

## *Executive Summary*

### **Techno Economic Feasibility Study for Setting up of Coir Industry in states like Gujarat, Maharashtra and West Bengal**



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# EXECUTIVE SUMMARY

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## BACKGROUND

- Coir 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. India is the largest coir producer in the world accounting for more than 80 per cent of the total world production of coir fibre. 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.
- The coir industry scenario of the country is rapidly changing. The production and productivity of coir products have increased manifold and the industry has immense potential to give employment to millions.
- In view of the socio-economic and development considerations, Coir Board the apex body functioning in the sector plans to bring in a quantum change with holistic approach to usher a new era in the MSME sector. Under the supervision of Coir Board, **the** Industry has spread to all the coconut producing states, committed to its efforts and significant development are seen in Tamil Nadu, Karnataka, Andhra Pradesh and Kerala.
- As a part of the mission to understand the potential for developing the Coir Industry in the state of West Bengal, Maharashtra and Gujarat, **Coir Board has appointed Centre for Market Research & Social Development Pvt. Ltd (CMSD) to conduct “Techno-Economic feasibility study for setting up of Coir Industry”** to study the Utilization of maximum quantity of coconut husk for the Coir Industry and providing of financial assistance for setting up of new coir units and modernization of existing units for the sustainable growth of the coir sector.

## STUDY OBJECTIVES

The broad objectives of this study was to conduct a techno-economic feasibility study for developing Coir Industry and setting up of coir based units in Gujarat, Maharashtra and West Bengal to enhance the production, infrastructure, marketing, processing and export potential of the coir products and recommend measures for enhancing productivity, infrastructure and marketing. The study was based on the explorative, descriptive and analytical-research approach

to study the objectives in depth. The study was conducted on a basis of the sample of respondents involved in the value chain including the coir workers, coir unit owners, coconut farmers, traders, experts, government officials, unit owners, trade participants of other hard fibres, and other stakeholders involved in the coir and other hard fibre industry.

## **THE STUDY FINDINGS: COCONUT PRODUCTION, HUSK POTENTIAL, UTILIZATION AND CHALLENGES TO THE COIR INDUSTRIES**

### **GUJARAT**

- Gujarat is one of the largest coastal state (having more than 1600 k.m coast line) where the coconuts are grown. The data indicates although area under cultivation for coconut has gone up in comparison to 2010-11 but productivity rate per hectare has been reduced. It is evident from the statistics that few districts like Junagarh, Valsad, Bhavnagar, are the key Coconut producing districts of Gujarat. Other districts do not have large Coconut field rather it is grown on embankments, canals, river belt, courtyards, private farm houses etc.
- Gujarat being a relatively better Industrialized state in India, has given less focus on Coconut production and allied processing industries. The state has more focus on other fruits and vegetables like Mango, Chiku, Ber, Citrus, Banana, Guava, Papaya, Cashew than Coconuts.
- In coconut or coir sector, the wholesale traders are not registered and they do not have any association or registered body to estimate the actual number of coconuts being brought in the state. It was learnt there are wholesale coconut traders in hundreds in Ahmadabad alone and there would be many hundreds of traders are operating in the state of Gujarat. Each trader brings 25-30 trucks coconuts each year and each truck contains minimum of 350 Bags. Each bag contains 50-60 coconuts. Some time it varies during festivity season. But there is no organised mechanism to collect the coconut husk and thus, almost majority of husks generated from these coconuts go waste. Most of the coconut husk which is of industrial use is wet / green. It is being collected through individual hawkers close to the proximity of Coir units.
- The poor collection of coconut husk is also due to high demand for fuel wood. The firewood which is very expensive in comparison to coconut husk, thus, people use coconut husk as firewood. The local poor people collect husk from local traders and use as fuel. Though there are good amount / volume of husk available in Gujarat but the utilization is relatively very poor. As understood during the study, the coir industry is not

being considered as a priority sector although it has immense potential to create employment and provide livelihood support to millions of people.

- The study observed 2950.3 nuts in lakhs have been produced and the productivity rate per hectare is 9328 nuts in Gujarat. Further, it is also observed one coconut produces 150 grams coconut husk. So, if all coconuts are made available for generating fibre, the total potential of the state will be 44254.50 tons. Further, looking at all angles, the study estimates 70 % coconuts can be brought for commercial use. The state have the potential to produce 30978.15 tons but at present only 560 tons are being produced. Hence, the percentage utilization is estimated at 1.80% in Gujarat.
- The price of one husk in Gujarat revolves around Rs 1.00 to Rs 1.10/- per husk. The trade has immense potential to generate trade of Rs 20.65 to Rs 22.71 crore in a year. But at the moment, it is generating a business in the range of Rs 37 lakh to Rs 41 lakh. Similarly, with regard to coir fibre, cost per kg of coir fibre is in the range of Rs 15 to Rs 20/- in Gujarat. The fibre trade has potential to generate trade in the range of Rs 46.47 crore to Rs 61.96 crore in a year. At present, the Coir fibre trade is in the range of Rs 0.84 crore to Rs 1.12 crore.
- With regard to coir industries, the study observed, at present, there are 6 coir industries in the State and a total number of 145 workers are working in coir industries in the state. Most of the workers are below poverty line. The wages in Gujarat is comparatively low in comparison to other sector. It is between Rs 200/-to Rs 300/- per day. Workers are not getting any benefits in terms of insurance etc form the coir industries and not much interested to work due to the other sector are paying better.
- Domestic market is available because the coir products are eco-friendly but need to create awareness about the potential of the coir industry and the products should be made available as in the case of plastic and textile products. As seen, the market is available but it is difficult to find the coir products in the local markets. The state has immense export potentials but no such efforts have yet been made. At present, there is only one showroom opened in the Gujarat state. In the festival season, huge demand of coir products are being felt as it is being used in making idols. Artisans are available in Gujarat state for making coir handicraft products and a good market is available for this kind of product in festival season in Gujarat but efforts made towards this is very less.
- At present, the coir industries are facing a tough time in making the industries commercially viable. This is because the cost of raw material and other costs involved to convert into fibre are huge while the margin is very low as the market demand is poor. Besides, the quality of fibre produced is relatively poor in quality. Not only that there are

lean periods when there is shortage of raw material and huge finished fibre stocks piled up, so there is no rotation of money which acts as a de-motivating factor for the entrepreneur. Other cotton based products are accessible in market in good quality that also makes lots of negative impact on Coir products. The Coir Board should act in close coordination with the state government and focus to establish and promote coir industries in Junagarh district in Phase-I and based on success it should move to other districts of the state

