Technology Mission on Coconut- an overview

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Government of India has been treating coconut as an oil seed of tree origin and has been fixing Minimum Support Price (MSP) since 1986 to protect the interest of coconut growers. Consequent on the globalization of the Indian economy, the coconut industry has been facing various problems due to the liberalized import of cheaper substitute oils and also due to the sudden outbreak of various pests and diseases and resultant problems. In this context, the Government of India launched Technology Mission on Coconut to make coconut cultivation and industry globally competitive and to ensure reasonable returns to the farmers.

The goals of the Mission are to establish convergence and synergy among ongoing programmes to bring in vertical and horizontal integration, to ensure adequate, appropriate, timely and concurrent attention to all the links in production, processing, product diversification and consumption chain, to maximize economic, ecological and social benefits from existing investment and infrastructure and to promote economically desirable diversification and value addition to generate skillful employment and to disseminate technologies using participatory approach through demonstration and promotion to address the gaps in a mission mode.

Coconut Development Board is implementing this Central Sector Scheme, Technology Mission on Coconut since 2001-02 as part of the ongoing programmes for the integrated development of coconut industry in India and to address serious problems faced by the coconut industry in a strategic manner. The objectives of the scheme are development of new value added coconut products and by-products by research, bring these value added product to commercial production by assistance to promising entrepreneurs adopting these technologies, providing assistance for controlling of specific disease/pest in any specific area including development of technology for controlling of such diseases/pests to ensure undisrupted supply of raw materials to the coconut industry for the production of value added products and by-products and developing and promoting market for such newly developed value added products and by-products including traditional products (ball copra, copra and oil) by research, surveys and brand promotion.

The Mission aims at diverting the use of raw coconuts (mature/tender) from traditional products (ball copra, copra and oil) to new value added coconut products so that these new value added coconut products could compete with the traditional products (ball copra, copra and oil) in controlling and stabilizing the prices of raw coconuts (mature/tender) for providing the competitive and remunerative prices to the farmers.

Development and adoption of technologies for processing and product diversification

The programme includes development of new products through research, import of technology, their demonstration and support to industry. Technology can be developed through any institute having capability in both public and private sectors. For development of technologies, 100% of the project cost limited to Rs.75 lakhs for Government institutions and co-operative societies and 75% of the project cost limited to Rs.35 lakhs for NGOs, individual entrepreneurs and other private research organizations will be provided by the Board. For acquisition, training and demonstration of technologies, 100% of the project cost limited to Rs 25 lakhs for all Government institutions and co-operative societies and 50% of the project cost limited to Rs 10.00 lakhs for NGOs, individual entrepreneurs and other organizations will be extended and for adoption of technologies back-ended credit capital subsidy limited to 25% of the project cost not exceeding Rs.50 lakhs for NGOs, individual entrepreneurs and other organizations would be provided by the Board.

Market Promotion

Under TMOC, financial assistance is extended to the tune of 100% of the cost limited to Rs.25.00 lakhs for government agencies and cooperative societies and 50% of the cost limited to Rs.6.00 lakhs to Federation of CPS(FPOs) and Rs. 15.00 lakhs for NGO's and private institutes for the market promotional activities

So far, 687 projects received from various institutions / enterprises were sanctioned with a total financial assistance of Rs.235.94 crores. Against this, an amount of Rs. 122.522 crores has been released to various State Governments, Research Institutions, Co-operative Societies, entrepreneurs, etc. for development of technologies for new products, adoption of these technologies for product diversification and by-product utilization, productivity improvement through management of pests and diseases and market research and market promotion.

Under the TMOC scheme 377 coconut processing units with infrastructure facilities worth Rs. 47625.52 lakhs for processing 2391.2 million nuts per year and 8,48,172 metric tones shells per year have been established by providing a financial assistance of Rs. 5818.71 lakhs as detailed in the table:

