
2.	Drying yard	2500	200	5.00

S.No	CFC Building	Built up Area (in Sq.ft)	Rate (Rs./Sq.ft.)	Total (Rs.Lakhs)
3.	Automatic Yarn Spinning (6 Machines)	2800	800	22.40
4.	Curled Coir (2 machines)	1000	800	8.00
5.	Coir Handicrafts - Workshed	1000	800	8.00
6.	Coir Pith compost	600	800	4.80
7.	Power room	150	800	1.20
8.	Admin office	500	1200	6.00
Total		11550		79.40

The estimate of building and civil works proposed has been worked out to Rs.79.40 lakhs as mentioned above.

8.3. Product & Process:

a) Coir Fibre Extraction Facility

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 geofabric for controlling landslide or soil erosion, for protection of embankments of roads, railway and canals.

Coir Fibre is the primary product during the process of fibre extraction and Coir pith is the by product. Coir pith is a spongy material that binds the coconut fibre in the husk, coir pith is finding new applications. It is an excellent soil conditioner and is being extensively used as a soil-less medium for agri-horticultural purposes. With its moisture retention qualities, coir pith is ideal for growing anthuriums and orchids.

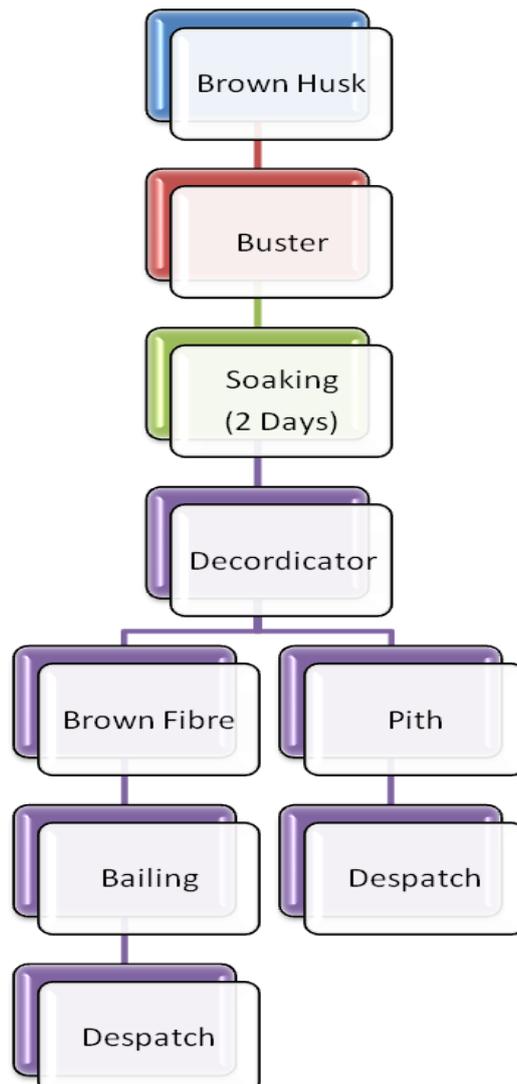
Proposed machineries:

S.No	Name of the Machineries & Specifications
1.	Disintegrator 3.5' - 60 HP, 1440 RPM, 3 Phase

S.No	Name of the Machineries & Specifications
2.	Decorticator 7'- 60 HP, 1440 RPM, 3 Phase
3.	Bailing Machine - 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.	Conveyer 285' - 1.5 HP, 960 RPM, 3 Phase

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 bailing 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
Rigidity of modulus	1.8924 dync/cm ²
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.

Proposed Machineries:

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

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) Curled Coir Rope:

The clean fibre is fed to the hackling machine in which the fibre is loosened, opened out and teased to facilitate easy curling. Then the hackled fibre is fed to the curling machine in which the fibre is straightened passing through the rollers and curled in the spinning head. The curled rope is wound on bobbins and the bobbin head. The hopper feeder is provided for feeding uniform weight from the quantity of fibre to the curling machine. The ropes of different diameters can be produced on the curling machine.



