

Technology Mission on Coconut

for accelerating value addition in coconut

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Traditionally coconut is grown for making copra and coconut oil thus making these products controlling the price of coconut. Fall in price of copra and coconut used to adversely affect the price of coconut resulting in heavy loss to coconut farmers despite the Minimum Support Price (MSP) scheme of the government. The Price Support Scheme also could not make much impact in ensuring a fair, steady and reasonable price to the farmer. In this context, it was realized that product diversification and value addition would help the farmers to fetch better price for their produce. Thus new products were developed and commercialized through product diversification and value addition. These products would also have their role in controlling coconut price.

The coconut crop is also being affected by severe pests and debilitating diseases like root-wilt, ganoderma wilt, Thanjavur wilt and Tatipaka disease. It was realized that a major initiative is necessary for controlling the pests and diseases in coconut to improve its production and productivity and promote

product diversification for better value realization from various coconut products. This will help the small and marginal farmers who depend on coconut for their livelihood to realize better income.

In this context, to protect the interest of the coconut growers, the then Prime Minister announced launching of Technology Mission on Coconut (TMoC) in 2001-02. The Mission converge and synergize all the efforts and address the problems and bridge the gaps through appropriate projects in a Mission Mode to ensure adequate, appropriate, timely and concurrent action for product diversification and value addition and increase the production and productivity of coconut. This would help develop a mechanism which makes coconut farming competitive and ensures fair, reasonable and steady price to the farming community and would open avenue for novel coconut products.

Goals and Objectives

TMoC aims at coordinating with coconut



farming community, industry, market and research organizations and work on a mission mode for product diversification and value addition, production and productivity improvement, market research and market promotion for the overall development of coconut cultivation and industry. To ensure adequate, appropriate, timely and concurrent attention to all the links in the production, post harvest and consumption chain and to disseminate technologies through demonstration, acquisition and promotion for adoption to address the problems of coconut producers, entrepreneurs and market are the prime objectives of this scheme. Promotion of economically desirable diversification and value addition to generate skilled employment and maximizing economic, ecological and social benefits from the investment and infrastructure in coconut is also aimed through the scheme.

The Mission Approach

Mission approach is to evolve an approach for technology support which shall have synergy and convergence to address the existing gaps. Existing schemes of Coconut Development Board and other institutes will continue with existing pattern and shall be converged in a manner that vertical and horizontal integration are achieved. Issues which have not been addressed in existing schemes to meet the challenges and issues relating to development of technologies for management of insect pests and disease affected gardens, product diversification and market promotion, its demonstration and promotion for adoption are covered under the scheme. Missing links in existing programs with focused attention to achieve the goals of the mission will also be addressed under the programme.

National Steering Committee (NSC)

Technology Mission had a committee named National Steering Committee (NSC) at national level to guide and monitor the activities of TMOC and recommend suitable measures for improvement and effective implementation to the Govt. of India.

Project Approval Committee (PAC)

The projects received by the Board for consideration under Technology Mission (TMOC) are examined, reviewed and approved for implementation by a Project Approval Committee (PAC) representing State Govt., research organization, banks, food processing and marketing fields.

Focus Areas

1. Research and Development on product diversification, by-product utilization and value addition, production and productivity improvement and market development
2. Capacity building and participatory planning and implementation.
3. Infrastructure Development.
4. Integrated insect pest and disease management.
5. Quality, Quantity and Productivity Improvement.
6. Facilitating Credit Availability and Management.
7. Socially Acceptable and Ecologically Sustainable Schemes leading to large scale adoption and long-lasting effects.
8. Poverty Alleviation Linked with Sustained Natural Resource Management through judicious management of existing land use.
9. Post-harvest Processing, Product diversification and Value addition.
10. Agri-Business in coconut.
11. Equitable Access of People to benefits and equitable sharing by actually involving people at all levels during the project implementation, thus ensuring the evolution of a proper usufruct sharing mechanism for them.

Components and programme

Programme 1 - Development, Demonstration & Adoption of Technologies for Management of Insect Pests & Diseases Affected Coconut Gardens

Programme 2 - Development, Acquisition, Demonstration, Training and Adoption for Processing and Product Diversification

Programme 3 - Market Research and Promotion

Programme 4 - Technical Support, External Evaluation and Emergent Requirements.