- After glancing through primary and secondary research inputs, it was concluded that in the light of prevailing situations especially the availability of raw materials, its quality, industrial climate, efforts made to revitalize it and the market situation, it won't be feasible to set up a full-fledged coir cluster at the moment. However, the Coir Board may take up initiatives to set up Coir industries by giving priority to Junagarh in Gujarat in the first phase and later it may expand to other coastal districts.
- In the current situation, the Coir Board should act in close coordination with the state government and focus to establish and promote coir industries in Junagarh district in Phase-I and based on success it may think of replicating the business in other coastal districts of the state

## **MAHARASHTRA**

- The state of Maharashtra is having five districts adjoining to coast line of Arabian Sea i.e. Raigarh, Thane, Sindhudurg, Ratnagiri and Kolhapur where Coconuts are produced. Among these five districts, Sindhudurg district is producing more number of coconuts than other districts. The study recommends the Coir Industry may be promoted in two districts namely Sindhudurg and Ratnagiri. Areas such as Vengurla, Swantwadi and Kudaal in Sindhudurg carry immense potential and thus, industry may be promoted in these locations in the current stage and later on it may be expanded to other locations and Ratnagiri district.
- In Sindhudurg District, around 16000 hectare field is Coconut out of 11000 hector is producing coconuts. In one hector 250 Coconut trees and 50 to 60 nuts per tree nuts which comes 16 crore nuts per year in Sindhu Durg district. From each husk (250-300 gram) 60-70 gram fibre produced, 70% dust and 5% wastage. There is different version on the production of coconut production. There are specific pockets of coconuts producers within the districts. The coconuts grown in court yard, farms, and private gardens are not counted.

- In Ratnagiri districts there are only few pockets producing coconuts. The Brown coconuts are consumed in Maharashtra. The Coconuts figures transported from other states are not known, as there is no established method of its calculation. There is no exclusive coconut farming. It is secondary farming to create fence, waste land, and court yard. Coconut is not the main crop in Maharashtra. Cashew, Rice, Mango, Grapes, Banana, are the main crop and coconut is the secondary crop which requires lots of water. The Government of Maharashtra has put a ceiling that no farmer can grow more than 42 acre coconut due to heavy water consumption in irrigated land. The Coconut is not the main crop of Sindhudurg, Ratnagiri district where the maximum Coconuts are produced. Cashews, Mango, rice, fish are the other food supplements. There is no exclusive farming of coconut; it is planted to make farm boundary, court yard, farm houses. The production of coconut in private court yard, garden, are not traceable, uncounted and not known. The nursery which is supplied by Govt. Department is calculated and it is not the actual. The coconut Plantation from open market, private nurseries etc, supplied to farmers are not counted and unknown. Therefore, the actual number of coconuts produced annually is not known in any district / state but definitely higher than the Government figure suggests. There are inter-district, inter-block variations in coconut production depending on soil quality and land availability. The farmer's first choice is mango, cashew, grapes, rice, and then coconut. De-husked brown coconuts in large quantity are being transported from other states but its number is not known as there is no mechanism to know it.
- Maharashtra has given less focus on Coconut production and coir industry. The coconut husks are not sold in open market in bulk like Gujarat. There are small farmers who use coconut husk as a fuel and to dry betel nuts. The cost of fire wood has become very expensive. Thus they make use of small quantity of coconut husk and keep it for fuel. As a ritual the people in coastal areas take bath with hot water in all season and because of this they need fuel throughout the year. The people use coconut husks to boil water as it is cost effective to them in comparison to other available options. In order to focus on collection of husks, the Government of Maharashtra, under its pro-coconut industrial policy, have established a Coir Cluster at Kudaal in Sindhudurg district and to get the raw material for the factory they have invited tender for procuring husk @ of Rs. 0.75 per husk.
- The Coconut traders normally purchase coconuts from small producer groups. They collect & keep the purchased coconuts in their own premises. The de-husking is done manually and in most of households they keep a small tool to segregates the husk from coconut. They use this practice as to save the cost of transportation and its volume. The average cost of husk segregation comes around Rs. 0.50/- per coconut. There is no organised mechanism to collect the coconut husk. Most of the coconut husk which is of

industrial use is dry. It is being collected through individual hawkers close to the proximity of Coir units.

- The study observed 1874.7 nuts in lakhs have been produced and the productivity rate per hectare is 6676 nuts in Maharashtra. Further, it is also observed one coconut produces 100 grams coconut husk. So, if all coconuts are made available for generating fibre, the total potential of the state will be 1874.70 tons. Further, looking at all angles, the study estimates 70 % coconuts can be brought for commercial use. Hence, the state have the potential to produce 1312.29 tons but at present only 1000 tons are being produced. Hence, the percentage utilization is estimated at 7.62%.
- The price of one husk in Maharashtra revolves around Rs 0.55 to Rs 0.75/- per husk. The trade has immense potential to generate trade of Rs 7.21 to Rs 9.84 crore in a year. But at the moment, it is generating a business in the range of Rs 55 lakh to Rs 75 lakh. Similarly, with regard to coir fibre, cost per kg of coir fibre is in the range of Rs 15 to Rs 25/- in Maharashtra. The fibre trade has potential to generate trade in the range of Rs 23.62 crore to Rs 32.81 crore in a year. At present, the Coir fibre trade is in the range of Rs 1.8 crore to Rs 2.5 crore.
- The study observed the state despite having potentials of husk generation, procures husk from outside states. As learnt, husk is being procured with a price in the range of Rs 500/- Rs 600/- per 1000 husks. Primarily, the husk is being purchased from Pollachi, Tamilnadu by the local husk traders. In order to encourage the coconut husk trade, the Government of Maharashtra has recently floated tender for procuring local husks from the local market. The tender has been finalized and the selected trader is supply husk @ Rs 0.60/- to Rs 1/- per husk at their premises.
- Despite the efforts of the state government, there are several grey areas in the husk trade. One of such challenge, as identified during the field survey, is the size of coconut. The coconut size is small in comparison to the coconuts produced in the southern south states and this is affecting the quality of husk in competitive market. In Maharashtra, 100-150 grams extracted from 1 husk and total estimated production of fibre in the state is 1000 ton approximately. This is one of the main reasons for low husk utilization in the state. The other reason is being the use of coconut husk as alternate fuel. The firewood which is very expensive in comparison to coconut husk, is the another reason people use this as firewood. The local people collect husk from local traders and use as fuel. As evident, though there are good amount / volume of husk available and the utilization of available husk is relatively very poor. As evident, the coir industry is not considered as a priority sector although it has immense potential to create employment and provide livelihood support to millions of people of the state.