c) 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

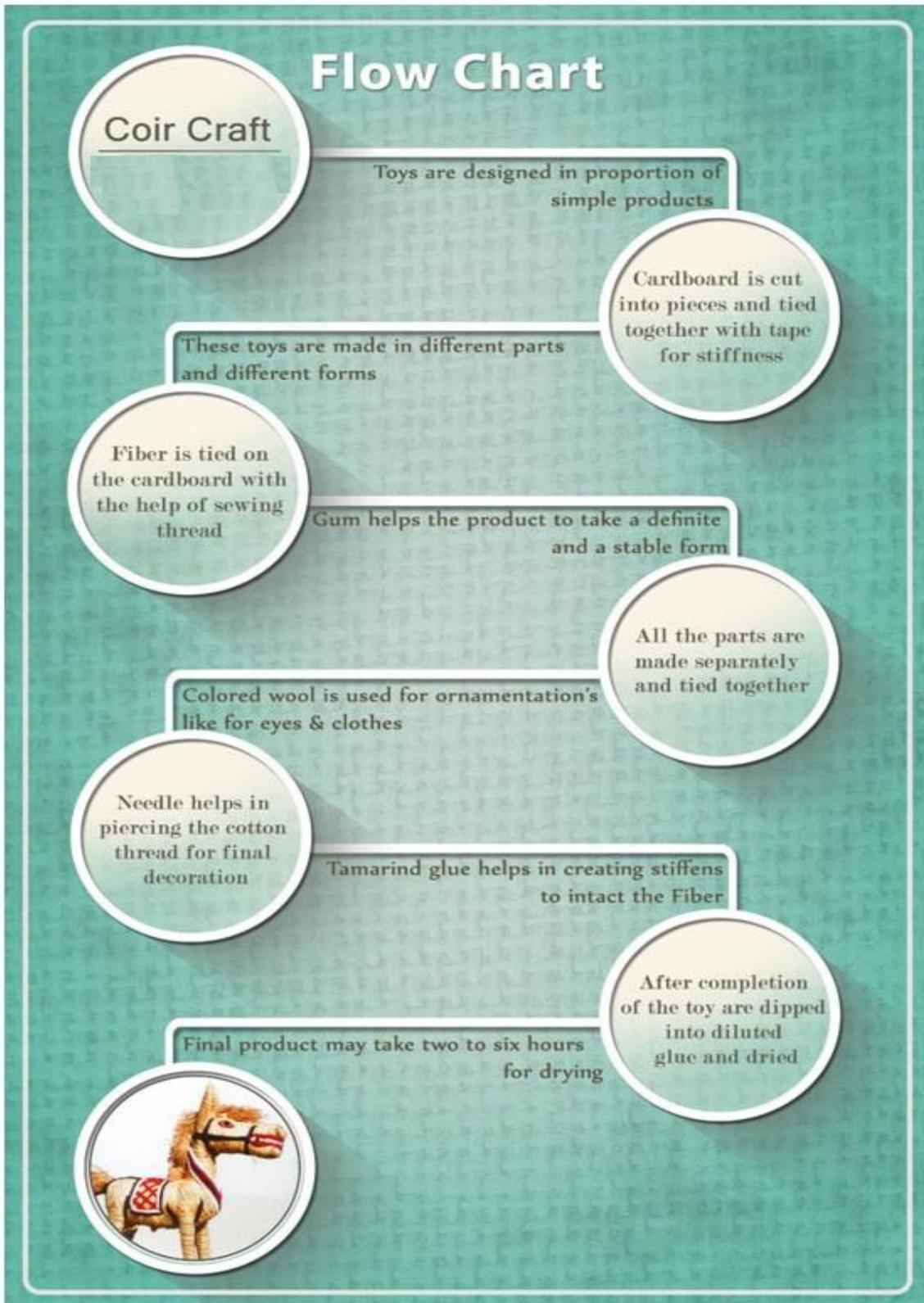
For making a toy, firstly, the design is to be finalized and made on the paper. According to the design they work on the proportion of the toys. For simple and small products, the coir is simply tied with the thread to make desired products. Glue is diluted with water and then used for pasting the fiber 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.



d) 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.



d) Coir Frame Mat

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.



e) Coir Pith 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.

Application for Coir Pith compost

- It is recommended that 5 tons of composted coir pith per hectare of land irrespective of the raised.
- It is advised that composted coir pith should be applied basally before take up the sowing.

