Proceedings of the 51st Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at Kochi on 19th January 2018

The 51st meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held in the Board Room of Coconut Development Board, Kochi on **19th January 2018**. Dr. B.N.S. Murthy, Chairman, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairman welcomed all the members of PAC and agenda were taken up. The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 50th Project Approval Committee Meeting held on 4th August 2017

The Committee confirmed the proceedings of the 50th Project Approval Committee meeting held on 04.08.2017**.**

AGENDA No. 2: Action Taken Report on Decisions of the 50th PAC Meeting

The committee perused the action taken on decisions of the 50th meeting of Project Approval Committee. Deputy Director (Tech) informed that out of 29 (8 research & 21 adoption) projects sanctioned by the 50th PAC, in 22 projects action has been taken, fund released and projects are progressing. Whereas out of 7 projects pending for action, in 3 research projects neither MoUs are received so far nor any communication is received from PIs. Whereas in 2 projects under Adoption, the financing institute is NABARD and the NABARD has suggested some modifications in the MoU. The modifications were explained by Smt Usha K., DGM, NABARD and it was decided that since NABARD is not a commercial bank the modifications may be further looked into and finalize amicably protecting the rights of CDB as well as NABARD.

Whereas in 2 other projects the FPOs have not submitted the signed MoU due to difficulties in availing sanctioned term loans. The committee decided that wherever the projects have not been started TMoC Secretariat may issue time bound letter to start the projects else their projects shall be treated as cancelled.

AGENDA No. 3: Approval of New Project Proposals:

1. **Bio-management of the Rugose Spiralling Whitefly (RSW), an Invasive Pest of Coconut Palm-ICAR-Central Plantation Crops Research Institute, Regional Station, Kayamkulam, P.O. Krishnapuram - 690 533, Kerala.**

The objectives of the project are as follows:

- Evolving effective mass production strategies of *Encarsia guadeloupae* and to develop conservatory and augmentative biological control of rugose spiraling whitefly infesting coconut.
- To promote habitat conservation and inoculative protocol of scavenger beetles devouring sooty mould in Rugose Spiralling Whitefly infested coconut gardens.
- Assessing the extent of damage induced by RSW in coconut and associated crops in the coconut based cropping system.
- To empower extension professionals and farmers on the biocontrol of Rugose Spiralling Whitefly.

PAC perused on the recommendations of the ISC and observed that a project with similar objectives has already been approved by 50th PAC to ICAR-National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bangalore and TNAU, Coimbatore jointly so this project will only be repetition. The PI may co-ordinate with the PI of ICAR-NBAIR, Bangalore and modify the project avoiding the repetition of the objectives and restricting the project to mass multiplication and distribution of the bioagent to farmers. **PAC decided that revised project may be placed in next PAC**.

2. **Integrated Disease Management Practices for Basal Stem Rot Disease of Coconut in East Coast Region of Tamil Nadu- A Farmer Participatory Demonstration cum Training Programme- Coconut Research Station, Tamil Nadu Agricultural University, Veppankulam-614 906, Thanjavur District, Tamil Nadu.**

The objectives of the project are as follows:

- Geomapping of Basal Stem Rot (BSR) disease incidence in major coconut growing areas of Tamil Nadu.
- To demonstrate the efficacy and feasibility of recommended technologies in coconut on a group action basis in BSR affected area.
- To motivate the farmers by designing and imparting need based trainings to different client groups related to BSR Management.
- Creating awareness among growers regarding BSR disease through mass media, field visits and also by personal communications.

PAC perused on the recommendations of the ISC and observed that a project with similar objectives has already been approved by the 50th PAC to the Horticulture Research and Extension Station, Arsikere, Karnataka so this project will only be repetition. PAC decided that the Principal Investigator may modify the project restricting to demonstration of proven integrated management technologies of basal stem rot disease in Thanjavur and neighboring affected districts of Tamil Nadu and the **revised project may be submitted in next PAC**.

3. **Production of Gasoline, Diesel from Coconut Shell via Pyrolysis, Hydrotreating aaand Catalytic Cracking- VIT University, Vellore - 632 014, TamilNadu.**

The objectives of the project are as follows:

- Using an alternative approach to produce efficient hydrocarbon from biomass using coconut shell.
- Simulation of the process using Aspen plus software for better product.
- Optimization of the process for cost-effective product.

PAC perused on the recommendations of the ISC and suggested that the project should be for production of shell oil from shell chips and not from shell powder as envisaged in the project. In order to develop the viable technology for production of shell charcoal and shell oil, the studies on recovery of shell charcoal and shell oil must be carried out at lab scale. PI may co-ordinate with the University of Petroleum and Energy Studies, Dehradun, Uttarkhand and explore the possibility for processing of hydrocarbon initially by outsourcing so that expenses on costly machineries may be avoided. Based on the above experiments and findings project for further studies may be drawn. PAC decided that PI may work on the above observations and **submit revised project in next PAC**.

4. **Climate Smart Tissue Irrigation in Coconut - University of Horticultural Sciences, Bagalkot, Regional Horticultural Research & Extension Centre, UHS Campus, GKVK, Bengaluru -560 065, Karnataka.**

The objectives of the project are as follows:

- To study the water use efficiency of tissue irrigation.
- To study the nutrient and chemical use efficiency of tissue irrigation.
- To study the cost and returns of tissue and conventional method of irrigation.

Dr.Vishnuvardhana, Professor of Horticulture & ADRE, RHREC, UHSB Campus, GKVK, Bengaluru presented the project.

PAC discussed the project in detail and approved the project with a total financial assistance of **Rs. 50.00 lakh** for a project period of three years. PAC suggested to reduce the Field Officers and SRF numbers to one each instead of two each. PAC also suggested that the comparisons of cost benefit ratio with drip irrigation and saving of water in litres should also be done. PAC further suggested to identify two centers with extreme climatic conditions instead of 4 centres and hiring of consultant cannot be considered. Further the expenses on contingencies, vehicle

hiring, labours may be relooked and worked out based on reality. Accordingly revised project may be submitted.

5. **Identification of Contamination through Automation and Removal in Coconut Desiccated Powder Industry- College of Engineering, Pathanapuram, Punalur, Kollam, Kerala.**

The objectives of the project are as follows:

- To build a system that ensures the quality of grated coconut.
- System that identifies the presence of testa and other foreign material from kernel.

PAC perused on the recommendations of the ISC and observed that the project has the gratted coconut as a study material rather than desiccated coconut powder as stated in project title. PAC suggested that the PI may visit the DC powder industries also and find out their production problems of similar nature and include solution for those problems also. PI should also include other odd materials such as excessive dried black DC and any other related problem reported by DC industry in addition to testa for identification by the sensor. PAC decided that PI may consult some of the DC industries and based on their inputs, **revised project may be submitted in next PAC.**

6. **Identification of Drought Tolerant Coconut Palms in Tamil Nadu and utilization for Developing Adaptive Gene pool- ICAR-Central Plantation Crops Research Institute, Kasargode-671 124, Kerala.**

The objectives of the project are as follows

- Identification of palms showing tolerance to low moisture stress in areas where deficit rainfall was recorded for three consecutive years.
- Characterization of local coconut populations, including identified drought tolerant palms.
- Collection of seed nuts from the identified palms and raising seedling progenies.
- Progeny testing and seedling selection.
- Distribution of selected seedling progenies for evaluation of low moisture stress tolerance in areas receiving low rain fall.

PAC perused on the recommendations of the ISC and observed that the envisaged objectives and purposes would not be possible to achieve during project period as it is a several year long process for progeny testing in coconut which may be carried out at CPCRI level in a continuous programme. Since the state of

Tamilnadu and Karnataka faced severe drought situations and several coconut palms have died, a survey for identification and enlisting of palms shown tolerance to low moisture stress may be done for future studies as stated in objectives. PAC suggested to modify the project restricting the duration, cost and objectives as stated above and further basic studies may be taken up at CPCRI in their continuous research programmes. **PAC decided that the revised project may be submitted in next PAC.**

7. **Farming with Naturally Driven Microbes-Miklens Bio Pvt Ltd, Bengaluru, Vironagar, Avalahalli, Bengaluru-560049, Karnataka.**

The objectives of the project are as follows:

- To develop an organic package of practice recommendations catering to the overall management of coconut cultivation through AMT (Agri Microbial Technology)
- To combat the major problems being faced by our farmers in terms of low yield due to improper nutrition management and more maintenance cost.
- Pest and disease management.
- Non-acceptance of tender coconut in international market due to reports of harmful chemical residues.

PAC perused on the recommendations of the ISC and decided that project need not be considered for funding under TMoC and **did not approve the project for funding.**

8. **Characterization of Medicinally Important Compounds from Roots and Root Exudates of *Cocos nucifera* L. Seedlings for Treating Diabetic Foot Ulcers- Mar Athanasios College for Advanced Studies Tiruvalla (MACFAST), Pathanamthitta Dist, Kerala -689191.**

The objectives of the project are as follows:

- Isolation of Root exudates and root extracts of *C. nucifera* seedlings.
- Column chromatographic separation of exudates and extracts.
- *In vivo* and *In vitro* wound healing activity testing of root exudates and root extract of *C. nucifrea*.
- Bioprospecting using appropriate techniques such as GC/MS and NMR.
- Transcriptome sequencing to identity and characterize transcripts potentially contributing to the observed medicinal properties.

PAC perused on the recommendations of the ISC and decided that project need not be considered for funding under TMoC and **did not approve the project for funding.**

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9. **Improving Performance of Solar Greenhouse Drying of Copra nut- Kongunadu College of Engineering and Technology Namakkal-Trichy Main Road, Thottiam (Tk), Trichy District, Tholurpatti-621215, Tamil Nadu.**

The objectives of the project are as follows:

- Rack Type drying of Copra with forced circulation
- Recirculating the moist air
- Thermal Energy storage systems both sensible and latent heat storages
- Hybrid solar green house
- Drying kinetics of Copra
- Mathematical model development for Copra drying
- CFD analysis on moisture diffusion of Copra

PAC perused on the recommendations of the ISC and decided that project need not be considered for funding under TMoC and **did not approve the project for funding.**

10. **Development of Technology for Extraction of Fatty Acids in Coconut Through Fractionation Method- Don Bosco Institute of Technology Kumbalagodu, Mysore Road, Bangalore-560 074, Karnataka**

The objectives of the project are as follows:

- Extraction of coconut oil
- Fractionation of fatty acids in coconut oil
- Extraction of lauric acid from coconut copra oil
- Extraction of other fatty acids
- Effective usage of other fatty acid glycerides, conversion of these glycerides to respective acids or biodiesel on transesterification.
- Use of glycerol as raw material for soap production.
- Conversion of waste to biodiesel.