- With regard to coir industries, in Maharashtra, a total 69 coir industries are in operation. The study further observed, the major potential areas are Sindhudurg, Ratnagiri and Raigad district. Household units and artisans are also working in Sindhudurg district and sale their products in tourist seasons. There is a need to organize them and establish an integrated coir unit in the district. Government of Maharashtra had taken steps to establish a defibring unit in Sindhudurg district (Industrial Area) but the efforts initiated are quiet less.
- The study further reveals around 1500 people are working in coir industries and a number of training programmes have been organised by the Coir Board. Majority workers engaged in Coir Trade are women. Wages are comparatively low in comparison to other sectors. It is observed good number of skilled manpower and artisans are available in the coconut concentration areas and coir board also doing good efforts in developing skilled manpower but the potentials are yet to be tapped to the desired extent. Maharashtra has immense potential due to its industrial climate, export potential and influx of tourists to the state. Good domestic market available in that particular region approximate 5 lakhs tourist coming every year in November to February in Sindhudurg district only as informed. There are also the opportunity of 100% EOU units which may be develop with state government support for coir pith and value added products. But despite the potentials, the coir market has not taken place and the people of the area have not taken up coir industry for their livelihood.
- Coir Fibre Sale is done mostly during festivity season to make worshipping idols. However, other products like rope; pith is fetching to recover the investment cost. The Coir Industry and Coir based production is considered as full time business rather it is treated part time job. The cyclical nature of Coconut harvesting and raw material availability is also responsible for this trend.
- The market situation for Coir fibre is at shrinking stage due to other cotton and plastic products. It is Coir Rope and Pith which can cover the investment cost for Coir sector units. The labour and electricity is very expensive. The marketing for pith is a grey area which is not yet discovered. The machines to convert pith in to pith block is also expensive and because of this the sale of pith is very limited.
- The Government of Maharashtra has taken initiatives to set up a coir cluster at Kudaal in Sindhudurg district. In addition there are other two units namely Sri Dutta Coir Industries and Mahila Kathya Kamgaar units which consumes fairly good amount of husk, The Coir Board may establish Husk Banks in particular in Sindhudurg and Ratnagiri district to collect husks for commercial use. The government may discuss with the state government



and establish such Husk Banks. The government should conduct awareness programmes on utilities and commercial viabilities of coconut husks so that people start storing rather than wasting it thinking as a waste material. The government need to establish a robust husk collection mechanism to encourage entrepreneurs to open small scale coir industries in the state.

- The study team had intensive dialogue and discussion with series of officials / stakeholders. The study understands there is a possibility of setting up a Coir Cluster at Kudaal in Sindhudurg district where there is availability of raw materials, positive Industrial climate is emerging, and efforts are already made to install Coir cluster at MIDC Kudaal by Maharashtra Government. There is market especially the coastal area where lots of fishermen, Navy (Coastline guard) need coconut made rope, as they venture in to sea for fish catching. There is some beginning at Private and Govt. level. The Mahila Kaatya Kaamgar Audyogic Sahakari Sanstha, Bengurla and at the Government level, MIDC Kudaal has initiated this process in Sindhudurg district.
- The Maharashtra Government has already completed the construction work to install a Coir Cluster in Sindhudurg district whereas, The Mahila Kaatya Kaamgar Audyogic Sahakari Sanstha, Vengurla and the Dutta Coir Industries, Sawantwadi is already functional and registered.
- Recently keeping in view of opening a Coir cluster at MIDC, Kudaal, district Sindhudurg, the Government of Maharashtra has recently invited a tender asking for supply of coconut husk @ Rs. 0.75 per husk and the supplier has to give at least 3 lakhs husk per year. But already functional units consumes pretty good amount of husk. There is likelihood of rising price of husk which ultimately results on price of the products as collection of husk is made on ad-hoc basis.
- Based on the study, the study suggests, the Coir Board may establish Husk Banks in particular in Sindhudurg and Ratnagiri district to collect husks for commercial use. The government may discuss with the state government and establish such Husk Banks. Secondly, the government may conduct awareness programmes on utilities and commercial viabilities of coconut husks so that people start storing rather than wasting it thinking as a waste material. The government needs to establish a robust husk collection mechanism to encourage entrepreneurs to open small scale coir industries in the state. The Coir Board should focus to establish and promote coir industries in Sindhudurg district in Phase-I and based on success it may be moved to Ratnagiri in Phase-II.

## WEST BENGAL

- The study wanted to assess the quantum of coconut production, coir fibre production and trade in the state. The study reveals coconut production is being done 29300 ha of land in 2014-15 and total production is 3955 lakh nuts. The productivity per hectares stands at 13498 nuts. The study indicates, Murshidabad (644 Lakh nuts), South 24 Parganas (560.56 Lakh nuts), North 24 parganas (485 Lakh nuts) and Midnapore East (424 lakh nuts) produces maximum number of coconuts in the state. South 24 Pargana and Midnapore East have better potential for coir industry than other parts of the state because the state government is promoting coir industry in these two districts.
- The study observed, a total 9355 lakhs husk is available in the state. The price of one husk is Rs.0.60/- to Rs 0.80/- and one husk generates an average of 150 gram fibre. It is estimated, 0.71% of husk being utilized coir fibre production rest as being used as waste materials.
- There is no organized system for collection of coir husk. Only Coconut traders and Goladars (stockiest) are the source of husk as they collect coconut from primary agriculture markets, farmers, different districts, de-husking and segregates from coconuts, for onwards disposal for their clients and keep the husk for processing and industrial use. In absence of organized systematic collections it gets wasted and sold for fuel consumption.
- The study observed three districts of West Bengal, namely Howrah, South 24 Pargana and Midnapur, there are coconut traders who can give husk if it is asked and there is demand for its industrial use. The transportation cost of husk is very high and there is no demand of husk in Coir industry. The small farmers having 4-5 coconut trees and collection of husk is not feasible.
- The Coconut traders normally purchase coconuts from small producer groups. They collect & keep the purchased coconuts in their own premises. The de-husking is done manually and in most of households they keep a small tool to segregates the husk from coconut. They use this practice as to save the cost of transportation and its volume. The average cost of husk segregation comes around Rs. 0.50/- per coconut.
- The study observed 3708.3 nuts in lakhs have been produced and the productivity rate per hectare is 12656 nuts in Gujarat. Further, it is also observed one coconut produces 150 grams coconut husk. So, if all coconuts are made available for generating fibre, the total potential of the state will be 55624.50 tons. Further, looking at all angles, the study

estimates 70 % coconuts can be brought for commercial use. Hence, the state have the potential to produce 38937.15 tons but at present only 280 tons are being produced. Hence, the percentage utilization is estimated at 0.71%.