- For nursery development in poly bags and in mud pots, while preparing the potting mixture 20 % of composted coir pith can be mixed with the soil and sand before filing it in the poly bag or mud pot
- For applying to the established trees like coconut, mango, banana and other fruit bearing trees, minimum 5 kg composted coir pith is required. Dosage (per annum) for application of Coir pith organic manure on different crops are given below:

Coconut	12 kg / Palm	Rose	0.75 kg / Plant
Plantain	5 kg / Plant	Anthurium	500 gm / Plant
Black pepper	5 kg / standard	Orchid	250 gm / Plant
Areca nut	12 kg / Palm	Zennia	250 gm / Plant
Cardamom	5 kg / clump	Jasmine	300 gm / Plant
Coffee	5 kg / Plant	Sunflower	600 gm / Plant
Tea	0.5 kg / Plant	Ixora	300 gm / Plant
Rubber	2 kg / Plant	Chrysanthemum	300 gm / Plant
Paddy	150 kg /Acre	Oscimum	300 gm / Plant
Tapioca	2 kg / Plant	Tomato	0.3 kg / Plant
Betel	2 kg / Plant	Legume	0.3 kg / Plant
Cocoa	2 kg / Plant	Snake guard	0.5 kg / Plant
Vanilla	1 kg / Plant	Yam	0.5 kg / Plant
Mango	6 kg / Tree	Colocasia	0.5 kg / Plant
Pineapple	1 kg / Plant	Turmeric	0.1 kg / Plant
Grapes	1 kg / Plant	Ginger	0.1 kg / Plant
Sappotta	3 kg / Plant	Cabbage	0.3 kg / Plant
Carrot	0.1 kg / Plant	Chilly	0.3 Kg / Plant
Beetroot	0.1 kg / Plant	Lady finger	0.3 kg / Plant

Nutritive value of Composted Coir Pith:

The nutritive value of the composted coir pith is given below:

Parameters	Composted coir pith (%)
Lignin	4.80
Cellulose	10.10

Parameters	Composted coir pith (%)
Carbon	24.00
Nitrogen	1.24
Phosphorous	0.06
Potassium	1.20
Calcium	0.50
Magnesium	0.48
Iron(ppm)	0.09
Manganese(ppm)	25.00
Zinc(ppm)	15.80
Copper(ppm)	6.20
C:N ratio	24:1

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%



8.4. Proposed Capacity

a) Coir Fibre Extraction

The installed capacity of the proposed Coir Fibre production unit is 2.00 Tons per shift. It has been proposed one shift operations and the installed capacity of the unit is worked out to 600 tons per annum, with 300 working days per annum.

Installed Capacity per shift	2.00 Tons of fibre
Number of shifts per day	1
Number of days per annum	300 days
Installed Capacity per annum	600 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 100 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 180 tons per annum

Capacity per machine per shift	100 kgs
Number of machines	6
Number of shifts per day	1
Number of days per annum	300 days
Installed Capacity per annum	180 tons

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

c) Curled coir

The production capacity of the Curled coir is given hereunder:

Installed Capacity per shift	300 kgs
Number of machines	2
Number of shifts per day	1
Number of days per annum	300
Installed Capacity per annum	180 tons

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
Yield (Coir Pith to Compost)	70%
Cost of Pithplus and Urea (per ton of output)	Rs. 750.00
Selling price of Coir pith compost (per ton of output)	Rs. 16,000.00

8.5. Proposed Machinery and Equipments

The list of machineries proposed and the cost thereof is given hereunder:

S.No.	Component	Estimated cost (Rs.lakhs)
1.	Coir fibre Extraction	45.00
2.	Automatic Yarn Spinning (6 Machines)	30.00
3.	Curled Coir machines (2 machines)	8.00
4.	Coir Handicrafts Equipments and tools	5.00
5.	Coir Pith Compost	5.00
6.	Coir Dehusker machine (2 Nos. of 500 Nos. /hour)	5.00
7.	Electricals and Electrification (incl. borewell)	14.00
8.	Handling infrastructure (Tractor with bull loader, Husk collection vehicle)	18.00
Total		130.00

8.6. Project Cost

The project components and the cost thereof are mentioned below:

