PRODUCT DEVELOPMENT AND DIVERSIFICATION

2001-02	Samples of coir ply board were developed. Development of a camouflage fabric using coir for prospective defence application was conducted. Novel coir products were produced from yarn on blending the coir fibre with other plant fibres like sisal, banana and jute. Decorative products were made out of coir yarn dyed with Nucifix dyes. 	

YEAR	ACTIVITIES	ACHIEVEMENTS
	A ready to use lawn (Cocolawn™) was developed using coir geotextiles, coir needled felt, coir pith and coir pith organic manure (C-POM). This lawn can be rolled up and transported to different places. The open weave of the supporting coir fabric ensures complete drainage of the excess water and helps support of roots of the grass. The typical application of cocolawn as ground cover, roof cover, cycle path, footpath and establishing vegetation in denuded areas. Cocolawn™ is developed on a soil less medium.  Studies on testing of sodium salt of lignosulphonate were continued in collaboration with CECRI, Karaikudi. Under the collaborative project with Kerala Agricultural University, Mannuthy in Kerala on application of coir geotextiles, Coir Bhoovastra was laid out as per the technical specification on the experimental plots and observations on the stabilization of slope, degradation of coir geotextiles etc. were taken periodically.  The required quantity of coir pith organic manure (C-POM) was provided to the different research stations of Kerala Agricultultural University, Mannuthy under the collaborative project with Kerala Agricultural University for testing the bio -efficacy of C-POM. Under the collaborative project with National Institute of Design, Ahmedabad on design intervention, different samples of coir materials promoted as camouflage materials for the defence establishments were prepared and given to Army establishments for testing. Created a National Institute of Design Cell (NID Cell) at CCRI for providing design support to trade and created a Coir Cell at National Institute of Design where the products made out of the design intervention were displayed. Under the Collaborative project with Indian Plywood Industrial Research and Training Institute, Bangalore, initiated work on making moulded coir products.	

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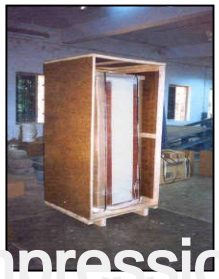
	Collaborative projects on the application of coir geotextiles was initiated with Border Roads Organization in their projects SEWAK, PUSHPAK, SETUK. Collaborative project with Tata Energy Research Institute, Delhi was commenced to evaluate the use of coir fibre/pith as a fuel.	
2002-03	A collaborative project with Indian Plywood Industries Research and Training Institute (IPIRTI), Bangalore is in progress to develop gift and novel articles from coir needled felt and phenol formaldehyde resin. A camouflage netting of 2 inch mesh was produced under the Desert Green Project in collaboration with the National Institute of Design, Ahmedabad. Fine blended yarn using coir,sisal, banana fibres in different proportions were produced with a runnage of 800 to 1000 m/ kg. 2 dissemination workshops on coir and natural fibre blended yarn were conducted as part of the UNDP project.    36 different sample products were manufactured from blended yarn of fine quality such as carry bags, shopping bags, boxes and corridor mats. The Central Electro Chemical Research Institute has recommended the use of Sodium Lignosulphanate as an expander in lead acid batteries. The duration of all the 4 projects in collaboration with Kerala Agricultural University was extended for another 6 months from November 2002 so as to validate the findings and arrive at a logical conclusion.  Under the collaborative project with the Indian Institute of Packaging, Mumbai the coir polymer composite boards were converted into different kinds of packing materials like fibre drums, collapsible packing boxes etc. 	1.Development of ven-etian blinds with single ply coir-cotton blended yarn. 2. Development of fine blended yarn of runnage 1000 m/kg from coir, sisal, banana fibres. 3. The Sodium ligno sulphonate extracted from coir pith was found to be suitable as an expander in lead acid batteries.