PAC perused on the recommendations of the ISC and observed that the project cost is very high and since it's a Private Institute, only 50% of the project cost may be funded by the Board so shares of Institute and Board are to be clearly stated. Though coconut fatty acids are among the highest imported coconut product

in India, the PI was not able to explain the commercial utility of various fatty acids. PI was not confident about input output ratio and commercial viability of technology at industry level. PAC decided that the project is useful when we see from the import point of view of fatty acids and decided that PI may rework on the above suggestions **and submit the revised project in next PAC.**

11. Technology Development for Value Addition & Preservation of Coconut Water- CSIR-National Institute for Interdisciplinary Sciences and Technology (NIIST), Trivandrum, Kerala.

The objectives of the project are as follows:

- To develop a protocol for the preservation of coconut water in commercial level operations for addressing the issues related to the non-stability and spoilage.
- To design & set up a prototype rapid chilling & preservation unit for coconut water and optimize the process parameters based on trial runs.
- To develop innovative value added products from coconut water in pilot plant level.
- To establish the nutritional benefits of the developed products.

Dr. Venugopalan V. V., Principal Scientist, Agroprocessing Technology Division, CSIR-National Institute for Interdisciplinary Sciences and Technology (NIIST) Thiruvanathapuram, Kerala presented the project.

PAC discussed the project in detail and approved the project with a total project cost of **Rs 29.70 lakh and project duration of two years**. PAC suggested to include centrifugation process to avoid hydrolytic rancidity due to the presence of traces of oil in matured coconut water. Since there is no proper collection mechanism of matured coconut water, PAC suggested to study the collection method being followed by the units in Tamil Nadu and standardize the process. PAC further informed that the standardization part has to be undertaken at the collection point itself at industry level.

12. Value Addition of Coconut Syrup and Its Scientific Validation for Health Benefits- CSIR National Institute for Interdisciplinary Sciences and Technology (NIIST), Trivandrum, Kerala.

The objectives of the project are as follows:

- Standardization of neera syrup preparation procedure for facilitating incorporation of spices
- Development of novel spice formulations using the standardized syrup

- Sensory and shelf life studies
- Chemical characterization studies
- Toxicity studies
- Immunomodulation studies

Dr (Mrs.) Reshma M. V. (PI), Senior Scientist, Agro Processing and Technology Division, CSIR -National Institute for Interdisciplinary Science and Technology (NIIST) Thiruvanathapuram, Kerala presented the project.

PAC discussed the project in detail and approved the project with a total project cost of **Rs. 8.45 lakh with a project period of one year**. PAC suggested that the project should complete with first two objectives and further studies may be taken up under a separate project. PAC also suggested to include Glycemic Index (GI) and Glycemic Load (GL) studies.

Desiccated Coconut Powder Manufacturing Units

13. Setting up of Desiccated Coconut Powder Manufacturing Unit - M/s Mercury Coconut Products, SF No 302/1 A, Koolanaickenpatty Village, Lakshmapuram Post, Pollachi Taluk, Coimbatore Dist, Tamilnadu – 642 107.

The objective of the project is setting up of a desiccated coconut powder manufacturing unit with a capacity to process 30,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	90.18	66.25	16.56
Plant & Machinery	134.57	134.57	33.64
Electrification	18.42	6.98	1.75
Generator	6.89	5.00	1.25
Weigh Bridge	12.77	12.77	3.19
ETP	5.56	5.40	1.35
Water purification system (R.O.)	5.40	5.40	1.35
Working Capital margin	10.00	…	….
TOTAL	**283.79**	**236.37**	**59.09 Limited to 50.00**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 50.00 lakh**.

14. Setting up of a Desiccated Coconut Powder Manufacturing Unit - M/s Blueen Food Products, XX/410, Chappa, Eachur Post Kannur Dist, Kerala.

The objective of the project is setting up of a desiccated coconut powder manufacturing unit with a capacity to process 50,000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(RRs. in lakh)		
Land	Own	-	-
Building & Civil works	89.66	73.70	18.43
Plant & Equipments	87.19	87.19	21.80
Generator	8.38	5.00	1.25
ETP	11.74	10.00	2.50
RO water purification plant	4.00	4.00	1.00
Electrification	15.21	4.61	1.15
Borewell	1.50	-	-
Office stationery	1.00	-	-
Working Capital margin	25.51	-	-
TOTAL	**244.19**	**184.50**	**46.13**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 46.13 lakh**.

15. Setting up of a Desiccated Coconut Powder Manufacturing Unit- M/s Sri Menakadevi Agro Products, SF. No. 177/2A 11, Opposite Sri Krishna Gardens, Nalluthukuli Post, Pollachi-642005, Coimbatore Dist, Tamil Nadu.

The objective of the project is setting up of a desiccated coconut powder manufacturing unit with a capacity to process 7500 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. In lakh)		
Land	Own	-	-
Building & Civil works	30.00	26.63	6.66

Plant & Equipments	50.00	48.77	12.19
Electrification	3.00	2.44	0.61
Preliminary & Pre op. expenses	1.88	0.78	0.20
Working Capital margin	8.12	-	-
TOTAL	**93.00**	**78.62**	**19.66**

After detail discussion, PAC suggested that with the same plant and machinery processing of 10,000 coconuts is possible therefore entrepreneur should submit the modified project with processing capacity of 10,000 nuts with same project cost. PAC approved the project with a maximum eligible subsidy of **Rs.19.66 lakh**.

16. Expansion of the Existing Desiccated Coconut Powder Manufacturing Unit- M/s Maharaja Eco Products, Chukkamkonam, Thenkurissi, (Mahalikadam-Ethanur Byepass Road), Palakkad – 678 671, Kerala.

The objective of the project is to expand the Existing Desiccated Coconut Powder Manufacturing Unit with a capacity to process 22500 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works (renovation)	11.00	11.00	2.75
Plant & Equipments	42.50	41.50	10.38
Electrification	2.00	1.96	0.49
Preliminary & Pre op. expenses	1.00	0.54	0.13
Working Capital margin	10.29	-	
TOTAL	**66.79**	**55.00**	**13.75**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 13.75 lakh.**

Tender Coconut Water Processing Units

17. Setting up of a unit for Processing and Packing of Tender Coconut Water - M/s Muthuvel Enterprises SF No.45/7, Vaguthampalayam Village, Kinathukadavu Tk, Coimbatore, Tamil Nadu – 642 120.

The objective of the project is setting up of a unit for processing and packaging of tender coconut water with a capacity to process 5000 tender coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	30.20	30.20	7.55
Plant & Equipments	90.50	86.49	21.62
Pre op. expenses	2.00	1.16	0.29
Working Capital margin	26.00	-	-
TOTAL	**148.70**	**117.85**	**29.46**

After detailed discussion, PAC noted that since this project is based on new technology developed by the entrepreneur but the entrepreneur was not able to explain the processing technology before the PAC, hence PAC decided that entrepreneur may come with the expert(s) who developed/guided in developing the technology in the next PAC and **deferred the project for next PAC meeting.**

18. Setting up of a unit for Processing and Packing of Tender Coconut Water Unit- M/s Kavi Agro Foods, 71 A, Palakkad Road, Pollachi -642 001, Tamil Nadu.

The objective of the project is setting up of a unit for processing and packaging of tender coconut water with a capacity to process 5000 tender coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(RRs. in lakh)		
Land	Own	-	-
Building & Civil works	Own	-	-
Plant & Equipments	59.60	59.60	14.90
Preliminary & Pre op. expenses	4.00	0.59	0.15
Working Capital margin	5.00	-	-
TOTAL	**68.60**	**60.19**	**15.05**

After detailed discussion, PAC noted that here also the technology is developed by the entrepreneur with the assistance of some expert in this field. PAC asked the entrepreneur to explain the technological details. Entrepreneur explained the entire processing technology and after having been fully satisfied, PAC approved the project with a maximum eligible subsidy of **Rs. 15.05 lakh**.

Integrated Coconut Processing Units

19. Setting up of an Integrated Coconut Processing Unit for VCO & DC- M/s Samraj Wholesomeliving Pvt Ltd, Periasamy Guan, 6/5 Vahaiadi Perumal Koil St, Kottar, Nagercoil, Kanyakumari Dist, Tamilnadu – 629 002.

The objective of the project is to process 25,000 coconuts per day for making VCO & DCP

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(RRs. In lakh)		
Land	Own	-	-
Building & Civil works	63.50	39.00	9.75
Plant & Equipments	240.00	225.76	56.44
Electrical installation	10.00	4.46	1.11
Generator	5.00	5.00	1.25
Mineral Water Plant	2.68	2.68	0.67
Others	11.82	-	-
Preliminary & Pre op. expenses	25.00	2.76	0.69
Working Capital margin	70.00	-	-
TOTAL	**428.00**	**279.69**	**69.91 Limited to 50.00**

PAC noted that technology adopted for making of VCO is through DC. After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 50.00 lakh**.

20. Setting up of an Integrated Coconut Processing Unit for Coconut products like Coconut Milk Powder, Coconut Sugar - M/s De Alben, 6/49 B, K. Pungampalayam, Marudhur Post, Karamandai, Coimbatore, Tamilnadu – 641 104.

The objective of the project is setting up of an integrated unit for manufacturing of (i) Coconut Sugar (ii) Coconut Milk Powder (iii) Coconut Sugar based Chocolate (iv) Health mix using coconut sugar & coconut milk with a capacity to process 500 Kg coconut per day for producing 100 kg Coconut Milk Powder per day and 500 litres Coconut Neera per day for producing 100 kg Coconut Sugar per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	31.50	15.42	3.85
Plant & Equipments	171.79	163.75	40.94
Contingencies	1.35	-	-
Pre op. expenses	10.00	1.79	0.45
Working Capital Margin	12.00	-	-
TOTAL	**226.64**	**180.96**	**45.24**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 45.24 lakh**.

21. Setting up of an Integrated Coconut Processing Unit for Coconut Vinegar, Nata-de-Coco and Coconut Chips- M/s Nata Nutrico Coconut Food Products; Office – Mundapuram, Narath Post, Kannur Dist, Kerala – 670 601.