S.No.	Component	Total cost	Gol Grant	SPV Share
1	Soft Interventions	15.00	15.00	-
2	Building and Civil works	79.40	71.46	7.94
3	Machinery and other infra cost			
3.1	Coir fibre Extraction	45.00	40.50	4.50
3.2	Automatic Yarn Spinning (6 Machines)	30.00	27.00	3.00
3.3	Curled Coir (2 Machines)	8.00	7.20	0.80
3.4	Coir Handicrafts & Mats Equipments	5.00	4.50	0.50
3.5	Coir Pith Compost	5.00	4.50	0.50
3.6	Coir Dehusker machine (2 Nos. of 500 Nos./hour each)	5.00	4.50	0.50
3.7	Electricals (incl. borewell)	14.00	12.60	1.40
3.8	Handling infrastructure	18.00	16.20	1.80
	Total Machinery and other Infra cost	130.00	117.00	13.00
4	Working capital	15.00	13.50	1.50
	Total Hard Interventions cost	224.40	201.96	22.44
	Total Interventions cost (Soft & Hard)	239.40	216.96	22.44
5	Cost of TA (8% of HI Cost - Grant)	16.16	16.16	-
6	Cost of IA (8% of HI Cost - Grant)	16.16	16.16	-
	Total Project Cost	271.71	249.27	22.44

8.7. Power

The connected load requirement estimated for the project is 180 HP. The power connection could be availed through Single window scheme of District Industries Center.

8.8. Water

The water requirement for the unit is estimated at 10,000 litres per day. The water for the project is to be sourced from the borewells. The ground

water level in the location is considered good and the water availability for the project could be met from the proposed borewells.

8.9. Manpower

The manpower requirement estimated for the project is given hereunder:

Description	Nos.
Manager - Production	1
Manager - Admin & Marketing	1
Supervisors	2
Male Workers	5
Female workers (Unskilled)	12
Admin and Accounts	2
Security	2
Total	25

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

8.10. 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.

8.11. 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.

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	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	SPV, NA & PMA
6	Cost of Training programme	Rs. 3,00,000/-
7	Implementation timeline	Quarter VI, VII

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	Quarter VII, VIII

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	Quarter V, VI

10 Project Cost & Means of Finance

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

S.No.	Proposed Interventions	Period		Projected Cost (Rs.Lakhs)	Gol Share (Rs.Lakhs)	SPV Share (Rs.Lakhs)
		Year	Quarter			
1	SOFT INTERVENTIONS					
1.1	Capacity Building					
1.1.1	Trust building and motivational programme	I	Q1	1.00	1.00	-
1.1.2	Awareness Programme	I	Q2	1.00	1.00	-
1.1.3	Entrepreneurship Development Programme	I	Q2	2.00	2.00	-
1.1.4	Skill Upgradation Programme	I	Q3,Q4	3.00	3.00	-
1.1.5	Exposure Tour	I	Q2	2.00	2.00	-
	Total Capacity Building cost			9.00	9.00	-
1.2	Market Promotion					
1.2.1	Participation in Trade fairs	II	Q2/Q3	3.00	3.00	-
1.2.2	Design Development Programme	II	Q3/Q4	2.00	2.00	-
1.2.3	Tie up with Business Development Service (BDS) providers	II	Q1/Q2	1.00	1.00	-
1.2.4	Total Market Promotion cost			6.00	6.00	-
	Total Soft Interventions Cost			15.00	15.00	-

2	HARD INTERVENTIONS					
2.1	Building for CFC	I	Q3,Q4	79.40	71.46	7.94
2.2	Machinery for Common Facility Proposed					
2.2.1	Coir Dehusking machine	II	Q1	5.00	4.50	0.50
2.2.2	Coir Fibre Extraction	II	Q1	45.00	40.50	4.50
2.2.3	Automatic Yarn Spinning (3 Nos.)	II	Q1	30.00	27.00	3.00
2.2.4	Curled Coir	II	Q2	8.00	7.20	0.80
2.2.5	Coir Handicrafts & Mats	II	Q2	5.00	4.50	0.50
2.2.6	Coir Pith Compost	II	Q2	5.00	4.50	0.50
2.2.7	Electricals (incl. borewell)			14.00	12.60	1.40
2.2.8	Handling infra (Bull loader, Collection vehicle)	II	Q1	18.00	16.20	1.80
2.2.9	Working Capital for one cycle of operation	II	Q1	15.00	13.50	1.50
	Total Hard Interventions Cost (including Land)			224.40	201.96	22.44
	Total Interventions cost (Soft & Hard)			239.40	216.96	22.44
3	Cost of TA (8% of HI Cost - Grant)			16.16	16.16	-
4	Cost of IA (8% of HI Cost - Grant)			16.16	16.16	-
	Total Project Cost			271.71	249.27	22.44