Sl. No.	Name of the Coconut Products	Number of Units established	Capacity
1.	Tender Coconut Water Preserving and Packing Units	25	Processing of 138.6 million nuts per year
2.	Desiccated Coconut Powder Making units	91	Processing of 909.45 million nuts per year
3.	Virgin Coconut Oil Production units	44	Processing of 161.85 million nuts per year
4.	Coconut Chips Making Units	5	Processing of 1.41 million nuts per year
5.	Vinegar Making Units (raw material mature coconut water – a waste in copra making)	6	Processing of 19860 kilo litre per year
6.	Coconut Milk and Spray Dried Coconut Milk Powder Making Units	2	Processing of 16.5 million nuts per year
7.	Coconut Shell Powder Making units	17	Processing of 60960 metric tones Shell powder per year
8.	Coconut Shell Charcoal units	21	Processing of 39204 metric tones Shell Charcoal per year
9.	Activated Carbon Making units (raw material coconut Shell Charcoal)	29	Processing of 74,400 metric tones Activated Carbon per year
10.	Neera & Neera products	6	Processing of 11,400 kilo litre per year
11	Flavored Coconut Juice	1	1.5 Million Nuts per year
12	Packing of coconut water	1	900 kilo litre per year
13	Other Traditional Products making Units (Ball Copra / Copra / Oil)	126	Processing of 1161.86 million nuts per year
14	Coconut shell ice cream cup	2	Processing of 6.5 million cups per year
15	Coconut Wood Products	1	Processing 520 coconuts per year
	Total	377	

All these products have helped in enhancing the market potential for coconut products both in domestic and international markets and in controlling and stabilizing market prices of raw coconuts for providing competitive and remunerative prices to the farmers.

Allocation and Expenditure		
YEAR	TARGET	ACHIEVEMENT
2001-02	400	267.05
Xth plan		
2002-03	2000	474.01
2003-04	1075	481.69
2004-05	475.79	524.39
2005-06	1129.1	1153.989
2006-07	1000	746.733
Total	5679.89	3380.812

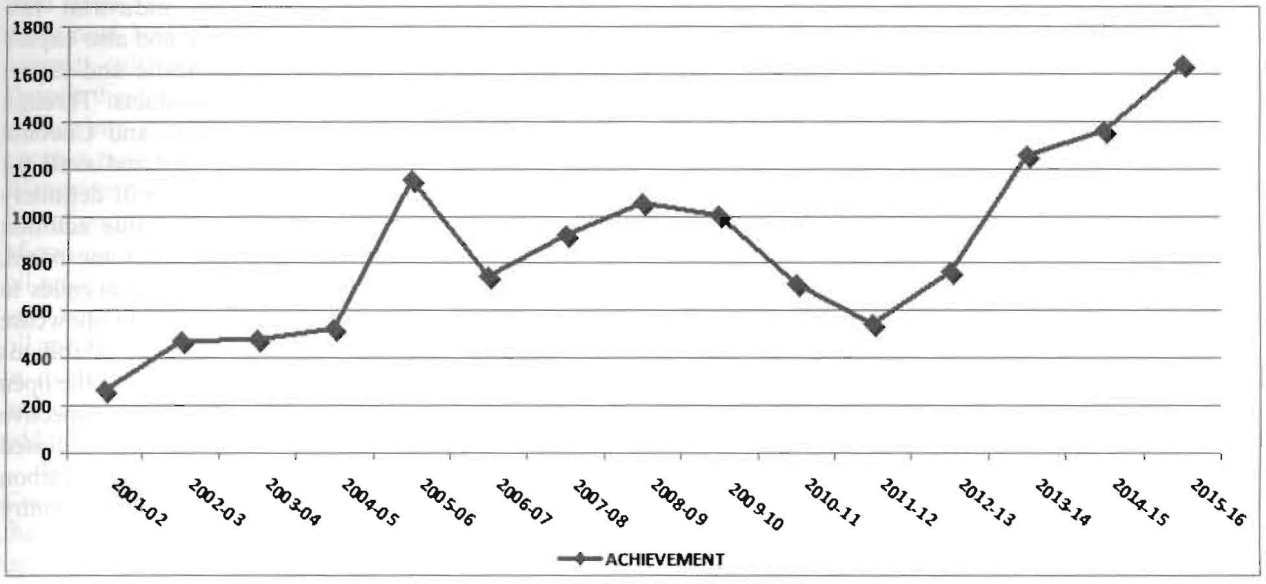
XI th Plan		
2007-08	1000	920.474
2008-09	1000	1052.563
2009-10	1000	1001.972
2010-11	1000	713.978
2011-12	500	543.637
Total	4500	4232.624
XII th Plan		
2012-13	635	764.577
2013-14	1000	1254.605
2014-15	1300	1359.64
2015-16	1400	1640.41
G. TOTAL	14914.89	12899.718