The objective of the project is setting up of an integrated unit for manufacturing of Coconut Vinegar, Nata-de-Coco and Coconut Chip**s** with a capacity to process 1000 litres of coconut water per day for Coconut Vinegar, Nata-de-coco and to process 1,000 coconuts per day for Coconut Chips.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(RRs. in lakh)		
Land	Lease	-	-
Building & Civil works	26.00	26.00	6.50
Plant & Equipments	38.91	38.91	9.73
ETP	3.25	3.25	0.81
Electrification	3.99	1.95	0.49
Working Capital margin	2.72	-	-
TOTAL	**74.87**	**70.11**	**17.53**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 17.53 lakh**.

22. Setting up of an Integrated Coconut Processing Unit for Coconut Milk Packing, Extra Virgin Coconut Oil (Organic & Non Organic) and Tender Coconut Water Processing and Packing unit – M/s K.L.F Nirmal Industries (P) Ltd., Fr. Dismas Road, P.B.No. 40, Irinjalakkuda, Trissur(Dist), Kerala-680121.

The objective of the project is setting up of an integrated unit for Processing and Packing of Coconut Milk, Extra Virgin Coconut Oil (Organic & Non Organic) and Tender Coconut Water with a capacity to process 1000 nuts per day for Coconut Milk, 5000 nuts per day for Extra VCO (Organic & Non Organic) and 6400 No's of Tender Coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works (renovation)	28.60	28.60	7.15
Plant & Equipments	187.66	187.66	46.91
Furniture & Fittings	1.50	-	-
Electrical & Electronic Installations	25.00	9.38	2.35
Preliminary & Pre op. expenses	8.28	2.25	0.56
Working Capital margin	59.98	-	-
TOTAL	**311.02**	**227.89**	**56.97 Limited to Rs.50.00**

After detail discussion, PAC observed that cost of homogenizer seems to be extremely high so the promoter should submit the specification details of homogenizer and approved the project with a maximum eligible subsidy of **Rs. 50.00 lakh**.

Ball Copra Units

23. Setting up of a Ball Copra Making Unit – Shri Sijinjith AP S/o Ashokan PK, Pandanpurath House, Karingad Post, Kavilumpara Via, Kozhikode Dist, Kerala – 673 513

The objective of the project is setting up of a ball copra making unit with a capacity to process 1,00,000 coconuts per year.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-

Plant & Equipments	0.20	-	-
Platform Dryer	20.00	3.50	0.88
Other expenses	0.10	-	-
Working Capital	4.70	-	-
TOTAL	**25.00**	**3.50**	**0.88**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 0.88 lakh.**

24. Setting up of a Ball Copra Making Unit – Shri Francis KT S/o Shri Thomas Kaithakulam, Kaithakulath Boda Making Unit, Maruthonkara Post, Kavilumpara Via Kozhikode – 673 513, Kerala

The objective of the project is setting up of a ball copra making unit with a capacity to process 80,000 Coconuts per year.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Plant & Equipments	0.20	-	-
Platform Dryer	20.00	3.50	0.88
Preliminary & Pre op. expenses	0.10	-	-
Working Capital margin	4.70	-	-
TOTAL	**25.00**	**3.50**	**0.88**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 0.88 lakh.**

25. Setting up of a Ball Copra Making Unit – Mrs. Prajisha P., Kunnil Boda Making Unit, Muthuvannacha Post, Kuttiady Via, Kozhikode Dist, Kerala – 673 508

The objective of the project is setting up of a ball copra making unit with a capacity to process 2.50 lakh coconuts per year.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Plant & Equipments	0.20	-	-
Platform Dryer	20.00	6.25	1.56

Others	0.10	-	-
Working Capital margin	4.70	-	-
TOTAL	**25.00**	**6.25**	**1.56**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 1.56 lakh.**

26. Setting up of a Ball Copra Making Unit - Mr. Vummidi Venkata Satyanarayana S/o Satyanarayana and Mr. Vummidi Veera Raghavulu S/o Satyanarayana Mukkamula Village, Peravali Mandal, West Godavari Dist, Andhra Pradesh – 534 330

The objective of the project is setting up of a ball copra making unit with a capacity to process 15.00 lakh coconuts per year

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Platform Dryer	80.50	52.50	13.12
TOTAL	**80.50**	**52.50**	**13.12**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 13.12 lakh**.

27. Setting up of a Ball Copra Making Unit – Shri Kamisetty Suryachandradas S/o Ramayya, D. No. 6-64, Appanapalli,Mamidikuduru Mandal, East Godavai Dist, Andhra Pradesh – 533 247

The objective of the project is setting up of a ball copra making unit with a capacity to process 2.80 lakh coconuts per year.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	0.30	-	-
Platform Dryer	15.00	9.80	2.45
Preliminary & Pre op. expenses	0.60	-	-
Working Capital margin	4.10	-	-
TOTAL	**20.00**	**9.80**	**2.45**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 2.45 lakh**.

28. Setting up of a Ball Copra Making Unit – Shri Vuyyuri Somaraju S/o China Suryanarayana Raju 1-79, Rajulapalem, Pothavaram, P. Gannavaram Mandal East Godavari Dist, Andhra Pradesh – 533 229

The objective of the project is setting up of a ball copra making unit with a capacity to process 5.00 lakh coconuts per year.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Platform Dryer	26.00	17.50	4.38
TOTAL	**26.00**	**17.50**	**4.38**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 4.38 lakh**.

29. Setting up of a Ball Copra Making Unit – S/Shri Kommula Srinivas & Kommula Vishnu Vardhan S/o Mr. Madhavarao D No. 3/229/1, Pedapatnamlanka Village , Mamidikuduru Mandal East Godavri Dist, Andhra Pradesh - 533 247

The objective of the project is setting up of a ball copra making unit with a capacity to process 15.00 lakh coconuts per year.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	-	-	-
Platform Dryer	21.36	21.36	5.34
Pre op. expenses	-	-	-
TOTAL	**21.36**	**21.36**	**5.34**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 5.34 lakh**.

Coconut Shell Charcoal Manufacturing Units

30. Setting up of a Coconut Shell Charcoal Briquettes Manufacturing Unit – M/s VESP Energy, 41-Ramananda Nagar, Saravanampatti, Coimbatore, Tamilnadu – 641 035

The objective of the project is setting up of a coconut shell charcoal briquettes manufacturing unit with a capacity to produce 4.00 MT Coconut Shell Charcoal Briquettes per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(RRs. in lakh)		
Land	Lease	-	-
Building (Renovation) & Civil works	5.10	5.10	1.28
Plant & Equipments	76.00	75.40	18.85
Working Capital margin	1.00	-	-
TOTAL	**82.10**	**80.50**	**20.13**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 20.13 lakh**.

31. Setting up of a Coconut Shell Charcoal Manufacturing Unit – M/s Shellco Charcoals India, Pathaikkara Post, Perinthalmanna, Malappuram Dist, Kerala – 679 322

The objective of the project is setting up of a coconut shell charcoal manufacturing unit with a capacity to process 30.00 MT coconut shells per day for manufacturing 10.00 MT shell charcoal.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Civil works for Building and water harvesting structure	17.04	17.04	4.26
Plant & Equipments (Pits,Lids, Chimney)	25.53	25.53	6.38
Working Capital margin	7.51	-	-
TOTAL	**50.08**	**42.57**	**10.64**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 10.64 lakh**.

Market Promotional Projects

32. Market Analysis of Packed Tender Coconut Water in India - Institute of Agri Business Management, Swami Keshwanand, Rajasthan Agricultural University, Bikaneer-334 006

The objective of the project is to carry out Market Analysis of Packed Tender Coconut Water in India.

S.No.	Particulars	Amount in Lakh
1	Senior Research Fellow(1 Post) (@ Rs.25,000 pm +HRA)	2.10
2	TA/DA	2.00
3	Computer & Accessories	0.25
4	Analysis and Printing of report	0.65
5	Contingencies	0.50
	TOTAL budget for project	**6.00**

After detail discussion, PAC suggested that one major market from South India should also be included. Further sample size is very small so it should be increased to 100 per centre and seasonal variations should also be included. The export data from manufacturers with capacity may be included and strategy should also be included. **PAC approved the project for a period of one year with a total project cost of Rs. 5.00 lakh.**

Other Items :-

1. Project for Modernisation of Coconut Oil Mill - M/s Rajas Oil and Flour Mill, 3/468 A, Poolakkode Post Choloor, NIT - Via, Kozhikode, Kerala (Proprietor-Shri. Aputty.P).

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	2.50	2.50	0.63
Plant & Machinery	5.16	5.16	1.29
Working Capital Margin	3.00		
Total	**10.66**	**7.66**	**1.92**

After detail discussion, PAC approved the project with a total financial assistance of **Rs.1.92 lakh**. PAC authorised the Chairman CDB to release the subsidy in one installment after inspection based on the inspection report.

2. Setting up of a Unit for the Production of Dietary Fibre From Coconut Flour- M/s. Vama Oil Private Ltd, 3/117, Peedampalli Main Road, Peedampalli Post, Coimbatore-641016: Deferred by 50th PAC for next PAC.

The objective of the project is setting up of a unit for the Production of Dietary Fibre From Coconut Flour with a capacity to process 4.00 MT of coconut flour per day to produce 1.20 MT Dietary Fiber.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakhs)		
Land	Lease	-	-
Building & Civil works (including ETP)	35.00	20.00	5.00
Plant & Equipments	150.60	150.42	37.61
Electrification	8.00	7.52	1.88
Furniture & Office Equipments	1.72	-	-
Working Capital margin	10.68	-	-
TOTAL	**206.00**	**177.94**	**44.49**

PAC noted that the project was deferred by 50th PAC for next PAC stating that the project is based on new technology endorsed by CFTRI, Mysore and neither representative of CFTRI nor the promoter was present in that PAC meeting to explain about the technology and the project.

After detail discussion, PAC approved the project with a total financial assistance of **Rs. 44.49 lakh.**

3. Ratification of Expenditure of Rs. 60,700/- incurred towards the Purchase of Desktop Computer

PAC perused on the matter and ratified the expenditure of **Rs. 60,700/-** (Rupees Sixty thousand seven hundred only) incurred for the purchase of one new desktop computer along with one TB external hard disk for the official use of MIDH Division, who monitors the activities of CDB in the Ministry.

PAC meeting concluded at 3:10 pm with vote of thanks from the Chief Coconut Development Officer, Shri Saradindu Das.