11 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	3 (Coir Fibre Extraction units)	3 units x Rs.50.00 lakhs = Rs.150.00 lakhs	Rs.52.50 Lakhs	Rs.90.00 Lakhs	Rs.7.50 Lakhs
PMEGP	5 (Coir Yarn spinning units)	5 units x Rs.15.00 lakhs = Rs.75.00 lakhs	Rs.26.25 Lakhs	Rs.45.00 Lakhs	Rs.3.75 Lakhs
	TOTAL	Rs.225.00 lakhs	78.75	135.00	11.25

The additional investment estimated in the cluster is Rs.225.00 Lakhs with the scheme funding of Rs.78.75 lakhs, bank credit of Rs.135.00 lakhs and the promoter's contribution of Rs.11.25 lakhs.

12 Enhanced Project Cost & Means of Finance

The Project cost and Means of Finance of CORE SFURTI project is illustrated in Chapter 10. 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. The leveraging of resources from various sources for cluster development would be explored and possible add on resources would be included in the Detailed project report.

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

(Rs.Lakhs)

S.No.	Component	Total Cost	Grant Component	Promoter's Contribution & Bank Loan
01.	Core SFURTI	271.71	249.27	22.44
02.	Convergence initiatives (Establishment of individual units under various schemes)	225.00	78.75	146.25
	Total	496.71	328.02	168.69

The enhanced project cost including the Core SFURTI and other convergence initiatives works out to Rs.496.71 lakhs, whereas the corresponding Grant component is Rs.328.02 lakhs and that of Contribution and bank loan is Rs.168.69 lakhs.

13 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		
1.2.2	Participation in Trade fairs	II	Q2/Q3
1.2.3	Design Development Programme	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 (3 Machines)	II	Q1
2.2.3	Curled Coir	II	Q2
2.2.4	Coir Handicrafts & Frame Mats	II	Q2
2.2.5	Coir Pith Compost	II	Q2
2.2.6	Coir Dehusker machine	II	Q1
2.2.7	Electricals (incl. borewell)	II	Q1
2.2.8	Handling infrastructure	II	Q1

14 Proposed Implementation Framework

14.1. Role of Implementing Agency

The role and responsibility of the IA includes the following:

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

14.2. Details of Strategic Partners

The cluster is proposed to be developed under SFURTI (Scheme of Fund for Regeneration of Traditional Industries). The Coir Board is the Nodal agency (NA) and ITCOT Consultancy and Services Limited is the Technical Agency (TA) appointed by Coir Board. The Implementing agency proposed is **Ms.YUVASAKTHI**, the Non Government Organization, registered under Societies Act 1860, having its office at Port Blair, A&N islands. The above agencies work in tandem towards the successful implementation of the project in a sustainable manner.

14.3. Structure of the SPV

A Special Purpose Vehicle (SPV) is formed and being registered as Cooperative Society in the name of **"ANDAMAN COIR CLUSTER COOPERATIVE SOCIETY LIMITED"** in Andaman and Nicobar islands. The SPV is being registered with 9 executive members and 400 members of the Cooperative society. The SPV will be strengthened to manage the Cluster activities in sustainable nature after the project implementation is over.

14.4. Composition of the SPV

An SPV is being registered as the Cooperative Society and the details of the office bearers are given below:

Name of the Cooperative society	Andaman Coir Cluster Cooperative Society Limited
President	Smt. S.Shapna Kumari
Secretary	Smt. S.Kamala Devi
Treasurer	Smt. Rajat lakra

The Executive Committee members are given below:

S.No.	Name of the EC member
1	Smt. Thenmozhi
2	Smt. Mary Arjala
3	Miss. Rekha Kumari
4	Smt. Victoria Xess
5	Smt. R.V.V.Nagalakshmi
6	Miss. Shama Bibi
7	Smt. Zulekha Bibi
8	Smt. Mariam Goroti Dung Dung
9	Smt. Susma Biswas

The registration is being carried out with 9 members as executive committee members and 400 additional members, who have evinced interest, are proposed to be included as members of the society.