From the table it can be seen that during the 12th plan period the allocation of fund is on an increasing trend and the expenditure also is increasing. From the last five years, the schemes are being implemented in almost all the states and more units are being set up in different parts of the country. Efforts made by the Board with focused attention on awareness creation and market promotion increased the demand and consumption of coconut and value added products. During the initial periods, thrust was mainly on pest and disease management due to sudden outbreak of various pests and diseases and resultant problems. But at present, there is a paradigm shift to product diversification and establishment of more coconut based processing units. Since the coconut by products have attained high demand recently, the scope for establishment of units for coconut products

especially desiccated coconut, virgin coconut oil, spray dried milk powder, preserved and packed tender coconut water as well as shell charcoal and activated carbon have increased considerably.

In addition to coconut processing units, the projects assisted for disease/pest management and market promotion, development and other emergent needs are summarized in the table below:

Sl. No.	Details	Number of Projects
1.	Project for Development of Technology/ Adoption of Technology for Processing and Product Diversification	64
2.	Projects for Market Promotion and Market Development	80
3.	Project for Technical Support, External Evaluation and Emergent Requirement	1



The implementation of TMOC programmes have helped in achieving the objective of price controlling and stabilizing of raw coconuts produced by the farmers on one hand and on the other hand the TMOC programmes have boosted the production of numerous values added products and by-products from coconut earning valuable foreign exchange to the country. The disease /pest management programmes of TMOC have also helped in keeping the production unaffected due to attack of disease/pests.

With the establishment of Coconut Development Board in 1981, R & D efforts in the post harvest processing of coconut are also on the rise. The following technologies have been developed and commercialized under sponsored research projects of the Board.

Sl. No.	Name of Technology	Technology developed by the Board in association with
1	Processing and packing of coconut cream	Regional Research Laboratory, Trivandrum
2	Low fat Tender Coconut Cream	SCMS Institute of Biotechnology Research and Development, Kochi
3	Spray Dried Coconut Milk	Central Food Technological Research Institute, Mysore
4	Preservation and Packing of Tender Coconut Water	Defence Food Research Laboratory, Mysore
5	Automation of tender coconut water processing system	Defence Food Research Laboratory, Mysore
6	Coconut Vinegar Production from Matured Coconut Water	Central Food Technological Research Institute, Mysore
7	Coconut oil as alternate automobile lubricant	Cochin University of Science & Technology, Cochin
8	Dietary fibre from coconut residue	Central Food Technological Research Institute, Mysore
9	Production of Virgin Coconut Oil through cold process of centrifugal separation	Central Food Technological Research Institute, Mysore
10	Coconut jelly	College of Home Science, Tamil Nadu Agricultural University, Madurai
11	Nata-de-coco (as by product of coconut Vinegar)	Technology Development Centre, Coconut Development Board
12	Coconut chips	Central Plantation Crops Research Institute, (ICAR), Kasargod, Kerala
13	Technology for Production of Cheaper and Healthier Blends of Coconut oil with other Vegetable oils	Central Food Technological Research Institute, Mysore

14	Preservation and Packaging of Coconut Neera and its value added products	Technology Development Centre, Coconut Development Board
15	Designing a hygienic harvesting process & an appropriate process technology for sustaining quality of coconut neera as nutritive drink	SCMS Institute of Bioscience and Biotechnology Research and Development, Kochi, Kerala
16	Formulation of health mixes with Coconut Milk powder and coconut flour	PSG College of arts and science, Coimbatore, Tamil Nadu
17	Development of Low fat Nutritionally Rich Delicious Fresh Tender Coconut Cream	SCMS Institute of Bioscience and Biotechnology Research and Development, Kochi, Kerala

Coconut on conversion as an industrial raw material, will be able to demand price and also exploit the immense potential that the domestic and export markets offer for coconut and its products. Through the TMoC the farmers, entrepreneurs and Coconut Producer Companies can come forward and avail the opportunity to set up more units. This will definitely add on to product diversification and value addition which in turn can withstand the price fall to some extent. Through TMOC, the Board is also giving avenues to entrepreneurs, industrialists and artisans to showcase their products in national and international exhibitions and fairs which help them get better access to the open market networking and market tie ups with prospective buyers. Products like tender coconut water, desiccated coconut powder, milk powder and activated carbon produced in India have clicked well in the upcountry markets. ■