Date: 02.02.2018
Place: Ernakulum

Chief Coconut Development Officer
Member Secretary, PAC

Annexure-I

A	Project Approval Committee
1	Dr.B.N.S.Murthy Chairman, Coconut Development Board & Chairman PAC
2	Shri. P.K. Hameedkutty Deputy Agri. Marketing Advisor Directorate of Marketing & Inspection (DMI), Regional Officer, Block 'A', 6th Floor, Kendriya Bhavan, Kakkanad, Kochi-682 037 **Representative of:** The Joint Secretary & Agri. Marketing Adviser to Govt. of India, Krishi Bhavan, New Delhi-110 001.
3	Dr. Navin K Rastogi Senior Principal Scientist, Central Food Technological Research Institute (CFTRI), Mysore **Representative of:** The Director Central Food Technological Research Institute Mysore-570 020
4	Smt.Usha K. DGM, NABARD, R O, Thriuvananthapuram, Kerala **Representative of:** Chief General Manager, Technical Services Department, NABARD, Mumbai

5	Shri. Vasanthakumar P. Asst. General Manager Indian Overseas Bank Kochi-682 016 **Representative of:** Chief General Manager Indian Overseas Bank Bangalore
6	Shri Saradindu Das Chief Coconut Development Officer Coconut Development Board & Member Secretary, PAC
C	**Officials of CDB**
1	Shri. E. Aravazhi Deputy Director, CDB, Kochi
2	Shri R. Jnanadevan Deputy Director, CDB, Kochi
3	Shri S.S. Choyal Deputy Director, CDB, Kochi
4.	Shri Sreekumar Poduval Processing Engineer, CIT, Vazhakulam, Aluva
5.	Shri K.S. Sebastian Assistant Director (Mkg.), CDB, Kochi
6.	Shri P. Sabareenathan Finance Officer, CDB, Kochi
7.	Shri V.C.Vasanthkumar Statistical Officer, CDB, Kochi
8.	Kum. Sharon Mariam Jacob Processing Engineer (on contract, CDB, Kochi)

Proceedings of the 52nd Meeting of the Project Approval Committee (PAC) of Technology Mission on Coconut held at Kochi on 14th January 2019

The 52nd meeting of the Project Approval Committee (PAC) of Technology Mission on Coconut was held in the Board Room of Coconut Development Board, Kochi on **14th January 2019**. The meeting started at 11AM. Dr. Raju Narayana Swamy IAS, Chairman, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairman welcomed all the members of PAC.Thereafter agenda items were taken up one by one. The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of the 51st Project Approval Committee Meeting held on 19th January 2018

The Committee confirmed the proceedings of the 51st Project Approval Committee meeting held on 19.01.2018**.**

AGENDA No. 2: Action Taken Report on Decisions of the 51st PAC Meeting

Noted

AGENDA No. 3: New Project Proposals:

1. **Development of Potentially Viable Coconut Value Added Products- Tamil Nadu Agricultural University, Coimbatore**

The objectives of the project are as follows:

1. To standardize the technology for the production of tender coconut kernel leather.
2. To spray dry the coconut water from copra to reduce wastage.
3. To study the physico chemical changes during storage with suitable packaging materials.

PAC perused the recommendations of the ISC and observed that the PI may concentrate on the first objective viz. standardizing the technology for the production of tender coconut kernel leather and rework the project cost accordingly. Cost of each item mentioned under the consumables head should be given in split up. Consumables are on higher side and nonrecurring contingencies need to be reviewed. Project duration should be reduced. **PAC decided that as and when the revised project is received (rectifying**

the aforesaid defects as well as incorporating the observations of ISC) the same may be resubmitted for consideration of PAC.

2. **Smart Packaging Intervention to Enhance the Quality and Shelf Life of Infrared Dried Coconut Products- ICAR- Central Institute of Fisheries Technology, Kochi,**

The objectives of the project are as follows:

1. To design and develop energy efficient hot air assisted infrared dryer for coconut products.
2. To optimize drying conditions for coconut products in hot air assisted infrared dryer and to compare the quality of products with traditional methods.
3. To assess the effect of different packaging material on the quality and shelf life of dried coconut products.
4. To study quality and shelf life enhancement of dried coconut products and coconut oil packed using oxygen scavenger.

PAC perused the recommendations of the ISC and after detailed discussions came to the conclusion that the project need not be considered for funding under TMoC and **did not approve the project for funding.**

3. **Development of Sensory Lexicon for Selected Coconut Based Products- CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. Development of Sensory Lexicon for selected Coconut based Products.
2. Examining various value added products from Coconut processing, for sensory attributes Using Descriptive Sensory Analysis.
3. Identifying clear and specific terminology for each sensory quality characteristic of the selected products.
4. Defining each sensory attribute with a simple and easily understandable statement along with a reference sample.
5. Correlating the specific terminologies with the characteristic chemical compound, using instrumental measures.

PAC perused the recommendations of the ISC and **approved the project with a total project cost of Rs. 10.45 lakh with a project period of two years.**

4. **Development of Coconut based products for sustenance in sports- CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. To develop Coconut based food products for sustenance in sports.
2. To monitor the levels of bio-actives during prolonged storage.
3. Sensory analysis and nutritional labeling of the developed product.
4. Field studies to evaluate the efficacy of the product at a sports complex.
5. To transfer the developed technology to an industry for commercialization.

PAC perused on the recommendations of the ISC and **approved the project with a total project cost of Rs. 25.25 lakh with a project period of three years subject to the following conditions:-**

(a) Equipments like homogenizer need to be provided by CFTRI and gadgets used in the project must be specifically mentioned.
(b) Institutional charges shall be limited to 10% of the recurring charges.

5. Development of shelf-stable coconut sap (*Neera*) in rigid and flexible packages- CSIR-Central Food Technological Research Institute, Mysuru.

The objectives of the project are as follows:

1. Exploring the possibility of collecting coconut sap without cold chain.
2. Technology for processing of coconut sap (*neera*) in flexible spouted stand-up pouches and flip-open rigid cans (200 ml) with extended shelflife (minimum 60 days).

PAC perused the recommendations of the ISC and after detailed discussion came to the conclusion that the project need not be considered for funding under TMoC and **did not approve the project for funding.**

6. **Development of a process for preparing synbiotic beverage using mature coconut water-CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. To develop a functional beverage using mature coconut water.
2. Selection of suitable probiotic strains for preparation of the beverage.
3. To select suitable prebiotics for fortification with the beverage.
4. Sensory analysis and nutritional labeling of the developed product.

5. Nutritional studies of the developed synbiotic beverage.
6. Shelf life studies of the synbiotic beverage.
7. To-transfer the developed technology to an industry for commercialization

PAC perused the recommendations of the ISC and after detailed discussion came to the conclusion that the project need not be considered for funding under TMoC and **did not approve the project for funding.**

7. **Shelf life increase of Neera – a process for small and village scale production-CSIR-Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. To develop minimum intervention methods for increasing the shelf life of Neera to 3 days.
2. To make the process simple but efficient for micro scale producers to preserve neera.

PAC perused the recommendations of the ISC and after detailed discussion came to the conclusion that the project need not be considered for funding under TMoC and **did not approve the project for funding.**

8. **Accelerated production of mature coconut water Vinegar- CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. To accelerate the process of vinegar production from 4-6 weeks to 10-15 days.
2. To produce a consistently similar product with defined cultures and process.

PAC perused the recommendations of the ISC and requested the PI to rework on the total project cost to limit the institutional charges to 10% of the Recurring charges and to furnish the details of consumables. **Non recurring contingencies need to be reviewed and the duration of the project need to be limited to 18 months. PAC decided that as & when the revised project is received (rectifying the aforesaid defects as well as incorporating the observations of ISC) the same may be resubmitted for consideration of PAC.**

9. **Development of a Process for Fractionation of Virgin Coconut Oil (VCO) to obtain Medium Chain triglycerides (MCTs) and other Fractions-CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. Characterization of the raw material: Physico- chemical, functional and nutraceutical properties of the conventionally produced coconut oil and extracted virgin coconut oil.

2. Formulation and standardisation of two MCTs based products (beverage mix and chocoloates) and studies of their physic chemical characteristics, sensory quality and storage stability of prepared products.

3. Identification of suitable process/methodology for isolation of MCTs from virgin coconut oil using thermal and non-thermal process and evaluation of physico-chemical and biochemical properties of MCTs and other fractions.

4. Scale- up/ large scale trials of the process for the separation of MCTs from VCO, and demonstration and transfer of technology.

PAC perused the recommendations of the ISC and **decided to defer the project.**

10. **Characterization and biological effects of Unsaponifiable matter in Conventional and Cold Pressed Virgin Coconut Oil-CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. To prepare unsaponifiable matter from commercial (CO) and virgin coconut oil (VCO)
2. To analyse various nutraceuticals from unsaponifiable matter of CO and VCO
3. To assess the *in-vitro*biological activities of unsaponifiable matters in both the oils.

PAC perused the recommendations of the ISC and after detailed discussion came to the conclusion that the project need not be considered for funding under TMoC and **did not approve the project for funding.**

11. **Development of fermented tender coconut water with lactic cultures and its functional applications-CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. To optimize different cultural conditions for the fermentation of tender coconut water with lactic acid bacterial cultures.
2. To extract and analyse various biochemical compounds from the fermented product.
3. To study antimicrobial activities of fermented product (FP)
4. Preparation of FP based food product utilising fermented coconut water for targeted ailment.

PAC perused the recommendations of the ISC and suggested to reduce the project duration and to cut down the cost at consumables and to mention them specifically in the project. Further PAC also informed the PI to ascertain the cost of equipment particularly cooling centrifuge on actual basis and to rework the total project cost accordingly. **PAC decided that as & when the revised project is received (rectifying the aforesaid defects) the same may be resubmitted for consideration of PAC.**

12. **Continuous Production of Coconut Oil and Coconut Milk Powders using Refractance Window Drying Technique- Indian Institute of Food Processing Technology, Thanjavur**

The objectives of the project are as follows:

1. Development of continuous type refractance window in drying system.
2. Optimization of process parameters for the production of coconut oil powder and coconut milk powder in the developed unit.
3. Quality evaluation and comparison against conventional drying approaches.

PAC perused the recommendations of the ISC and **decided to defer the project.**

13. **Development of innovative coconut products for improving livelihood of coconut farmers- Indian Institute of Food Processing Technology,Thanjavur**

The objectives of the project are as follows:

1. To standardize production process techniques for primary and secondary value added products from coconut.
2. To evaluate the physico-chemical and organoleptic properties of formulated value added coconut products.
3. To study commercial viability of developed products through pilot scale production and popularize developed processing techniques through technology transfer programme.