Structure of the Technology Mission on Coconut

Processing & Product Diversification

Management of Insect Pests & Diseases

Technology mission

Market Research & Promotion, Technical Support, External Evaluation & Emergent Requirements

Eligible Institutions/ Organizations/ Individuals

SAUs, ICAR/CSIR Institutes, DEVELOPMENT OF TECHNOLOGIES, Any Research Organization having capability, NGOs, SAUs, ICAR/CSIR Institutes

Demonstration of technologies

Any Research Organization having capabilities, NGOs, FPOs, Farmers

Adoption of technologies

Entrepreneurs, Regd. Co-operative Societies/ Group of Farmers

Programme 1: Development, Demonstration & Adoption of Technologies for Management of Insect Pests & Diseases affected Coconut Gardens

A. Development of technologies*(i) Focus areas*

- Identification of root wilt disease free palms in the midst of disease affected gardens in 8 Districts of Southern Kerala and subjected to serological / ELISA tests and making use of these palms for seed production for raising quality seedlings.
- Identification of natural microbial antagonistic agents against eriophyid mite.
- Evaluation of biological agents for management of Ganoderma/Tatipaka diseases / Stem bleeding in Tamil Nadu, Karnataka, Andhra Pradesh and other areas.
- Studies on recycling of organic waste in reducing insect pests and disease incidence and increasing the production including the use of biological agents.
- Large scale synthesis of pheromones against red palm weevil and mass multiplication of pheromones.
- Any other aspects of insect pest and disease management.
- Development of technology for insect, pest and diseases which are contrast to coconut products.
- Technology available outside the country could be imported with cost.
- Control insects, pests & diseases through improved cropping /farming systems, improved cultural practices including nutrient and water management.

(ii) Eligible institutions

- Indian Council for Agricultural Research (ICAR)
- State Agricultural Universities (SAU's)
- Non governmental organizations (NGO's)
- Any institution having capability to conduct research

B. Demonstration of technologies

Demonstration of all the proven technologies on management of insect pests and diseases.

Eligible institutions :-

- Indian Council for Agricultural Research (ICAR)
- State Agricultural Universities (SAU's)
- State Agriculture/ Horticulture departments
- Public sector/Non governmental organizations (NGOs)
- Registered cooperative societies/Individuals/ Group of farmers
- Any institution having capability to demonstrate technologies

C. Adoption of technologies

Adoption of all the proven technologies on management of insect pests and diseases as well as on improved cultural practices

(i) Eligible institutions :

- Indian Council for Agricultural Research (ICAR)
- State Agricultural Universities (SAUs)
- State Agriculture/ Horticulture departments
- Public sector/Non governmental organizations (NGOs)
- Registered cooperative societies/Individuals/ Group of farmers
- Any institute having capability to adopt technology

Programme 2 : Development, Acquisition, Demonstration Training and Adoption of Technology for Processing and Product Diversification

A. Development of Technologies*(i) Focus areas*

- Convenience oriented coconut foods, Coconut oil based medicinal formulation
- Bio-diesel and Oleo-chemicals
- Coconut shell based chemicals and coconut water & skim milk based beverages
- Coconut timber processing
- Technologies developed at laboratory level shall be field tested at pilot plant level to assess the technical and economic viability of the technologies
- Technologies shall be transferred through demonstration and training of entrepreneurs in the appropriate areas
- Any technology available outside the country and could be imported.

ii) Eligible institutions

- Council for Scientific and Industrial Research (CSIR)

- Defence Food Research Laboratory (DFRL)
- Central Food Technological Research Institute (CFTRI)
- Regional Research Laboratories (RRL)
- State Agricultural Universities (SAUs)
- NGOs, Individual entrepreneurs
- Public sector and other research organizations
- Any institution having capability for conducting research

B. Acquisition Training & Demonstration of Technologies

All the proven technologies in processing / product diversification

Eligible institutions

- Council for Scientific and Industrial Research (CSIR)
- Defence Food Research Laboratory (DFRL)
- Central Food Technological Research Institute (CFTRI)
- Regional Research Laboratories (RRL)
- State Agricultural Universities (SAU's)
- NGO's/ Registered cooperative societies/Individual entrepreneurs
- Public sector and other research organizations
- Any institute / organization having capability