- The price of one husk in West Bengal revolves around Rs 0.60 to Rs 0.80/- per husk. The trade has immense potential to generate trade of Rs 15.57 to Rs 20.76 crore in a year. But at the moment, it is generating a business in the range of Rs 11 lakh to Rs 14 lakh. Similarly, with regard to coir fibre, cost per kg of coir fibre is in the range of Rs 15 to Rs 22/- in West Bengal. The fibre trade has potential to generate trade in the range of Rs 58.41 crore to Rs 85.66 crore in a year. At present, the Coir fibre trade is in the range of Rs 42 lakh to Rs 61 lakh.
- As evident, the coir industry is not considered as a priority sector in West Bengal although it has immense potential to create employment and provide livelihood support to millions of people of the state. At present, there are 12 Coir units registered under Director of Industries (small scale). One Coir Cluster has been established in Dhanchreria area of South 24 pargana district, having the production of coir fibre, yarn, door mats etc. The Common Facility Centre attached to the Dhanchiberia Coir Cluster at Bagpota in South 24 Parganas district of West Bengal was already made functional. The CFC is planned to extend skill development training besides technical and marketing support in the coir sector. The Common Facility Centre, set up for Rs. 43.83 lakh, has facilities to produce about 300 tonnes of fine fibre a year for small-scale coir units and artisans. The product can be used to make value-added items including brush, mats and rubberised coir mattresses.
- The Dhanchiberia coir cluster was set up in 2005 with a central subsidy of Rs. 76.92 lakh under the Board's Scheme of Fund for Regeneration of Traditional Industries (SFRUTI) and with the State Government's assistance of Rs. 8.44 lakh. West Bengal produces 355.5 million nuts from an estimated 28,600 hectares under coconut cultivation.
- With regard to coir workers, the study observed, approximate 300 workers are working in coir industries and more than 80% are women. The state has manpower but there is a need to enhance their skill through adequate training. Average wages in coir industries Rs 120/- to Rs 170/- per day which is comparatively low in comparison to other states.
- West Bengal is known as the centre of handicraft and artisans. Domestic market is already open and need to make people aware about the potential of coir industry and coir products. There is a requirement to develop coir processing units first and good domestic market for rope and mattresses to make the coir industry viable in the state. The market situation for Coir fibre is at shrinking stage due to other cotton and plastic products. It is coir rope and pith which can recover the investment cost for Coir sector units.

- In the current situation, the market is very competitive. The cost of raw material, cost involved to convert in to fibre is huge, and the profit margin is very low, the market demand is poor. The other hard fibres are giving a tough challenge to the Coir Industry in the state. The study observed Coir Board should re-work its strategies to make coir industries / coir cluster economically viable in the state. The Coir Industry is getting challenge from other hard fibres. It is suggested that the Coir Board may work in close coordination with Government of West Bengal particularly the State Industry Department which acts as the nodal and implementing agency.
- The Coir Board may introduce husk collection mechanism in association with the state government. The government should conduct awareness programmes on utilities and commercial viabilities of coconut husks so that people start storing rather than wasting it thinking as a waste material. The government needs to establish a robust husk collection mechanism to encourage entrepreneurs to open small scale coir industries in the state. In order to promote coir industry in the state, the Coir Board should focus to establish and promote coir industries in two districts of the state in Phase-I. They are East Medinapur and South 24 Pargana. In later stage, the Board may move to other potential districts.
- The study concludes that in the light of prevailing situations especially the availability of raw materials, industrial climate, efforts made and the market situation analysis, the coir industry has potentials in the state provided husk collection mechanism is strengthened and value added products such as coir rope and coir pith are manufactured and sold.

## **TECHNO-ECONOMIC FEASIBILITY FOR ESTABLISHING COIR INDUSTRIES**

### **GUJARAT**

- The study observed in the light of prevailing situations especially the availability of raw materials, its quality, Industrial climate, efforts made to revitalize it and the market situation, a full-fledged coir cluster may not be economically viable at the moment. The Coir Board may act in close coordination with the state government and take initiatives to establish coir industries in Junagarh district in Phase-I and based on success it may be replicated in other districts of the state.

### **MAHARASHTRA**

- The state of Maharashtra is having five districts adjoining to coast line of Arabian Sea i.e. Raigarh, Thane, Sindhudurg, Ratnagiri and Kolhapur where Coconuts are produced. Among these five districts, Sindhudurg district is producing more number of coconuts than other districts.

- In the Phase-I, the study recommends the coir Industries may be promoted in two districts namely Sindhudurg and Ratnagiri. Areas such as Vengurla, Swantwadi and Kudaal in Sindhudurg carry immense potential and thus, industry may be promoted in these locations and later on it may be expanded to other locations and Ratnagiri district.
- The study further observed there is a possibility of setting up a Coir Cluster at Kudaal in Sindhudurg district where there is availability of raw materials, positive Industrial climate is emerging, and efforts are already made to install Coir cluster at MIDC Kudaal by the Government of Maharashtra.
- The Coir Board may think of establishing Husk Banks in Sindhudurg and Ratnagiri districts to collect husks for commercial use. The Coir Board may initiate discussions with the state government and establishes Husk Banks. In a nutshell, the study recommends the Coir Board should focus on establishing coir industries in Sindhudurg district in Phase-I and based on success it may move to Ratnagiri district in Phase-II.

## **WEST BENGAL**

- It is estimated that about 65% green coconuts is consumed at tender stage and unfit for industrial use. There are wastages during transportation from one place to other place. The husk is also not collected. The farmers are also not much aware on its industrial usage and economic benefit of coconut husks. Therefore, large quantity of husk is being utilized for fuel purpose.
- The focus of the state industrial policy is on Cotton and Jute and not due attention is being given to Coir sector. The jute industry which is much stronger in comparison to Coir dominates the market and produces quality product in a cheaper rate. They have lots of product diversification and market. The Jute fibre is available in the state and the products are more visible and known. Therefore, more people are engaged in Jute industry than the coir industry. The jute industry which is much stronger in comparison to Coir dominates the market and produces quality product in a cheaper rate.
- In view of the above the study recommends the coir industry should focus on collection and storage of husks and to promote this, the concept of husk bank may be introduced with the support of Coir Board. Further, the coir industries may be promoted in Medinapore and South 24 Pargana in the phase-I and in the later phase, it may be promoted in other districts.

## VIABLE COIR INDUSTRIES BASED ON TECHNO-ECONOMIC FEASIBILITY STUDY

- Based on the techno-economic analysis, the study recommended for establishing the following coir industries in the state of Gujarat, West Bengal and Maharashtra.
  1. Mobile Fibre Extraction Unit
  2. Defibring Unit with Conveyer System
  3. Coir Rope Unit
  4. Coir Spinning Unit
  5. Curled Coir Unit
  6. Coir Pith Unit and
  7. Coir Polymer Composite Board Unit

### ESTABLISHMENT OF MOBILE FIBRE EXTRACTION UNIT

- The techno-economic analysis recommends the mobile fibre extraction unit will be economically and technically feasible in the proposed districts.

Sr No	State	District
1	West Bengal	Midinapur South 24 Pargana
2	Maharashtra	Sindhudurg Ratnagiri Raigad
3	Gujarat	Junagad

### EASTABLISHMENT OF DE-FIBRING UNIT WITH CONVEYER SYSTEM

- It is recommended that de-fibring units may be established in the below mentioned districts covering three states. Cooperation is also required from different sectors to provide necessary facilities i.e., financial and technical etc to help the interested entrepreneurs for speedy and successful implementation of the project.