15 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)	85.00	275.00
2	Investment (Rs. Lakhs)	80.00	300.00
3	Employment (Nos.)	20	250 (including Handicraft artisans)
4	Wages per day (Rs.)	250	350 - 400
5	Profitability (%)	8-10%	15-18%

- Strong linkages among the Cluster members and actors in all levels of the value chain and an established Collaborative setup in place to undertake development initiatives & address common issues.
- Emergence of specialized support service providers and their active involvement in the development process
- Increased production of Coir Fibre and yarn, resulting in enhanced income for coir products manufacturers by minimum 15%, on utilizing the CFC for value addition and marketing of finished products.
- Establishment of new units by converging various schemes of UT and Central Governments resulting in additional investments and increased turnover in Coir sector in the region.
- 100% Coverage of Coir workers in the cluster under social security schemes.

FINANCIAL STATEMENTS

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

		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)		79.40		7.94	71.46	
Plant and Machinery (incl. Trans., Erec. & Comm.)		98.00		9.80	88.20	
Electricals & accessories (incl. Genset, Borewell)		14.00		1.40	12.60	
Handling infrastructure (Frontloader, Collection vehicles)		18.00		1.80	16.20	
Contingencies	1.50%	3.14		3.14	0.00	
Deposits (as per statement 1.1)		4.01		4.01	0.00	
Prel. & Pre-operative Expenses		1.45		1.45	0.00	
Working Capital Margin (as per statement-2)		15.00		1.50	13.50	
Total		233.00		31.04	201.96	
Means of Finance						
SPV Share		31.04				
State Govt. Grant		201.96				
Total		233.00				

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

ASSESSMENT OF WORKING CAPITAL							Statement-2
Current Assets	Days	1	2	3	4	5	
Stock of Raw Materials (Husk, Pith consumables)	30	7.41	8.01	9.08	9.31	9.59	
Finished products	6	2.48	2.65	2.94	3.03	3.13	
Receivables	5	3.12	3.37	3.82	3.92	4.03	
Cash and Bank balance		1.50	1.60	1.80	1.80	1.80	
Other current assets		0.75	0.80	0.90	0.90	0.90	
Total		15.25	16.43	18.54	18.95	19.44	
Current Liabilities							
Other Current Liabilities		0.25	0.26	0.28	0.29	0.30	
Total		0.25	0.26	0.28	0.29	0.30	
Working Capital Gap							
Margin		15.00	16.16	18.26	18.66	19.14	

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

					Statement	3	
COST OF PRODUCTION & PROFITABILITY							
				RS.LAKHS			
Years		1	2	3	4	5	
Installed Capacity per annum							
Coir Fibre Production	Tons	600	600	600	600	600	
Coir Yarn Spinning	Tons	180	180	180	180	180	
Curled Coir	Tons	180	180	180	180	180	
Coir Pith Compost	Tons	224	224	224	224	224	
Capacity Utilisation	%	75%	80%	90%	90%	90%	
Production Quantity per annum							
Coir Fibre Production	<i>Tons</i>	450	480	540	540	540	
Coir Yarn Spinning	<i>Tons</i>	135	144	162	162	162	
Curled Coir	<i>Tons</i>	135	144	162	162	162	
Nett Fibre quantity available after yarn spun		315	336	378	378	378	
Coir Pith Compost	<i>Tons</i>	168	179	202	202	202	
User Charge / Sales Realisation (Rs. Lakhs)							
Coir Fibre sales (Nett off CFC Consumption)	Rs.18,500	33.30	35.52	39.96	39.96	39.96	
Coir Yarn (Two-ply)	Rs.40,000	54.00	57.60	64.80	64.80	64.80	
Curled Coir	Rs.23,000	31.05	33.12	37.26	37.26	37.26	
Coir Pith (Surplus of Compost)	Rs.5,000	21.75	23.20	26.10	26.10	26.10	
Coir Pith Compost	Rs.16,000	26.88	28.67	32.26	32.26	32.26	
Coir Handicrafts		20.00	24.00	28.80	34.56	41.47	
Annual Sales Realisation		186.98	202.11	229.18	234.94	241.85	