PAC perused the recommendations of the ISC and **decided to defer the project.**

14. **Development of Sensors for Quality Evaluation of Coconut Oil- Indian Institute of Food Processing Technology, Thanjavur**

The objectives of the project are as follows:

1. To develop amphrometric biosensor for the confirmative test of Virgin Coconut Oil(VCO)
2. To develop a capacitive type sensor for the detection of Peroxide value (PV) of Coconut Oil.
3. Validation of the developed sensors with conventional methods

PAC perused the recommendations of the ISC and **decided to defer the project.**

15. **CDB-IIFPT Common Incubation Facility for Production of Virgin Coconut Oil and its Value added Products to Increase Coconut Farmer's Income- Indian Institute of Food Processing Technology, Thanjavur**

The objectives of the project are as follows:

1. To set up a complete line for Virgin Coconut Oil Processing and Packaging.
2. To extend the VCO processing lines with subsequent lines for preparation of value added products from the residual cake of VCO.
3. To extend the benefits to stakeholders and farmers by conducting trainings and opening up the line for incubation services.

PAC perused the recommendations of the ISC and **decided to defer the project.**

16. **Effect of Virgin Coconut Oil on Cardiometabolic Parameters in Patients with Dyslipidemia: A Randomized, add- on, Placebo Controlled Clinical Trial- All India Institute of Medical Sciences, Bhubaneswar**

The objectives of the project are as follows:

1. To evaluate the change in serum lipoprotein levels over 8 weeks from baseline
2. To evaluate the change in cardiovascular risk indices (Atherogenic index, Coronary risk index, Cardiovascular risk index) over 8 weeks from baseline.
3. To evaluate the change in plasma Lipoprotein (a) levels over 8 weeks from baseline.
4. To evaluate the body fat composition over 8 weeks from baseline.
5. To evaluate change in lipid peroxidation over 8 weeks from baseline.

PAC perused the recommendations of the ISC and **approved the project with a total project cost of Rs. 20.41 lakh with a project period of two years.**

17. **Study the Efficacy of Virgin Coconut Oil in Preventing Oral Cancer in Patient with Oral Premalignant Lesion- All India Institute of Medical Sciences, Bhubaneswar**

The objectives of the project are as follows:

1. To determine the clinical response of oral premalignant lesions to 12 weeks of VCO intervention.
2. Histologic and molecular response to VCO intervention in the target lesion

PAC perused the recommendations of the ISC and **approved the project with a total project cost of Rs. 31.74 lakh with a project period of three years.**

18. **Improved Coconut Wood Canoes for Small Scale Fishing Sector of Southeast Coast of India-ICAR- Central Institute of Fisheries Technology, Kochi**

The objectives of the project are as follows:

1. To assess the ecotoxicity of biocides used for preservation of coconut wood on the aquatic environment.
2. To design and construct small scale fishing vessels for traditional Fishermen of southeast coast of India.
3. Performance evaluation of the experimental fishing vessels with coconut wood.

PAC perused the recommendations of the ISC and **approved the project with a total project cost of Rs. 34.72 lakh with a project period of three years.**

19. **Identification of bioactives from virgin coconut oil for the amelioration of Alzheimer related complications-CSIR- Central Food Technological Research Institute, Mysuru**

The objectives of the project are as follows:

1. Comparison of nutraceutical potential of Virgin coconut oil extracted using the process developed at CSIR-CFTRI with commercially available samples of virgin coconut oil and regular coconut oil

2. Evaluation of virgin coconut oil for its antioxidative potential and anti-inflammatory effects and studies of its bioavailability.
3. Influence of VCO fractions on the amelioration of Alzheimer's disease in clinical trials.

PAC perused the recommendations of the ISC and **decided to defer the project.**

20. **Robotic Based Automatic Coconut Harvesting System-Indian Institute of Food Processing Technology, Thanjavur**

The objectives of the project are as follows:

1. Robotic based Automatic Coconut Harvesting System includes robotic arm, flying or tree climbing robotic system, wireless control system and Cutting system will be designed and developed.
2. Performance evaluation of the developed system in comparison with existing approaches in terms of efficiency and cost effectiveness.
3. Dissemination of the technology to farmers and stakeholders.

PAC perused the recommendations of the ISC and observed that a technology partner of the stature of Indian Institute of Science, Bangalore is desirable. Moreover salary expenses & non recurring expenses are on the higher side. Institutional charges need to be limited to 10% of the recurring charges. The breakup of the budget for each year needs to be provided. **PAC decided that as & when the revised project is received (rectifying the aforesaid defects) the same may be resubmitted for consideration of PAC.**

21. **Project proposal for tender coconut vending cart &coconut ice-cream vending machine- Dept of Agriculture, Govt of Tamil Nadu**

PAC discussed the project in detail and came to a conclusion that the project is worth undertaking as it will make a dent on the livelihood of the rural poor. However it cannot be undertaken as per the TMOC norms. Hence it was decided to address GOI requesting for special sanction to implement the project in relaxation of TMOC norms.

22. **Pest and Disease Surveillance on Coconut Palms by Unmanned Aerial Vehicles (UAV)- ICAR- Central Plantation Crops Research Institute, Kasargod**

The objectives of the project are as follows:

1. To develop an early detection system for surveillance of important diseases and pests of coconut palms using real time images captured through multispectral/ hyper spectral camera fitted to an UAV.

2. To determine the feasibility of real time spot delivery of biorationals/ bioagents to the pest or disease affected palms.
3. To validate data generated by UAV under real field condition.

PAC perused the recommendations of the ISC and **approved the project with a total project cost of Rs. 49.90 lakh with a project period of two years, subject to the following conditions:-**

(a) Institutional charges should be removed.
(b) CPCRI shall ensure that technology development under the project will have a joint patenting with CDB.
(c) Project funding shall be to CPCRI. CPCRI will ensure that all rules, formalities& procedures are followed in implementation & will execute MoU in format with their technological partner in the best interest of CDB & CPCRI.

23. **Integrated Management Techniques for Safe Storage of Copra-Indian Institute of Food Processing Technology, Thanjavur**

The objectives of the project are as follows:

1. To study the life cycle of red- legged ham beetle (N.*rufipes*) and other insects in copra and to access the quality and damage of copra during storage.
2. To develop and evaluate different techniques viz., Radio frequency, microwave, hot air and botanicals for management of insects and microbial contamination during processing and storage of copra.
3. To integrate the different effective techniques to develop Integrated Management System (IMS) and evaluate for safe storage of copra.
4. To disseminate the IMS through training, demonstration, conference and seminar to various stakeholders like farmers, coconut processors and traders.

PAC perused on the recommendations of the ISC and **decided to defer the project.**

24. **Establishment of Goniozus Parasitoid Breeding Lab- DSP Farm, Mandya, Karnataka**

The objective of the project is to establish a Parasite Breeding Lab for the Production of *Goniozus nephantidis* (12 lakh parasitoid) at DSP Farm , Mandya for controlling Black Headed caterpillar in coconut plantations. PAC observed that the title of the project may be changed as up gradation of the lab.

PAC discussed the project in detail and authorized Director, CFTRI to depute a technically competent person to inspect the lab and furnish a report. PAC decided to defer the project till the report is so received.

25. **Construction/Renovation of Parasite Production Lab to control Black Headed Caterpillar in Karnataka- Horticulture Department, Government of Karnataka**

The objectives of the project are as follows:

1. To control the Black Headed Caterpillar by increasing the production of parasites.
2. To distribute parasites free of cost to the farmers of affected coconut gardens.
3. To minimize the use of chemical pesticides.
4. To enhance the production and productivity of the crop by effective control of BHC.

PAC perused the recommendations of the ISC and noted that the reply of Govt. of Karnataka has not been received so far. PAC decided to defer the project till the report is so received.

The meeting concluded at 1:10 pm with vote of thanks by the chair.

This is issued with the approval of the Chairman, Coconut Development Board and Chairman, Project Approval Committee (TMOC).

Deputy Director
Coconut Development Board
Kochi

Annexure-I

A	Project Approval Committee
1	Dr. Raju Narayana Swamy IAS Chairman, Coconut Development Board & Chairman PAC
2	The Horticulture Commissioner Department of Agriculture & Cooperation Krishi Bhavan, New Delhi-110 001 **Represented by** Shri R R Sharma Assistant Commissioner (Hort) Krishi Bhavan, New Delhi-110 001
3	The Director Central Food Technological Research Institute,Mysore-570 020 **Represented by** Dr Raghavarao K S M S Director − Central Food Technological Research Institute (CFTRI) Council of Scientific and Industrial Research (CSIR)
4	Shri Ashok Kumar Nayar AGM, DDM Nabard Idukki **Representative of:** Chief General Manager, Technical Services Department, NABARD, Mumbai
5	The Managing Director & Chief Executive Officer Indian Overseas Bank 763, Anna Salai, Chennai-600 002 Ph: 044-28519500 **Represented by** Shri Philip Y. Chief Regional Manager, Indian Overseas Bank Regional Office, No.2384, Vettukattil Building, 5th Floor Jose Jn., M G Road, Ernakulam, Kochi

6	Shri. P.K. Hameedkutty Deputy Agri. Marketing Advisor Directorate of Marketing & Inspection (DMI), Regional Officer, Block 'A', 6th Floor, Kendriya Bhavan, Kakkanad, Kochi-682 037 **Representative of:** The Joint Secretary & Agri. Marketing Adviser to Govt. of India, Krishi Bhavan, New Delhi-110 001.
C	**Officials of CDB**
1	Shri. R. Madhu Secretary, CDB, Kochi
2	Dr. Rajat Kumar Pal Deputy Director, CDB, Kochi
3	Smt. Deepthi Nair. S. Deputy Director, CDB, Kochi
4.	Shri Sreekumar Poduval Processing Engineer, CIT, Vazhakulam, Aluva
5	Smt. Radha P.G. Audit Officer, CDB, Kochi
6.	Shri P. Sabareenathan Finance Officer, CDB, Kochi
7.	Shri V.C.Vasanthkumar Statistical Officer, CDB, Kochi
8	Smt. Mini Mathew Publicity Officer
9	Smt. Jayashree A. Development Officer, CDB, Kochi
10.	Kum. Sharon Mariam Jacob Processing Engineer (on contract, CDB, Kochi)
11.	Kum. Ciby Susan Cherain Processing Engineer (on contract, CDB, Kochi)

Proceedings of the 53rd Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at Kochi on 29th April 2019

The 53rd meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held in the Board Room of Coconut Development Board, Kochi on **29th April 2019**. Dr. Usha Rani IAS Chairman, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairman welcomed all the members of PAC and agenda were taken up. The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 52nd Project Approval Committee Meeting held on 14th January 2019

The Committee confirmed the proceedings of the 52nd Project Approval Committee meeting held on 14.01.2019**.**

AGENDA No. 2: Action Taken Report on Decisions of the 52nd PAC Meeting

The committee perused the action taken on decisions of the 52nd meeting of Project Approval Committee. Deputy Director (Dev) informed that out of 6 (research) projects sanctioned by the 52nd PAC, in 6 projects action has been taken, fund released and projects are progressing. A Project on "**Accelerated production of mature coconut water Vinegar"** submitted by CSIR- Central Food Technological Research Institute, Mysuru was placed before 52nd PAC and it was decided for resubmission of the revised project. PAC members during the 53rd meeting opined that being a feasible project the same can be considered after obtaining the revised project. Rest cases which were deferred can be rejected.