Sr No	State	District
1	West Bengal	Midinapur South 24 Pargana
2	Maharashtra	Sindhudurg Ratnagiri
3	Gujarat	Junagad

### Establishment of Coir Rope Unit

- The coir rope units may be established in the place where continuous power supply, communication facilities, raw material etc are available. Interested entrepreneurs may come forward to take up the technology for self employment and social-economic development of this region. Cooperation is also required from the coir board and state government to provide necessary facilities in terms of technical and financial.

Sr No	State	District
1	Maharashtra	Sindhudurg Ratnagiri
2	Gujarat	Junagad

*Note: It is not recommended for West Bengal at this stage*

### Establishment of Coir Spinning Unit

- The coir spinning units in Sindhudurg (Maharashtra), Midnapur & South 24 Parganas district of West Bengal is observed to be technically feasible and economically viable. It is recommended to establish in these of two states.

Sr No	State	District
1	West Bengal	Midinapur South 24 Pargana
2	Maharashtra	Sindhudurg Ratnagiri Raigad

*Note: It is not recommended for Gujarat at this stage*

### Establishment of Curled Coir Unit

- The study observed the demand and the production of curled coir will have to be increased in coming days. There is a requirement of curled coir for the existing rubberized coir mattress manufacturing units in these states as they are being transported from either Kerala or Andhra Pradesh. The industries may be set up in the following districts:

Sr No	State	District
1	West Bengal	Midinapur South 24 Pargana
2	Maharashtra	Sindhudurg

		Ratnagiri
3	Gujarat	Junagad

### Establishment of Coir Pith Unit

- Coir pith an organic manure gaining popularity world-wide in the wake of humidity's devastating experiences with chemical farming all the state in India. All three states having great potential of coir pith manure (C- POM) can be produced with the available raw-material. The requirement of organic manure is very high in these states and there is huge scope of commercial production of C-POM as meet the present day requirement. It is recommended to spread the awareness of organic manure and establish unit in coconut growing areas as well as near areas of de fibring units. The Coir Board may plan promote and to establish in these of three states.

Sr No	State	District
1	West Bengal	Midinapur South 24 Pargana
2	Maharashtra	Sindhudurg Ratnagiri
3	Gujarat	Junagad

### Establishment of Coir Polymer Composite Board Unit

- The coir polymer composite has great demand in market which is now-a-days gaining popularity as wood substitute for using as wall tiles, partition board, ceiling etc. The coir polymer composite board production unit in Sindhudurg (Maharashtra) and Junagad (Gujarat) is observed to be technically feasible and economically viable. Looking at the potential of the state, it is recommended to establish in these two districts of two states.

Sr No	State	District
1	Maharashtra	Sindhudurg Ratnagiri
2	Gujarat	Junagad

*Note: It is not recommended for West Bengal at this stage*

- Finally, it is suggested the Coir Board may consider establishing the above mentioned seven projects in the three states. It is further recommended that the Coir Board with the support of respective state government (s) may invite interested entrepreneurs to come forward to take up the trade for self employment and socio-economic development of the region / state. Cooperation is also required from different sectors and players including the Coir Board and the State government to provide necessary facilities *i.e.* financial,



technical etc. to help the interested entrepreneurs for speedy & successful implementation of the project. In the later phase, the Board may consider expanding the coir industry into new areas and introducing new technologies to produce value added products.

### **Other Natural Hard Fibres: The Prospects**

- India has a presence of a number of other natural fibres however the same have not been fully commercially exploited. India does not have a significant presence in other natural fibres, though ramie, flax, linen are used by Indian textile industry. Leaf fibres such as agave (sisal) and fruit fibres such as coconut and palm and banana and pineapple fibres are yet another group of natural fibres that have huge potential. The natural fibres industry has faced increased competition, since the development of synthetic fibres in 1960s. The recent global economic slowdown has adversely affected the demand for other natural fibres. Given that this industry provides employment to millions of people in the country, especially the small scale/marginal farmers and processors, measures need to be undertaken to ensure growth for the industry in the medium to long term period.
- India has large resource of natural fibres such as Banana, Sisal, Coconut, Pineapple, Jute etc. Out of all available fibres, the natural fibres such as Jute, Sisal, Banana, Pineapples and Hemp have been identified which hold potential for the state of Gujarat, Maharashtra and West Bengal. The rationale for choice of these fibres is as follows:

**Use in textile segment:** The primary criterion for the selection is the fibres should be used in the textile industry (convertibility into textiles).

**Easy availability:** These fibres/plants are cultivated in India in fairly abundant quantity, and therefore are relatively easier to exploit for commercial purpose. Examples- Banana, Pineapple, Jute and Sisal.

**High growth potential:** The selected fibres are currently being imported into India in a reasonably significant amount. Thus, this signifies domestic demand for these fibres, and replacement of the high imports is an opportunity. Examples- Hemp, Banana, Pineapple, Jute and Sisal.

**Neutrality to other crops:** These crops are already being largely grown, and thus do not pose a threat to acreage under the other crops and will use existing biomass.

**State participation:** Active state participation is already present in these selected fibres, with considerable institutional support also available, thus allowing policy intervention to yield maximum benefit within a short period.

**Existing human resource:** Traditional knowledge and existing human resource are already available for chosen fibres at local levels.

- The above mentioned fibres along with Coir have properties that place them in the luxury textiles and handicraft market, automobiles and construction industry and in many new areas especially in a time when protection of the environment is the order of the day. Therefore, looking at the state potentials, economics of trade and employment opportunities, we recommend Jute, Sisal, Pineapple, Banana and Hemp hard natural fibre based industries may be promoted in the states of Gujarat, Maharashtra and West Bengal.
- The study further tried to assess the impact of other natural hard fibres on Coir Industry. The findings reveal in Indian context, the position and prospects of the Coir Industry is unlike to be affected due to the presence of other natural hard fibres. The findings indicate the coir industry will not face competition due to two major facts: (a) Coir is cheaper in comparison to other natural fibres (b) value added products produced are distinct and do not invite mutual completion. The major competition that the coir industry may face is only with regard to handicraft items.

#### **Cost-wise Comparison of Coir with other hard fibres**

The relative cost wise comparison of coir products with other hard fibres are given below:

**Cost wise Comparison of Coir product with other Hard Fibre products**

<b>Fibre Name</b>	<b>Relative Price</b>
<b>Coir</b>	100%
<b>Flex</b>	200-600%
<b>Hemp</b>	240-700%
<b>Jute</b>	200%
<b>Sisal</b>	240-280%
<b>Abaca</b>	600-1000%
<b>Cotton</b>	600-900%
<b>E Glass</b>	520-600%

- As evident from the above table, in terms of price, the coir industry continues to be cheaper and has the capacity to generate immense employment. Hence, other natural hard fibres are not potential threat to the coir industry.