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2003-04	Completed the collaborative project with IPIRTI, Bangalore. Field demonstrations in laying of coir geotextiles at Silchar in Assam and at Kohima in Nagaland were conducted in association with Border Roads Organisation. An embankment protection was carried out in association with the Forest Research Institute, Gwalior.  4000 sq.mtr.H2M6 was laid over the embankment of NH 53 at 23.10 km. from Silchar for soil erosion control and 2625 sq.mtr.H2M8 and 30 nos.of cocologs of 30 cm.diameter and 5 mtr.long were laid along the two terraces over the road slope embankment on NH 39 Kohima –Maran road at 180.30 km.  12.Collaborative project with Banaras Hindu University on enhancing the longevity of rubb-erised coir mattersses for use in hospitals 13.Collaborative project with Spices Board on the application of coir geo-textiles in vanilla cultivation. Conducted on the spot inspection of the site at Neendakara Fisheries Division for the possibility of using coir geo-textiles for controlling the wave velocity near the fishing harbour and observed that coir fenders can be hanged along the concrete slabs at the harbour for protecting the boats from hitting the shore. Woven 59 sq.mtr.of matting on jacquard loom, 10 sq.mtr.of pile carpets on pile wire loom and 26 sq.mtr.on semi mechanised loom. Developed 3 designs with coir/sisal blended yarn suitable for wall hanging. Developed 71 rope mats with Anjengo yarn of 4/8 strands as weft and blended yarn from coir /sisal fibres in the proportion of 80: 20 having a runnage of 1000 m/kg.as warp.	1. Field demonstration of coir geotextiles for the protection of an embankment at Forest Research Institute, Tapovan, Gwalior, at Silchar, Assam and Kohima, Nagaland.

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	Venetian blinds for window screens were evolved in 10 patterns from doubled cotton thread 17 NF as warp and blended yarn of coir/sisal as weft and braiding threads with the brooms (Eerkkil). Another novel product was developed using Eerkkil as weft and blended coir/sisal yarn as warp. Woven 6 patterns of M4A4 matting and 7 looped tile mats.  Collaborative project with RV-TIFAC (a collaborative venture of RV College of Engineering, and Technology Information Forcasting and Assessment Council), Bangalore on the development of coir composites for making light weight doors. Collaboration with PSG College of Technology, Coimbatore, on the development of technology for making particle boards out of tender coconuts	
2004-05	   Manufactured 10 Nos. of creel mat with rope inserted design, 13 looped tile mats, 30 window curtains and 4 fold screens with the blended yarn of sisal and coir fibre. 20 Sq.Mtrs. of jacquard matting and 22Sq,Mtrs. of matting on semi mechanized loom and 10Sq.mtrs. pile fabric on pile wire loom were produced The application of coir geotextile in pavement road as interlays is trying at CCRI. The work has been entrusted with CPWD. An experiment was conducted inside the campus road by re-tarring the road with coir geotextile as a reinforcement. The experiment was a success and it was decided to carry out the experiment in the entire campus road.	1. Conducted a field demonstraction on application of coir geo textiles in pavement road. 2. Guided 3 project students in undertaking their projects.

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	 Road cunstruction using coir matttings – KSEB, Kutyadi The Coir Board has undertaken a project with KSEB for the application of coir geotextile for the construction of pavement road at the Kuttiadi Augmentation Scheme at Kuttiadi, Kozhikode. Coir Needle Felt of size 1000 gm/sqm. was used as interlays to reinforce the soil and 1000 sqm. needle felt was supplied by CICT, our Bangalore unit for the project. CCRI has arranged for the manufacturing of coir yarn mats & matting with retted fibre, green husk fibre without any treatment and green husk fibre treated with castor oil emulsion for a comparative study of the properties of the products. 12 varieties of coir yarn of Anjengo, Vycome and Alappat have been produced. mesh-matting samples manufactured with blended yarn of coir and sisal at the ratio of 80:20 produced for experiment in constructing a green house as in the Spices Board. Fibre mat les were manufactured with raw silk replacing coir fibre tufts. Senior Scientific Officer (PD) has conducted the site assessment for application of Coir Geotextile at IIM, Kozhikode, DRDA Coimbatore and BRO Kohima &Manipur. Arranged for the supply of R&D display products to National and International fairs and seminars. Organised pavilion for the IHGF –Autumn 2004 at Pragathi Maidan, New Delhi and at Pollachi. Display of novel products made out of coir fibre, yarn and rope were arranged in the Golden Jubilee Celebration.	

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	Project students were guided to complete the projects in the following areas "Blended yarn from coir & allied fibres and its properties"-December 04 submitted to University of Kerala. "Light weight fabric with blended yarn and products out of the fabric"-December 04 submitted the Calicut University. "Spinning of coir yarn on different machines/equipment"- December 04 submitted to National Institute of Design, Ahmedabad. Efforts were put on for the blending of coir with other synthetic materials to enhance the characteristic and work of the final product. Development of gift and novel articles from coir needled felt was another work, which was finished in collaboration with IPIRTI, Bangalore. The project has been completed during the year and the final report has been sent to H.O. Development of structural composites were tried at the polymer division of the institute.	