AGENDA No. 3: Approval of New Project Proposals:

1. **Process Development for the Isolation of Coconut Protein from the Meat after Virgin Coconut Oil Extraction and its Characterization Studies- CSIR-National Institute for Interdisciplinary Sciences and Technology (NIIST), Trivandrum, Kerala.**

The objectives of the project are as follows:

- Process optimization for the extraction of proteins from the meat that is generated as spent in virgin coconut oil manufacturing industry.
- The isolated proteins will be studied for its physiochemical properties as well as biological effects.

PAC perused on the recommendations of the ISC and **decided to reject the project.**

2. **Estimation of chemical contaminants in fresh/packaged tender coconut water/commercial Coconut milk- National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, Andhra Pradesh**

The objectives of the project are as follows:

1. To administer the questionnaire on the types of the recommended/non-labelled or non-recommended pesticides that are applied on to the coconut crops from the selected farms of the identified districts of the six major States in India.

2. To assess the extent of chemical contamination with pesticide residues and heavy metals (Pb, Cr, Co, Zn,) including EDCs like Arsenicin fresh/packaged/bottled tender Coconut water samples collected from the major coconut cultivating States.

3. To identify the source of chemical contamination including EDCs through the analysis of soil samples of coconut crop cultivated areas using LC-MS-MS and ICPOES.

4. To assess the marketed coconut milk samples for chemical contaminants including EDCs using LC-MS-MS and ICPOES.

PAC perused the recommendations of the ISC and **decided to reject the project.**

3. **Mission mode programme on the management of coconut rugose spiralling whitefly Aleurodicus Rugiopercaltus Martin with nymphal parasitoid, Encarisa guadeloupae Viggiani- Tamil Nadu Agricultural University (TNAU), Coimbatore**

The objectives of the project are as follows:

1. Mass production of parasitoid, Encarisa guadeloupae in shade house/field laboratories.
2. Field released and impact analysis of the parasitoid, E. guadeloupae.
3. Management of sooty mould
4. Technology dissemination

PAC discussed the project in detail and **approved the project subject to the conditions that the observations of ISC are incorporated in the project.**

4. **Frontline Demonstration on Integrated Pest management and Integrated Disease Management in coconut in Assam- ICAR-Central Plantation Crops Research Institute (CPCRI), Research Centre, Kahikuchi, Guwahatti, Assam.**

The objectives of the project are as follows:

1. To organize Frontline Demonstration on IPM and IDM for creating awareness, knowledge and adoption of technologies among the farmers.
2. To empower the coconut farmers, farm women and rural youth through capacity building at various levels to enhance technology utilization and dissemination.

PAC perused on the recommendations of the ISC and observed that since there is no research and demonstration in the project, the same may be resubmitted to the LODP scheme of CDB.

5. ***Methylobacterium* mediated rejuvenation of Coconut gardens affected by Gaja Cyclone in Cauvery delta region of Tamil Nadu- Tamil Nadu Agricultural University (TNAU), Thanjavur**

The objectives of the project are as follows:

1. Standardization of dosage, time interval and method of application of *Methylobacterium* for the cyclone affected palm trees and newly established coconut seedlings.
2. To assess the physiological changes and growth in *Methylobacterium* treat coconut trees in host plant system.
3. Multilocation trial will be conducted to assess the effect of *Methylobacterium* application on growth and establishment of coconut trees.

PAC perused the recommendations of the ISC and **decided to defer the project.**

Desiccated Coconut Powder Manufacturing Units

6. **Setting up of Desiccated Coconut Powder Manufacturing Unit - M/s. Hema Coconut Industry, Angarayanallur - 621 802, Udayarpalayam Tk, Ariyalur Dist, Tamilnadu**

The objective of the project is setting up of a desiccated coconut powder manufacturing unit with a capacity to process 10,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works (including ETP)	30.00	30.00	10.00
Plant & Equipments	77.30	77.30	25.74
Electrification & Erection	4.00	3.86	1.28
Misce. Expenses	1.00	-	-
Preliminary & Pre op. expenses	0.50	0.50	0.16
Working Capital margin	7.50	-	
TOTAL	**120.30**	**111.66**	**37.18**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 37.18 lakh**.

7. **Setting up of a Desiccated Coconut Powder Manufacturing Unit - M/s. Cape Traditions Pvt. Ltd, Holy Cross Colelge Road, Nedunganvillai, Nagercoil, Tamilnadu**

The objective of the project is setting up of a desiccated coconut powder manufacturing unit with a capacity to process 40,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land & Land Dev.	14.95	-	-
Building & Civil works	62.90	49.66	12.41
Plant & Equipments	148.10	134.12	33.53
Electrical installation	11.90	6.70	1.67
ETP	7.90	7.88	1.97
Pre op. expenses	6.00	1.98	0.50
Working Capital margin	50.00	-	-
TOTAL	**301.75**	**200.34**	**50.08 Limited to 50.00**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 50.00 lakh**.

8. **Setting up of a Desiccated Coconut Powder Manufacturing Unit - M/s. Sri Coco Products, 11, Sakthi Co-op Industrial Estate, Udumalai Road, Pollachi, Coimbatore Dist., Tamilnadu.**

The objective of the project is setting up of a desiccated coconut powder manufacturing unit with a capacity to process 50,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works (renovation)	-	-	-
Plant & Equipments	137.00	137.00	34.25
ETP	5.60	5.60	1.4
TOTAL	**142.60**	**142.60**	**35.65**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 35.65 lakh**.

9. **Expansion of the Existing Desiccated Coconut Powder Manufacturing Unit - M/s. Indian Coconut Product, SF – 98/A1, Earipatty Village and Post, Dharapuram Road, Pollachi, Tamilnadu.**

The objective of the project is to expand the existing desiccated coconut powder manufacturing unit with a capacity to process 110000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works (renovation)	4.25	-	-
Plant & Equipments	58.61	58.61	14.65
ETP	5.75	5.75	1.44
TOTAL	**68.61**	**64.36**	**16.09**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.16.09 lakh.**

Frozen Shredded and Grated Coconut Units

10. **Setting up of a Frozen Shredded & Grated Coconut Unit - M/s. Mafy Foods, A/P Shaunagar Parite, Tal-Karveer, Dist. Kolhapur, Maharashtra.**

The objective of the project is setting up of a frozen shredded & grated coconut unit with a capacity to process 15,000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Internal Road Dev.(specify)	2.58	-	-
Building & Civil works	41.34	34.00	8.50
Plant & Equipments	116.97	116.97	29.24
ETP	0.84	0.84	0.21
Erection & Commissioning	2.88	2.88	0.72
Working Capital margin	17.50	-	-
TOTAL	**182.11**	**154.69**	**38.67**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 38.67 lakh.**

11. **Setting up of a Frozen Coconut gratings and Coconut Paste Unit - M/s. Sree Saravana Oil Mills, 306 B, 3rd Street, Pattaravakkam, Sidco Industrial Estate, Ambattur, Chennai, Tamilnadu.**

The objective of the project is setting up of a frozen coconut gratings and coconut paste unit with a capacity to process 10,000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land with building	Lease	-	-
Plant & Machinery	51.92	51.92	12.98
ETP	3.66	3.66	0.92
Estimate for RO Plant	2.54	2.52	0.63
Electrification	6.63	2.60	0.65
Generator	5.38	5.00	1.25
Miscellaneous Fixed Assets	1.37	-	-
Preliminary & Pre-operative expenses	2.00	0.66	0.16
Soft Loan	4.50	-	-
TOTAL	**78.00**	**66.36**	**16.59**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 16.59 lakh**.

Virgin Coconut Oil Manufacturing Unit

12. **Setting up of a VCO manufacturing unit - M/s. Mahadev Oil Extractors, Senniappa Nagar, Dharapuram, Tirupur Dist., Tamilnadu**

The objective of the project is setting up of a VCO manufacturing unit with a capacity to process 5000 coconut per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works	10.00	-	-
Plant & Equipments	41.40	41.40	10.35
ETP	1.80	1.80	0.45
Electrification	1.50	1.50	0.37
Technical Know-how	0.60	0.59	0.15
Working Capital margin	3.17	-	-
TOTAL	**58.47**	**45.29**	**11.32**

After detail discussion, PAC approved the project with a maximum eligible subsidy of Rs**. 11.32 lakh**.

Integrated Coconut Processing Unit

13. **Setting up of an Integrated Coconut Processing Unit for Coconut products like Coconut Milk Powder, Coconut Sugar - M/s. JCP International Pvt. Ltd., National Highway, Kutiyana - 362 650, Dist. Porbandar, Gujarat**

The objective of the project is setting up of a Virgin Coconut Oil, DCP & Vinegar unit capacity with a capacity to process 33,00,000 coconuts/- MT per annum.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	25.00	25.00	6.25
Plant & Equipments	155.06	149.05	37.26
Electrification	6.80	6.80	1.70
Other Assets	82.57	-	-
Pre-operative Expenses	2.57	1.81	0.45
Working Capital margin	53.00	-	-
TOTAL	**325.00**	**182.66**	**45.66**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 45.66 lakh**.

Spray dried coconut milk powder manufacturing unit

14. **Setting Up of a spray dried coconut milk powder manufacturing unit - M/s K.L.F Nirmal Industries (P) Ltd., Fr. Dismas Road, P.B.No. 40, Irinjalakkuda, Thrissur (Dist), Kerala**

The objective of the project is setting up of a spray dried coconut milk powder with a capacity to process 21,820 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works (renovation)	85.00	69.00	17.25
Plant & Equipments	185.30	150.03	37.51

Furniture & Fittings	1.50	-	-
Electrical & Electronic Installations	17.02	7.50	1.87
Pre operative expenses	6.46	2.26	0.56
Working Capital margin	24.14	-	-
TOTAL	**319.42**	**228.79**	**57.19 Limited to 50.00**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 50.00 lakh**.