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

Cost Of Production				Statement-3 contd...		
Raw material requirement						
- Coconut Husks (for Coir Fibre Extraction)	'000 Nos.	5400.00	5760.00	6480.00	6480.00	6480.00
- 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
<i>Internal Pith generation (from Fibre Extr. In Tons)</i>		<i>675.00</i>	<i>720.00</i>	<i>810.00</i>	<i>810.00</i>	<i>810.00</i>
Surplus pith available		435.00	464.00	522.00	522.00	522.00
Cost of raw material						
Coconut husk - Coir Fibre Extraction	Rs. 1,200.00	64.80	69.12	77.76	77.76	77.76
Cost of Pith plus and Compost consumables	Rs.750	1.26	1.34	1.51	1.51	1.51
Coir Handicrafts consumables	40%	8.00	9.60	11.52	13.82	16.59
Lease Rental for CFC Land	Rs.12,000	1.44	1.44	1.44	1.44	1.44
Cost Of Power	Statement 6	13.12	14.00	15.75	15.75	15.75
Salary & Wages	Statement 7	33.26	34.93	36.67	38.51	40.43
Repairs & Maintenance	2.00%	1.96	2.16	2.37	2.61	2.87
		123.85	132.58	147.02	151.40	156.35
Administrative Expenses	1.00%	1.87	2.02	2.29	2.35	2.42
Marketing Expenses	2.00%	3.74	4.04	4.58	4.70	4.84
Prel. & Preop. Expenses (w/o)	10.00%	0.15	0.15	0.15	0.15	0.15
Depreciation	Statement 8	12.41	12.41	12.41	12.41	12.41
Total		142.01	151.20	166.46	171.00	176.16
Profit Bef. Tax		44.97	50.91	62.72	63.93	65.69
Provision for taxation		6.09	11.17	17.61	19.81	21.79
Profit after Tax		38.88	39.74	45.11	44.13	43.89

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

					Statement	4	
Assumptions For Cost Of Production And Profitability							
a. Coir Fibre Extraction							
Installed Capacity per shift	2.00	Tons of fibre					
Number of shifts per day	1						
Number of days per annum	300						
Installed Capacity per annum	600	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	100.00	Kgs.					
Number of machines	6						
Number of shifts per day	1						
Number of days per annum	300.00						
Installed Capacity per annum	180.00	Tons					
Selling price of Coir Yarn	Rs. 40,000.00	per Ton					

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

						Statement	4 contd.
c. Curled Coir							
Installed Capacity per shift	300	Kgs.					
Number of machines	2						
Number of shifts per day	1						
Number of days per annum	300						
Installed Capacity per annum	180	Tons					
Selling Price	Rs. 23,000.00	per Ton					
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 consumables & labour	40%	of Sales Realization					

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

Capacity Utilisation							
- First year	75%						
- Second year	80%						
-Third year onwards	90%						
Lease Rental for CFC land	Rs.12,000	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%	Of 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					

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

					Statement	5	
CALCULATION OF INCOME TAX							
				RS.LAKHS			
Years		1	2	3	4	5	
Net Profit		44.97	50.91	62.72	63.93	65.69	
Add: Straight Line Dep.		12.41	12.41	12.41	12.41	12.41	
Less: Wdv Depreciation		39.99	31.41	24.83	19.75	15.83	
Total		17.39	31.91	50.30	56.59	62.27	
Income Bef. Incentives		17.39	31.91	50.30	56.59	62.27	
Less: Deductions	0%	0.00	0.00	0.00	0.00	0.00	
Taxable Income		17.39	31.91	50.30	56.59	62.27	
Income Tax	35%	6.09	11.17	17.61	19.81	21.79	
Loss C/F		0.00	0.00	0.00	0.00	0.00	
Profit After Tax		38.88	39.74	45.11	44.13	43.89	

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

					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						

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

				Statement	7		
MANPOWER REQUIREMENT AND ESTIMATION OF COST							
			RS.LAKHS				
Description	Nos.	Salary	Annual				
		per month	Salary				
Manager - Production	1	25000	300000				
Manager - Admin & Marketing	1	25000	300000				
Supervisors	2	15000	360000				
Male Workers	5	10000	600000				
Female workers (Unskilled)	12	8000	1152000				
Admin and Accounts	2	8000	192000				
Security	2	5000	120000				
	Total	25		3024000			
	Add: Benefits	10%	302400				
	Grant Total			3326400			