C. Adoption of Technologies

All the proven technologies in processing / product diversification

Eligible institutions: Registered co-operative societies/ individual / entrepreneurs / NGOs / Any institutions having capability to adopt technology

Programme 3. Market Research and Promotion

(i) Focus areas

1. Review the present situation of coconut development in particular area / State
2. Develop primary/secondary data of various aspects on coconut
3. Identify constraints and suggest their remedial measures
4. Develop short term and long term strategies for systematic development of coconut
5. Provide consultancy services, expert services & establishing labs etc. in pursuance thereof
6. All other aspects related to promotion and utilization of coconut products in India and outside

7. Potential technologies available abroad.
8. Assessment of consumer preference, assessment of value added products and trend analysis
9. Awareness campaign on health aspects of coconut products
10. Providing support for establishment of parlours for coconut products, media support, literature, participation in exhibition / trade fairs, etc. within and outside the country

(ii) Aspects of Studies / Surveys:

- a. Techno Economic Feasibility Studies for development of coconut in States/UTs/Belts/Zones etc
- b. Market Studies/special problems/Area Commodity based study/other aspects
- c. Expert Services for project identification, formulation, implementation, monitoring & evaluation etc
- d. Multi-disciplinary and specific studies as approved by PAC

(iii) Eligible institutions

1. All the Govt. agencies, NGO's, Registered cooperative societies and individuals
2. Any institute/organization having capability

Programme 4 : Technical Supports, External Evaluation and Emergent Requirements

When emergent requirement arises, technical and financial support is given for coconut cultivation, industry and market promotion on project basis and projects are approved by the PAC.

Pattern of assistance

(1) Development of technologies for management of insect, pests and diseased affected gardens:

(A) Development of technologies:

The projects received for the development of technologies for management of insect, pests and diseased affected gardens from

- (a) Central/State Government organizations, public sector organizations and cooperative sector are given the assistance of 100% of the project cost limited to 50.00 lakh and
- (b) NGOs and other organization assistance is 50% of the project cost limited to Rs. 25.00 lakh.

(B) Demonstration of the technologies:

The projects received for the demonstration of the technologies from

(a) Central / State Governments Organizations/Public Sector Units / Cooperative Societies- the assistance is 100% of the project cost limited to Rs. 25.00 lakh per project

(b) individuals / group of farmers / NGOs/ Private Companies assistance is 50% of the project cost limited to Rs. 10.00 lakh.

(C) Adoption of the technologies:

The projects received for the adoption of these technologies from the group of farmers/NGOs/ other organization are assisted at the rate of 25% of the project cost.

(2) Development of technologies for processing and product diversification:

(A) Development of technologies:

The projects received for the development of technologies for processing and product diversification from

(a) Central/State Government organizations, public sector organization and cooperative sector are given the assistance of 100% of the project cost limited to 75.00 lakh and

(b) NGOs, individual entrepreneurs and other research organization to the tune of 75% of the project cost limited to Rs.35.00 lakh.

(B) Acquisition, training, demonstration of the technologies: The projects received for the Acquisition, training, demonstration of the technologies from

(a) All the Governments and Cooperative Societies- the assistance is 100% of the project cost

(b) NGOs, individuals entrepreneurs and other organizations to the tune of 50% of the project cost.

(C) Adoption of technologies: The projects received for the adoption of the technologies from

(a) NGOs, individual entrepreneurs and other organization, projects are assisted by 25% of the project cost limited to Rs. 50.00 lakh.

(b) SC/ST women farmers are assisted by 33.3% of the project cost limited to Rs. 50.00 lakh.

(c) high value agriculture in Union territory of Andaman and Nicobar and Lakshdweep are assisted by 50% of the project cost limited to Rs.50.00 lakh.

(3) Market research and Promotion:

(A) Market research: The projects received for market research from

(a) Government agencies and Cooperative Societies are given the assistance by 100% of the project cost

limited to 25.00 lakh

(b) individuals, NGOs and other Organization are assist-ed by 50% of the project cost limited to Rs. 12.50 lakh.