Coconut Milk manufacturing unit

15. **Setting up of a Coconut Milk and other by products manufacturing unit - M/s. Nina Foods, D-7, M.I.D.C., Gokul Shirgaon, (opp. Lada Pumps), Kolhapur, Maharashtra**

The objective of the project is setting up of a coconut milk and other by products manufacturing unit with a capacity to process 12,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works (Renovation)	7.95	7.95	1.99
Plant & Equipments	63.45	55.98	13.99
Electrical installation	4.50	2.80	0.70
Others	2.00		
TOTAL	**77.90**	**66.73**	**16.68**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 16.68 lakh**.

Tender Coconut Water Packing Unit

16. **Modernisation and Automation of the existing Tender Coconut Water Packing Unit- M/s. Agricoles Naturel Foods (P) Ltd, Kuttur PO, Thrissur, Kerala**

The objective of the project is modernisation and automation of the existing Tender Coconut Water Packing Unit with a capacity to process 15000 Tender coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	1.48	1.47	0.37
Plant & Machinery	28.08	27.30	6.82
Working Capital Margin	14.56	-	-
TOTAL	**44.12**	**28.77**	**7.19**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 7.19 lakh.**

Coconut Wood Briquette Manufacturing Unit

17. **Setting up of a Coconut Wood Briquette Manufacturing Unit – M/s Sundaram Bio Mass, Bhagavathy Amman Koil Street Pappammalpuram, Audipatti Post - 625512, Aundipatti Theni District, Tamil Nadu**

The objective of the project is setting up of a coconut wood briquette manufacturing unit with a capacity to process 10 tons of coconut wood per day to produce 6 tons of coconut wood briquettes.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in Lakh)		
Land	Lease	-	-
Building & Civil works	16.10	-	-
Plant & Equipments	52.07	52.07	13.01
Electrification	1.50	1.50	0.37
Transport and erection	1.00	0.52	0.13
Preliminary & Pre op. expenses	2.20	0.69	0.17
Contingencies	2.59	-	-
Other Assets	0.50	-	-
Working Capital margin	5.80	-	-
TOTAL	**81.76**	**54.78**	**13.69**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 13.69 lakh.**

Activated Carbon manufacturing Units

18. **Setting up of a Activated Carbon manufacturing Unit - M/s. Vadivel Coco tech Pvt. Ltd, 41, Kaliamman Kovil Street, Viswanatham Road, Sivakasi - 626 123, Tamilnadu**

The objective of the project is setting up of an activated carbon manufacturing unit with a capacity to produce 1750 Tons of Activated Carbon per annum.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	100.00	-	-
Building & Civil works	403.21	346.30	86.57
Plant & Equipments	922.88	922.88	230.72
Preliminary & Pre op. expenses	35.00	12.69	3.17
Others	65.00	-	-
Working Capital margin	138.00	-	-
TOTAL	**1664.09**	**1281.87**	**320.46 Limited to 50.00**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 50.00 lakh.**

19. **Setting up of a Activated Carbon Manufacturing Unit - M/s. Acaarb Industries Pvt. Ltd, Mathakovil Street, Ganeshapuram, Trichy Road, Namakkal – 637001, Tamil Nadu**

The objective of the project is setting up of an activated carbon manufacturing unit with a capacity to process 3 tons of Activated Carbon per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	2.00	-	-
Building & Civil works	30.00	30.00	7.50
Plant & Equipments	295.00	250.40	62.60
Electrical Installation	5.00	5.00	1.25
Pre-operative expenses	5.00	2.85	0.71
Working Capital Margin	13.00	-	-
TOTAL	**350.00**	**288.25**	**72.06 Limited to 50.00**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 50.00 lakh.**

20. **Expansion of the existing Coconut shell based Steam Activated Carbon unit - M/s. Kalpaka Chemicals Pvt. Ltd., 4/133X, Muthammal Colony, IIIrd Street, Tuticorin Dist., Tamil Nadu.**

The objective of the project is setting up of an activated carbon manufacturing unit with a capacity to process 90 MT coconut shell charcoal per day for producing Steam Activated Carbon.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev.	15.00	-	-
Building & Civil works	158.08	158.08	39.52
Plant & Equipments	424.62	381.85	95.46
Electrical Installation	60.00	19.09	4.77
Diesel Generator set	28.35	5.00	1.25
ETP	31.57	10.00	2.50
Technical know-how	-	-	-
Pre operative expenses	7.38	5.74	1.43
Working Capital margin	-	-	-
TOTAL	**725.00**	**579.76**	**144.93 Limited to 16.94**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 16.94 lakh.**

Shell Charcoal Manufacturing Unit

21. Setting up of a Shell Charcoal manufacturing unit- M/s Zelos Industries, 85/1, Kilpatti- Kulidhigai Road, Vardapalayam, Perenambet Taluk, Vellore District, Tamil Nadu

The objective of the project is setting up of a shell charcoal manufacturing unit with a capacity to process 16.6 tons of coconut shell per day to produce 5tons of shell charcoal

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works	25.00	-	-

Plant & Equipments	60.00	59.60	14.90
Electrification	3.00	2.98	0.74
Office furniture	3.00	-	-
Working Capital margin	12.00	-	-
TOTAL	**103.00**	**62.58**	**15.64**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 15.64 lakh subject to the condition that NOC from Pollution Control Board is submitted.**

Coconut Oil Manufacturing Unit

22. Setting up of a Coconut Oil Manufacturing Unit- M/s. Kuttiady Coconut Farmer's Producer Company Ltd, Mundavayal, Vannothichira PO, Kozhikode, Kerala

The objective of the project is setting up of a coconut oil manufacturing unit with a capacity to process 25,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs in lakh)		
Land	Own	-	-
Building	40.00	25.00	6.25
Plant & Machinery	85.00	83.93	20.98
Technical know-how	0.50	-	-
Wooden racks & shelf for storage of products	1.50	-	-
Preliminary & Pre op. expenses	1.50	1.09	0.27
Working Capital margin	50.00	-	-
TOTAL	**178.50**	**110.02**	**27.50**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 27.50 lakh.**

Copra making unit

23. Setting up of copra making unit - M/s. Iritty Coconut Farmer's Producer Co. Ltd., Palapuzha, Kakkayangad PO, Kannur

The objective of the project is setting up of a copra making unit with a capacity to process 10,000 coconuts per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & civil works	10.00	10.00	2.50
Plant & Equipments	13.01	13.01	3.25
Working Capital margin	7.00	-	-
TOTAL	**30.01**	**23.01**	**5.75**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 5.75 lakh.**

D. Other Items

RATIFICATIONS

24. Ratification of fund sanctioned and released for Coconut Nursery at KVK, Motihari, Bihar and KVK, Gorakpur, Uttar Pradesh to establish two small coconut nurseries

An amount of Rs.3.30 lakh has been sanctioned and released to the Coconut Development Board, Regional Office, Patna for establishing a coconut nursery on pilot basis by sowing 10,000 seed nuts at KVK, Motihari, Bihar. Also an amount of Rs.3.55 lakh has been sanctioned and released to the Market Development cum Information Centre, Coconut Development Board, New Delhi for establishing a coconut nursery on pilot basis by sowing 10,000 seed nuts at KVK, Gorakpur, Uttar Pradesh

After detail discussion, PAC ratified an expenditure of **Rs 6.858 lakh** released to CDB, RO, Patna for establishing two small coconut nurseries**.**

25. Development of Sensors for Quality Evaluation of Coconut Oil- Indian Institute of Food Processing Technology (IIFPT) Thanjavur, Tamil Nadu for a total project cost of Rs. 59.42 lakh.

After detail discussion, PAC ratified the project cost of **Rs 59.42 lakh** and release of first installment of **Rs. 44.88 lakh.**

26. Design, Fabrication and Field Demonstration of a Neera (Kalparasa) Collection Device- ICAR-Central Plantation Crops Research Institute, Kasaragod, Kerala for a total project cost of Rs.11.20 lakh

After detail discussion, PAC ratified the project cost of **Rs 11.20 lakh** and release of first installment of **Rs. 5.60 lakh.**

27. Establishment of Dedicated Pilot Plant for virgin coconut oil by wet milling- CSIR - Central Food Technological Research Institute (CFTRI), Mysuru for a total project cost of Rs.29.40 lakh

After detail discussion, PAC ratified the project cost of **Rs 29.40 lakh** and release of first installment of **Rs.15.95 lakh.**

28. Application of coconut flour in improving functional, rheological and nutritional properties of wheat dough - CSIR - Central Food Technological Research Institute (CFTRI), Mysuru for a total project cost of Rs.14.97 lakh

After detail discussion, PAC ratified the project cost of **Rs 14.97 lakh** and release of first installment of **Rs.9.41 lakh.**

29. Design and Development of Reactor for Processing of Coconut based Beverages with UV-C Irradiation - CSIR - Central Food Technological Research Institute (CFTRI), (CFTRI), Mysuru for a total project cost of Rs.26.75 lakh

After detail discussion, PAC ratified the project cost of **Rs 26.75 lakh** and release of first installment of **Rs. 21.25 lakh.**

30. Biocontrol based management of Rugose spiralling whitefly, *Aleurodicus rugioperculatus* on coconut in Andhra Pradesh- Horticulture Research Station, Dr Y.S.R. Horticultural University Ambajipets, East Godavari, Andhra Pradesh for a total project cost of Rs.34.57 lakh

After detail discussion, PAC ratified the project cost of **Rs.34.57 lakh** and release of first installment of **Rs.20.35 lakh.**

31. Processing of coconut milk, development of beverage from curcumin enriched nanoemulsified coconut milk (partially defatted) and pineapple juice and evaluation of their health implications- Tezpur University, Tezpur, Assam and CSIR- Central Food Technological Research Institute, Mysore for a total project cost of Rs.39.83 lakh

After detail discussion, PAC ratified the project cost of **Rs.39.83 lakh** and release of first installment of **Rs. 22.17 lakh.**

32. Evaluation of Coconut Oil for Application in High Voltage Transformer- North Eastern Regional institute of Science and Technology, Nirjuli, Arunachal Pradesh for a total project cost of Rs.27.98 lakh

After detail discussion, PAC ratified the project of **Rs.27.98 lakh** release of first installment of **Rs. 13.99 lakh**.