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

					Statement	8	
ESTIMATION OF DEPRECIATION							
			RS.LAKHS				
Straight Line Method	VALUE	DEP. RATE	1	2	3	4	5
Building & Civil works	80.59	3.34%	2.69	2.69	2.69	2.69	2.69
Plant & Machinery	100.92	7.40%	7.47	7.47	7.47	7.47	7.47
Electricals	14.21	6.33%	0.90	0.90	0.90	0.90	0.90
Handling Equipments	18.27	7.40%	1.35	1.35	1.35	1.35	1.35
Office Equipments & furniture	0.00	7.40%	0.00	0.00	0.00	0.00	0.00
Total	213.99		12.41	12.41	12.41	12.41	12.41
WDV Method							
Building & Civil works		10.00%	8.06	7.25	6.53	5.88	5.29
WDV	80.59		72.53	65.28	58.75	52.88	47.59
Plant & Machinery		25.00%	25.23	18.92	14.19	10.64	7.98
WDV	100.92		75.69	56.77	42.58	31.93	23.95
Electricals		15.00%	2.13	1.81	1.54	1.31	1.11
WDV	14.21		12.08	10.27	8.73	7.42	6.31
Handling Equipments		25.00%	4.57	3.43	2.57	1.93	1.45
WDV	18.27		13.70	10.28	7.71	5.78	4.34
Office Equipments & furniture		25.00%	0.00	0.00	0.00	0.00	0.00
WDV	0.00		0.00	0.00	0.00	0.00	0.00
Total	213.99		39.99	31.41	24.83	19.75	15.83
Note: Contingency & Pre-operatives are apportioned with the cost of assets.							

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

PROJECTED CASH-FLOW STATEMENT						
					Statement	9
				RS.LAKHS		
Years		1	2	3	4	5
Source Of Funds						
Promoters Capital	31.04					
SFURTI Grant	201.96					
Profit Before Int.,Dep. & Tax		57.38	63.32	75.13	76.34	78.10
Increase in W.C.Loan		0.00	0.00	0.00	0.00	0.00
Total	233.00	57.38	63.32	75.13	76.34	78.10
Uses						
Inc. in Capital Expenditure	212.54					
Deposits (as per statement 1.1)	4.01					
Increase in W.Capital		15.00	1.16	2.10	0.40	0.48
Provision For Taxation		6.09	11.17	17.61	19.81	21.79
Total	216.55	21.09	12.33	19.71	20.21	22.27
Surplus	16.45	36.29	50.99	55.43	56.14	55.83
Opening Balance	0.00	16.45	52.74	103.73	159.16	215.29
Closing Balance	16.45	52.74	103.73	159.16	215.29	271.12

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

PROJECTED BALANCE SHEET						
					Statement	10
				RS.LAKHS		
Years	PR. PERIOD	1	2	3	4	5
Liabilities						
Promoters Capital	31.04	31.04	31.04	31.04	31.04	31.04
SFURTI Grant	201.96	201.96	201.96	201.96	201.96	201.96
Reserves & Surplus		38.88	78.62	123.74	167.86	211.76
W.C.Borrowings		0.00	0.00	0.00	0.00	0.00
Current liabilities		0.25	0.26	0.28	0.29	0.30
Total	233.00	272.13	311.89	357.01	401.15	445.06
Assets						
Gross Block	212.54	212.54	212.54	212.54	212.54	212.54
Less: Accu. Depreciation		12.41	24.82	37.23	49.65	62.06
Net Block	212.54	200.13	187.72	175.31	162.90	150.48
Deposits	4.01	4.01	4.01	4.01	4.01	4.01
Current Assets		15.25	16.43	18.54	18.95	19.44
Closing Balance	16.45	52.74	103.73	159.16	215.29	271.12
Total	233.00	272.13	311.89	357.01	401.15	445.06
	0.00	0.00	0.00	0.00	0.00	0.00

DETAILED PROJECT REPORT ON ANDAMAN COIR CLUSTER DEVELOPMENT UNDER SFURTI

					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	212.54						
Preliminary & Preoperative Expenses	4.01						
Technical Know-How	0.00						
Working Capital Margin	15.00						
Total	231.55	0.00	0.00	0.00	0.00	0.00	
Cash Inflow							
Profit After Tax		38.88	39.74	45.11	44.13	43.89	
Depreciation		12.41	12.41	12.41	12.41	12.41	
W.C.Margin						19.14	
Residual Value Of F.Assets						53.14	
Total	0.00	51.29	52.15	57.53	56.54	128.58	
Net Cash Flow	-231.55	51.29	52.15	57.53	56.54	128.58	
Net Present Value	Rs.32.77	lakhs					
at 8% discount rate							
Internal Rate of Return	12.85%						