## Action Plan for Selection of Natural Fibre Industry for the state of Gujarat, Maharashtra and West Bengal

- Selected fibre centric approach should be initiated for promotion of the selected fibres in a localized format, and allow the development of critical mass for these focus fibres. This also allows for most efficient utilization of funds, easy monitoring of the progress made and ensures better rate of return on investments made. The leading potential fibre-producing states for each of the fibres were identified and based on intensity of cultivation (area of the fibre to total area), the states for each fibre was short listed.
- Based on the current potential of production and market, the chosen states for the selected natural fibres under this approach are as follows:

Other Natural Hard Fibre	Potential State
Banana	Maharashtra and Gujarat
Pineapple	West Bengal
Sisal	Maharashtra and West Bengal
Jute	West Bengal
Hemp	Maharashtra and West Bengal

- This approach is specific for each selected fibre, as the selected fibres are either already cultivated in large quantities (Banana, Jute and Pineapple) or are available, but not commercially exploited or needs to be promoted (Sisal and Hemp). Based on the above implications, the study divided these five selected fibres into two distinct categories for undertaking measures for their respective holistic development, the categories are:

### Approach for Establishing Hard Fibre Industries

Intervention for establishing Industries	Natural Fibres
Phase-I	Jute, Banana and Pineapple
Phase-II	West Bengal

- In the first phase, Jute, Banana and Pineapple fibre based industries may be promoted and hard fibres such as Sisal and Industrial hemp may be promoted in Phase-II
- As understood, other natural hard fibre industry has immense potential in the country. There is a need to elaborate on the concerted interventions in policy areas for augmenting investment, support mechanisms on both fiscal and non-fiscal front, to attain the growth and competitiveness of this labour intensive manufacturing sector. Also, a mechanism

needs to be defined which facilitates the required fibre availability to meet the growth targets of the textiles & garments sector. The policy is required to provide the necessary balance between the initiatives of the producers and the benefits of the consumers, across the various segments of the sector. There is a need to improve the overall functioning of the natural fibre industry by improving the technology, and fastening the manufacturing process along with aiding the provisioning of ancillary facilities.

- Based upon real available knowledge and data, potential margins for a sub-sector involving Natural Fibers are elusive at this moment as related to India, specifically. However, the growth of this business activity at both the extraction and weaving ‘tiers’ in other countries would suggest businesses engaged in this activity are enjoying a healthy gross margin. Reports from India, for example, suggest a range of 18-20% for mature business ventures. In turn, if the next ‘tier’ is able to pay extractors prices which allow for a 20% gross margin; assumption would lead to the conclusion that, in turn, weavers are also enjoying at healthy return for their efforts.

## **ACTION PLAN FOR ENHANCING NATURAL FIBRE PRODUCTION AND TRADE**

It is evident from the technical study on Natural Fibers that the country is rich in the availability of Natural Fibers from various sources and among them Jute, Sisal, Banana, Hemp, Pineapple and Coconut are major sources of raw product awaiting effective utilization. Jute, and Coconut are already in use, although in a very limited scale; but Banana and Pineapple which are widely available throughout the country are not only unused but presents a huge environmental threat by polluting soil and water; and adds to the cost of production experienced by producers of Banana and Pineapple.

## **STRATEGY**

Despite huge availability of raw materials throughout the country, India is far behind in productive use of these valuable natural fibers from Banana, Pineapple, Sisal and Hemp. The same trend is also visible in the context of Gujarat, Maharashtra and West Bengal. Therefore, promotion of natural fiber-based industries in India requires interventions from the bottom of the value chain to the end users. A clear Strategy which can be implemented and would enable success would be an essential prerequisite.

### **Strategy – I Establishment of strong Value Chain System**

Most of the manufacturing units have small capacities and low manufacturing efficiencies, so there is a need to facilitate rapid growth and modernization of existing firms with potential for success. In addition, it would be necessary to attract large scale investment for manufacturing world class facilities for realising the Prime Ministers vision “Make in India with “Zero Effect;

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Zero Defect” at each level of the value chain.

### **Strategy – II Attract Investment into the Coir and other natural hard fibre Industry**

The key to getting investments on this scale is for returns on investments to appear attractive enough. Investments need to be adequately incentivised.

### **Strategy – III Enhancement of Skill, Quality and Productivity**

For achieving the production capacities envisaged, additional skilled manpower would be needed. Productive and skilled manpower is the only way to achieve domestic and global competitiveness and to derive the full benefit of the demographic and wage advantage that India would clearly have over the next decade. The objective should be to achieve average per man hour, per machine output in terms of quality and quantity of the levels prevailing in China over the next three to five years.

### **Strategy – IV Implementation of Labour Laws**

The regulatory framework for labour with multiplicity of laws and reporting requirements with onerous transaction costs is one of the major reasons for the inability of the sector to expand and acquire global scale. This is specifically true for the labour intensive segments of the value chain.

### **Strategy – V Innovation and R&D**

The Indian Coir industry and other fibre industry are having its traditional products. India is yet to make its presence felt on the global stage with brands, chains, products and processes. Without innovation and R&D this would not happen. CCRI and industry need to work in partnership for this transformation. Business process innovation, building brands and creating designs should be the immediate priority.

### **Strategy – VI Ensure Institutional Support**

The growth of any industry depends on the institutional support, people who backs the industry. In majority of states, natural hard fibre based industries are not in the priority list of the state government (s). The contextual reality leads to poor motivation among the people who work in the natural fibre based industries. Therefore, adequate mechanism may be planned to institutionalize the support mechanism so that stakeholders including investors and bankers come forward to promote the industry.

### **Strategy – VII Establish linkage with other government programmes / schemes**

Sustainability of the sector will largely depend upon the hand-holding support of the government machineries. Adequate steps may be initiated to establish linkages with other government programme and schemes such Freight Subsidy Scheme of Ministry of Commerce, Government of India, Raw Material Distribution Scheme of NSIC, Market Development and Marketing Schemes of Marketing Federations, various state governments and Government of India and

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linkages may be established with the schemes of Ministry of MSME, Industry, Commerce and Agriculture.

### **Strategy – VIII      Integration with State Government**

Realizing the employment and value addition potential of the coir manufacturing sector, Some State Governments have come out with their efforts to attract investment in specific sub-segments and specific areas within the State. This is a positive development for the sector. Genuine and constructive integration/partnership with the State Governments is essential.

### **TECHNICAL PLAN**

Despite huge availability of raw materials throughout the country, India is far behind in productive use of these valuable natural fibers from Coconut, Banana, Pineapple, Sisal and Hemp. The same trend is also visible in the context of Gujarat, Maharashtra and West Bengal. Therefore, promotion of natural fiber-based industries in India requires interventions from the bottom of the value chain to the end users.