(B) Market promotion: The projects received for market promotion from

(a) Government agencies and Cooperative Societies are given the assistance of 100% of the project cost limited to 25.00 lakh

(b) Federation of CPS (FPOs) are assisted by 50% of the project cost limited to Rs. 6.00 lakh

(c) NGOs and private institutes are assisted by 50% of the project cost limited to Rs. 15.00 lakh.

4) Technical Support, External Evaluation and Emergent Requirement: Support is extended on need basis as decided by the Project Approval Committee of TMOc.

Submission of Projects

a. The projects on research for development of technology for product diversification and value addition, insect, pest and disease control and market research may be submitted by the eligible organizations / institutions for consideration of the PAC.

b. The projects on demonstration, acquisition and training may also be submitted by the eligible organizations / institutions for consideration of the PAC.

c. The projects on adoption of technology for processing and product diversification needs to be submitted in the form of Detailed Project Report (DPR) along with prescribed application form. The projects on adoption are supported by back -ended subsidy so promoters must avail a minimum of 40% of the project cost as term loan from any nationalized / scheduled bank and submit the project along with



Financial assistance @ 25% of the project cost limited to Rs.50 lakh for entrepreneurs and 33.3% of the project cost limited to Rs. 50 lakh per project for SC/ST Women entrepreneurs for establishment of coconut processing units.

bank term loan sanction and appraisal report to the Board.

Conditions for subsidy under Adoption of Technologies for processing and product diversification

(i) Back ended capital investment subsidy per project shall be provided under the scheme to those projects which are found technically and financially viable.

(ii) Subsidy would be sanctioned and released under the scheme on the pattern approved by PAC and MoU executed among entrepreneur, Bank and Board.

(iii) Subsidy will be released in the subsidy reserve fund account of the promoter in three installments of 50%, 40% and 10% on submission of documents as per MoU.

(iv) The back ended subsidy credited in the subsidy reserve fund account will have a lock in period of five years reducible to 3 years as per conditions in MoU.

(v) On completion of lock in period and liquidation of entire term loan (except amount equivalent to subsidy in the subsidy reserve fund account) and submission of documents as per MoU the subsidy will be adjusted in the term loan account of the promoter.

(vi) The entrepreneurs who have availed Coconut Development Board's subsidy will not be entitled to avail any other Central Government Subsidy. However, they may avail State Government Subsidy as per the rule of State Government and the Board.

Projects on Adoption of Technologies for processing and product diversification :

Under adoption of technology for processing and product diversification projects may be submitted on the following:

(i) Processing and preservation of Neera and value added products

(ii) Processing and preservation of Tender coconut water

(iii) Manufacturing of desiccated coconut powder, virgin coconut oil, vinegar, nata-de-coco, coconut chips, coconut milk, milk cream, spray dried coconut milk powder, coconut shell powder, coconut shell charcoal, coconut shell based activated carbon etc.

d. The projects may be submitted on market research and market promotion by the eligible institutions / organizations / FPOs/ other eligible individuals for undertaking various market research, promotional activities for the consideration of the PAC.

Impact of Technology Mission

Many projects on research, adoption and market promotion have been assisted under Technology Mission on Coconut. Out of these 480 projects under adoption of technologies are assisted for establishment of various units for manufacturing coconut and coconut-based value-added products. These units are utilizing around 12% of the total coconut production of India for producing various value added coconut products. Consumption of coconut for producing value added products play a vital role in arresting the lead role being played by coconut oil and copra deciding the coconut price. The product diversification and value addition of coconut have supported coconut farmers and government to ensure a fair, reasonable and steady price to coconut farming community.

Technologies available for entrepreneurs

1. Hygienic harvesting, preservation and processing of Neera and value-added products
2. Processing, preservation and packaging of tender coconut water
3. Manufacturing of virgin coconut oil through cold press.
4. Blending of coconut oil and other edible oils
5. Coconut milk, cream and spray dried milk powder
6. Technology for manufacturing of vinegar, coconut chips and nata-de-coco
7. Minimal processing of tender coconut
8. Dietary fibre from coconut residue.

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