With regard to Coir Industry, we have already discussed the details of coconut production, production of husk, its utilization and the status of Coir Industries in the states of West Bengal, Maharashtra and Gujarat in previous chapters of this report. As it is understood, presently, the Coir Industry in three states is disintegrated and not adequate steps have been taken up by the State Government (s) to consider it under thrust industry. The study clearly reveals there are very few industries that are producing Coir fibre, Mats and Piths in these three states. The husk collection mechanism is also very poor despite huge potential of collection. There is no value addition in packaging, marketing, product quality although huge market is available and can be tapped. In a nutshell, the coir industry is without having long term vision, policy and financial support. The study suggests before taking up the task of promoting coir industries in the three states, the following factors may be looked into by the Coir Board:

#### **1. Establish technically-commercially viable industries and promote entrepreneurship**

Technically viable projects may be established in each of the states. The availability of land, raw-material, market potential, availability of trained manpower, investment climate and priorities of the state government may be taken into consideration while establishing industries. Viable locations may be identified before putting up industries and adequate capacity building and awareness programmes may be conducted to trained manpower and provide requisite input on commercial viability of the projects so as to attract people to come forward to participate / invest in the sector. The study has clearly identified district specific coir industries in the three states and the recommendations may be adopted to make a humble beginning towards sustainability. Similarly, with regard to other natural hard fibres, banana, pineapple, sisal, jute and industrial hemp fibre industries are recommended and the potential districts in each of the three states have been identified and the recommendations may be adopted.

## **2. Set-Up New Coir Industries**

Although the state has abundant raw-materials (coconut husks) but number of defiber plants and coir industries are comparatively very less. The private participation in coir industry is also meagre. In Gujarat, although coconut is abundantly available, but there are very few functional industries in the state. Therefore, initiatives may be taken by the Coir Board with active support of the state government to establish more number of coir industries in the state based on their viability.

## **3. Up-Gradation in Existing Technology**

The existing industries in West Bengal and Maharashtra need up-gradation in existing machines and equipment's. Apart from Technology, there must be thinking on the repair and upkeep of the existing machinery and there should be a maintenance department to repair the defunct machines.

Coir pith generated during the process is not utilized and the technology of coir pith composting may be incorporated and the composted coir pith may be utilized locally for nursery in green house for cultivation of vegetables. The coir pith composting technology can be provided from Coir Board and the green house cultivation activity may be taken up with agricultural / horticulture department.

## **4. Setting-Up Integrated Fiber Unit**

There is pretty good feasibility for setting up integrated fibre unit because of two reasons. The first is availability of raw husk and local market. In order to achieve this, the existing machinery and organisational set up needs to be strengthened. Technology-upgradation may be undertaken in existing industries to ensure quality in fiber extracted. In addition, the existing supply chain system needs to be strengthened and supported through various incentivised schemes. In the first phase, integrated fibre unit may be attempted in Maharashtra and subsequently an integrated unit may be established in Junagarh, Gujarat.

## **5. Cluster Approach to promote livelihood and economic development**

In each of the state, the Coir Board in coordination with the State Government may undertake 5-year pilot program under Cluster Approach' to promote livelihood and economic development of suggested fibres at local levels. The pilot program may be carried out in suggested geographical areas in the focus state for each fibre. The rationale behind the pilot project would be to develop and replicate the best practices that can be replicated on pan-India basis. This would accelerate the income, employment opportunities and value addition at local levels.

## **6. Provide higher Capita Subsidy**

Considering the large availability and strong potential for future growth, the government may provide capital subsidy of **50%** to the industrial investors as incentive for setting up the industry to consume natural fibres (other natural fibres as raw material). It also recommends that the government may consider for providing support for setting up feeder units for large industries for commercial feasible exploitation of natural fibres. Research and Development into improved and efficient extraction and processing of fibres with low cost, appropriate technology, as well as yarn spinning techniques and technology, keeping overall global pricing as well as minimum wage issues in mind may be given adequate focus.

## **7. Demonstration and Production Programmes, Skill-Upgradation Training Programmes and Trainers Training Programme**

The Coir Board with the support of the State government may depute skilled manpower to get training from NCDTC or CCRI, Kalavoor in Kerala to get training in all diversified products. These persons after getting training may act as Master Trainers at the state level.

The Skill-Upgradation Training Programmes (like Mahila Coir Yojana) may be conducted by the government agencies as well as private organizations. The Board may prepare a plan to training at least 300-400 artisans in a year's time in one state. The State Government may be taken in loop to provide infra support for these training courses. The Coir Board through the State Government may conduct Demonstration and Production programmes with the help of Mobile Coir Fiber Extraction Machines at the Gram Panchayat level with the help of SHGs, NGOS, Artisans and Co-operatives.

## **8. Capacity building / training**

The government may conduct specialised technical and commercial training (short term and long term) with the help of international trainers from the countries such as Philippines, Indonesia, Thailand, China, Tanzania and others. Specialised and continuous training programmes should also be devised with enhanced financial limits to attract the best trainers. The government may consider procuring technical services (training and management) from best practice states / neighboring countries such as: (a) extraction and processing of fibers, (b) spinning and weaving in Automation as well as traditional processes, (c) varieties use of fibers in product development like constructions (Road, Building & Embankments), Automobiles, Textile and Handicrafts sectors and (d) product design and marketing including e-commerce etc.

## **9. Formation of Industrial Co-Operatives / Self Help Groups**

The study gathered no sincere efforts have so far been made to develop Industrial cooperatives to promote the coir industry in the three states. Similarly, no efforts have so far been made to strengthen Self Help Groups to involve in coir sector. In all three states, cooperatives have played a significant role in development. For example, Milk Federations in Gujarat and



Maharashtra and Jute cooperatives in West Bengal has played a key role in promoting the sectors. Therefore, cooperatives may be attracted to engage in coir and other hard fibre based industries for sustainability and encouraging more women participation. Looking at the existing scenario, there is good potential to promote women cooperatives / SHGs and the activities of the groups can be integrated with the apex body / agency at Block / district / State level.

#### **10. Creation of necessary infrastructure**

With an aim to create the necessary infrastructure for the promotion of the fibres, the study recommends the following: (a) Facilitate the creation of infrastructure facilities at the clusters especially, Common Facility Centres (CFCs), treatment and dyeing facilities, raw material banks, resource centre on pilot basis to ensure efficient and standardized manufacturing process to enable the achievement of export growth of up to 20% per annum in addition to catering to increasing domestic demand, (b) Development of feeding units for the supply of processed raw materials for the large industries in long run, (c) Conversion of waste arising from manufacturing process into value added composites and (d) Procurement of infrastructure and management services.

#### **11. Strengthening of Agencies and awareness campaigns**

It is important to work out a long term perspective plan for developing coir industries in these three states. The study team has found that there are small groups of farmers, traders, entrepreneurs, sales and marketing persons who are entirely disintegrated and unaware. There is a need to bring them to a common platform and give them a vision and recognition. The Coir Board may generate awareness among the coconut farmers about the potentials of coir fibres. The study findings indicate, many coconut farmers are unaware about value added coir fibre products and the economics of trade.

#### **12. Quality and Productivity Improvement**

Quality and productivity improvement in the sector are of utmost importance for global competitiveness. Credible mechanisms for assessing levels of quality and productivity in segments of the supply chain as well as in individual enterprises are needed. It is recommended that Coir board may develop a credible mechanism for assessing and tracking improvements in quality and productivity levels in the sector.

#### **13. Health Insurance of Workers and Artisans**

In order to provide health cover to the workforce of the sector, it is recommended that there may be universal coverage of all workers; regular, contract, employees of micro and small enterprises, artisans and workers under the Rashtriya Swasthya Beema Yojana (RSBY).

#### **14. Review Labour laws**

In order to attract large scale investments and bring the Indian sector at par with other competing

countries, there is a need to review the labour laws to make them investor and labour friendly. The regulatory framework for labour should be fully in compliance with India's ILO obligations.

### **15. Establishment of R & D Fund**

The Coir board may consider for establishing a R & D Fund which could be used to finance R&D for specific needs identified by industry. Individual R&D projects should also have some industry funding which could vary depending on the nature of the project. The R&D project may be awarded after invitation of bids to individual institutions, consortium of institutions or individuals. Modalities may be worked out on the fund in consultation with the industry.

### **16. Standardization of Process and Product**

Despite being of the largest consumer markets in the world, there is no standard design sizing system for process as well as product in coir and products of other natural fibres. Process and products may be standardized with the consultation industry expert, CCRI and Coir board etc.

### **17. Collection of Husk**

Coir yields have hardly improved over the years. In order to provide better returns to the farmers and improve the productivity of the industry it is imperative to increase collection of husk. The coir industry has limitations due to non-availability of husks. The government may consider establishing husk banks either directly owned or in SHG or cooperative mode. Adequate number of godwns may be facilitated for storing husks. Besides, efforts may be taken to provide freight / transport subsidy for carrying coconut husks.

### **18. Improvement in Retting Process**

Quality of Coir fibre is dependent largely on the care given during the retting process. In the absence of clean flowing water, retting is done in stagnant water in ditches and ponds where water is used for repeated retting. This results in fibre of inferior strength and darker colour. Alternative retting methods which have been developed by various coir research institutions are yet to gain acceptance by farmers and put to large scale use. It is recommended that the projects should be taken up in producing areas in Common Facility Centre mode deploying new retting technologies to fine tune these technologies and practices so that their usage can be scaled up rapidly in a sustainable manner.

### **19. New Product Design and Development**

New product design and development is an urgent requirement for the coir sector in order to reduce its dependence on low value added products of sacking and hessian. For this it is recommended that design institutes such as NID and NIFT be engaged to develop new and better coir products which have the potential of greater success in the market without subsidies.

## **20. Conduct Life Cycle Analysis**

In absence of Life Cycle Analysis, its market entry in several international markets has been hindered. It is recommended that Coir Board should finance and conduct Life Cycle Analysis of Coir in line with requirements of various markets.

## **21. Brand Building and promote Promotion**

Special efforts should be made for attracting investments for manufacturing units under the Prime Ministers Vision of “Make in India“. Brand India needs to be promoted as “Make in India, Made in India”. Within the overall umbrella of Brand India, specific product segments would need to be promoted in target markets in consultation with exporters and industry experts.

## **22. Aggressive Marketing of Products**

A strategy for promotion of a range of Coir products in the domestic as well as in the international market may be drawn up. With success in implementation it may be feasible to phase out the mandatory use of Coir mats, carpets and bags. Aggressive marketing measures need to be undertaken for promotion of products made of other natural fibres and for the same recommends the following: (a) special International Marketing programme should be launched for 3–5 years, (b) identification/earmarking of most potential international markets, (c) special theme settings in the overseas shows to attract overseas buyers/ customers, (d) participation in international shows focussing on Other Natural Fibres and (e) thematic display at textile and apparel exhibitions. As a strategy, to promote coir industry, the government may consider the followings:

### **- Establishment of Sector Specific Buying House**

Success in apparel industry in countries like China, Bangladesh, India, Vietnam, and Srilanka are vastly attributable to the effort of buying house concepts in this sector. The same “buying house” concepts may be used in coir sector as well. Therefore, establishing separate coir buying house will be one of the new scope to successfully promote coir sector and its products.

### **- Initiative to open warehouses for Products at select markets**

Warehouses should be opened specially for products in key markets including US, UK and other Countries who imports coir and allied products. Along with other marketing offices, warehouse can be used to stock standard products which can be finished in respective locations and supplied to customers much faster. For example, shopping bags of standard size can be stocked in the warehouse and on receiving order from customer, the bags can be printed or customized according to customer requirements. This will help in reducing long lead times faced by exporters. In conclusion, coir marketers are suggested to use its environmental friendliness and ecological helpfulness for man-kind in developing communicational means and value propositions. They can also blend other forms of eye-catching marketing means to establish and

create larger product awareness. e.g. Kiosk ads, free standing bill board and road shows are now widely spread forms of neo-marketing.

### **23. E-Commerce Platform**

There is a vast scope for coir sector to leverage the attractive opportunity provided by the e-commerce platform as it will not only provide a bigger platform to showcase the Indian heritage but will also help in direct marketing. Internationally e-commerce has emerged as a highly successful and efficient business model. It is recommended that active coordination should be done with various large international online marketing platforms such as eBay, Amazon, etc. to promote exports of Indian products through them. It is expected that direct e-sales may result in higher income and exhibit greater demand which may result in improvement in livelihood of the artisans.

### **24. Conducive Fiscal Measures**

The study recommends the following fiscal measures for other natural fibres: (a) 100% exemption on custom & excise duties on the import of plant & machinery, consumables, embellishments on natural fibres for enhancing the quality, (b) 50% capital subsidy for entrepreneurs promoting Other Natural Fibre based industries, (c) Tax holidays for manufacturing and exporting units for 10 years and (d) Interest subsidy for establishments (like TUFs)

The *overall result* of above interventions would be:

- Innovation and promotion of Natural Fibers based new product chain for domestic and export markets.
- Creation of new source of employments especially for the rural women and adolescents through available raw materials and cultivation of new raw materials such as Sisal and Hemp
- The availability of raw materials throughout the country will result quick expansion of Coconut, Banana, Jute and Pineapple fiber-based rural industries.
- Success will facilitate growth of other agro-based fiber products resulting in new opportunities for more income and employment for the rural people.
- Efficient management of agricultural wastes and environmental protect