33. Design and Development of Digital Image Database with an Android Apps and Web system for the detection of major pests and diseases of coconut of Assam for a total project cost of Rs.18.42 lakh

After detail discussion, PAC ratified the project of **Rs.18.42 lakh** and release of first installment of **Rs.11.61 lakh.**

34. Setting up Coconut Technology Development center in Assam- Coconut Development Board, Regional Office, Guwahati for a total project cost of Rs.30.00 lakh

After detail discussion, PAC ratified the project of **Rs.30.00 lakh** and release of first installment of **Rs. 15.00 lakh.**

35. CDB-IIFPT Common Incubation Facility for Production of Virgin Coconut Oil and its Value added Products to Increase Coconut Farmer's Income for a total project cost of Rs.25.00 lakh

After detail discussion, PAC ratified the project of **Rs.25.00 lakh** and release of first installment of **Rs. 12.50 lakh.**

Ball Copra Making Units

It is mentioned that a view has to be taken on pending ball copra units as it is felt that this is a routine technology. However all members of PAC felt that these units are established by small entrepreneurs, sometimes farmers and hence they are to be encouraged. Hence PAC cleared all pending ball copra units subject to satisfaction of all other requirements and documention.

36. Setting up of a Ball Copra Making Unit - Shri. Nithin Johny, Thengupallil House, Chappanthottam Post, Kozhikode Dist, Kerala

The objective of the project is setting up of a ball copra making unit with a capacity to process 1 lakh coconut per year.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Plant & Equipments	0.40		
Platform Dryer	15.00	8.75	2.19
Pre & Pre op. expenses	0.10		
Working Capital margin	1.50		
TOTAL	**17.00**	**8.75**	**2.19**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 2.19 lakh.**

37. Setting up of a Ball Copra Making Unit - Shri. Abin Poul, Thundiyil Boda making Unit Thundiyil House, Parappa Post, Kasaragod Dist, Kerala

The objective of the project is setting up of a ball copra making unit with a capacity to process 40,000 coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Plant & Equipments	0.40	-	-
Platform Dryer	9.50	3.50	0.875
Others	0.10	-	-
Working Capital margin	2.50	-	-
TOTAL	**12.50**	**3.50**	**0.875**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 0.875 lakh**

38. Setting Up of a Ball Copra Making Unit – Shri. Appana Naga Venkateswara Rao & Shri Appana Naga Venkata Satya Ravi Kumar, Appana Commercial Corporation, Main Road, Machavaram, Ambajipetta, East Godavari Dist, Andhra Pradesh

The objective of the project is setting up of a ball copra making unit with a capacity to process 10 lakh coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	15.41	-	-
Platform Dryer	40.00	35.00	8.75
TOTAL	**55.41**	**35.00**	**8.75**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 8.75 lakh.**

39. Setting Up of a Ball Copra Making Unit - Smt. Appana Surayavathi & Shri Appana Naga Venkata Raju, Appana Commercial Corporation, Main Road, Machavaram, Ambajipetta, E.G. Dist, Andhra Pradesh

The objective of the project is setting up of a ball copra making unit with a capacity to process 10 lakh coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	15.41	-	-
Platform Dryer	40.00	35.00	8.75
TOTAL	**55.41**	**35.00**	**8.75**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 8.75 lakh.**

40. Setting up of a Ball Copra Making Unit - Shri. Marisetti Venkata Subba Rao, R. S. No. 674/5[a], Relangi Village, Iragavaram Mandal, West Godavari Dist., Andhra Pradesh

The objective of the project is setting up of a ball copra making unit with a capacity to process 20 lakh coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	-	-	-
Building & Civil works	87.44	67.57	16.89
Working Capital Margin			
TOTAL	**87.44**	**67.57**	**16.89**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 16.89 lakh.**

41. Setting up of a Ball Copra Making Unit - Smt. Appana Rama Lakshmi, D. No.16-158, Main Road Machavaram, Ambajipeta, East Godavari Dist., Andhra Pradesh

The objective of the project is setting up of a ball copra making unit with a capacity to process 11 lakh coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	21.00	-	-
Building & Civil works	41.50	28.97	7.24
Working Capital Margin			
TOTAL	**62.50**	**28.97**	**7.24**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 7.24 lakh.**

42. Setting up of a Ball Copra Making Unit - Shri. Kunhammed, Nellolicha kandy House, Maruthonkara, Kavilumpara Via, Kozhikode, Kerala

The objective of the project is setting up of a ball copra making unit with a capacity to process 17,000 coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	4.00	0.875	0.22
Plant & Equipments	0.05	-	-
Preliminary expenses	0.05		
Working Capital Margin	0.90		
TOTAL	**5.00**	**0.875**	**0.22**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 0.22 lakh.**

43. Setting up of a Ball Copra Making Unit – Shri. Borsu Naga Venkata Satayanarayana Murthy, D.No.3-175, Borsu Vari Veedhi, Pasarlapudilanka Village, Mamidikuduru Mandal, East Godavari Dist., Andhra Pradesh

The objective of the project is setting up of a ball copra making unit with a capacity to process 10 lakh coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	-	-	-
Building & Civil works	30.69	29.29	7.32
Working Capital Margin			
TOTAL	**30.69**	**29.29**	**7.32**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs 7.32 lakh.**

Other points discussed:-

1. The Chairperson, CDB has instructed to review the current status of all 484 units assisted under TMOC scheme of Board. A proper format with all necessary information's needs to be prepared and forwarded to all the 484 units

2. Quality testing in terms of pesticide residue contaminations of coconut products like tender coconut and coconut milk needs to be carried out through reputed laboratories having the desired facility for detecting the pesticide residue. This project shall be taken up by CDB itself. Nutritional value of various products can also be tested

3. Further Chairperson also stressed that the Board needs to offer technical and financial support for tapping the huge potential of coconuts available in temples, in the entire

country for converting them into value added coconut products. A letter can be addressed to all temple authorities.

4. For the release of 2nd & subsequent installments, suitable expert officers from CDB may be identified and responsibility entrusted to conduct the joint inspection along with the Officials of the Bank. Liaison officer shall be appointed to each of the 24 units for which 2nd installment is released. Same procedure shall be follow for all units for release of 2nd installment.

PAC meeting concluded with vote of thanks from the Chief Coconut Development Officer, Shri Saradindu Das.

Date: 06.05.2019
Place: Ernakulum

Chief Coconut Development Officer
Coconut Development Board, Kochi

Annexure-I

A	Project Approval Committee
1	Dr.Usha Rani IAS Chairman, Coconut Development Board & Chairman PAC
2.	Dr. Wasakha Singh Dhillon Assistant Director General (HS-II) Indian Council of Agriculture Research (ICAR) New Delhi-110 012
3	Dr. KSMS Raghavarao Director Central Food Technological Research Institute Mysore-570 020
4	Mr. Sanjay Kumar Deputy Commissioner (Hort) Krishi Bhavan, New Delhi-110 001 **Representative of:** The Horticulture Commissioner Department of Agriculture & Cooperation Krishi Bhavan, New Delhi-110 001
5	Smt Latha S. Deputy Secretary Dept. of Agriculture, Governmant of Kerala **Representative of:** Secretary Agriculture, Government of Kerala
6	Mr. R. Srinivasan Chief General Manager NABARD, Trivandrum **Representative of:** The Chairman National Bank for Agri. & Rural Development (NABARD), C-24, 'G'Block, Bandra Kural Complex(East), Mumbai – 400 051
7	Shri Philip Y. Chief Manager, Indian Overseas Bank Regional Office, No.2384, Vettukattil Building, 5th Floor, Jose Jn., M G Road, Ernakulam, Kochi **Representative of:** The Managing Director & Chief Executive Officer Indian Overseas Bank 763, Anna Salai, Chennai-600 002 Ph: 044-28519500

8	Shri. P.K. Hameedkutty Deputy Agri. Marketing Advisor Directorate of Marketing & Inspection (DMI), Regional Officer, Block 'A', 6th Floor, Kendriya Bhavan, Kakkanad, Kochi-682 037 **Representative of:** The Joint Secretary & Agri. Marketing Adviser to Govt. of India, Krishi Bhavan, New Delhi-110 001.
9	Shri Saradindu Das Chief Coconut Development Officer Coconut Development Board & Member Secretary, PAC
B	**Technical Expert**
	Dr. M. Aravindakshan Former Chairman, CDB
C	**Officials of CDB**
1	Shri. R. Madhu Secretary, CDB, Kochi
2	Shri. E. Aravazhi Deputy Director, CDB, Kochi
3	Smt. Deepthi Nair. S Deputy Director (Mkg), CDB, Kochi
4	Shri Sreekumar Poduval Processing Engineer, CIT, Vazhakulam, Aluva
5	Shri K.S. Sebastian Assistant Director (Mkg), CDB, Kochi
6	Smt Radha P.G., Audit Officer, CDB, Kochi
7	Shri P. Sabareenathan Finance Officer, CDB, Kochi
8	Shri V.C.Vasanthkumar Statistical Officer, CDB, Kochi
9	Smt. Jayashree A, Development Officer, CDB, Kochi
10	Kum. Sharon Mariam Jacob Processing Engineer (on contract, CDB, Kochi)
11	Kum. Ciby Susan Cherian Processing Engineer (on contract, CDB, Kochi)

Proceedings of the 54th Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at Kochi on 04th July 2019

The 54th meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held at National Institute of Agricultural Extension Management (MANAGE), Hyderabad on **04th July 2019**. Smt. Usha Rani IAS Chairperson, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairperson welcomed all the members of PAC and agenda were taken up. The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 53rd Project Approval Committee Meeting held on 29th April 2019

The Committee confirmed the proceedings of the 53rd Project Approval Committee meeting held on 29.04.2019**.**

AGENDA No. 2: Action Taken Report on Decisions of the 53rd PAC Meeting

The committee perused the action taken on decisions of the 53rd meeting of Project Approval Committee. Chief Coconut Development Officer informed that 13 (research) projects and 26 (adoption) projects sanctioned by the 53rd PAC and action for release of fund is in progress. First installment for 12 research projects and 13 adoption projects has been effected on signing of MoU.

AGENDA No. 3: Approval of New Project Proposals:

1. **Developing chitosan nano formulation as an alternate to toxic sulphur for the safe preservation of coconut copra- Center for Post Harvest technology Agricultural Engineering College and Research Institute Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu**

The objectives of the project are as follows:

- Synthesis and characterization of chitosan based nano formulation / nano spheres and confirming the stability of the formulation.
- Assessing the bio efficacy of the formulation against various microbial contaminants in coconut copra.
- Confirming the biosafety of the formulation and other health benefits.
- Developing protocol to commercialize the product for the benefit various stakeholders.

- Conducting bio efficacy trials in coordination with copra producers and assessing the impact of the interventions.

PAC perused on the recommendations of the ISC and **approved the project subject to the condition that the following details are furnished:**

- Details of consumables with cost.
- Year wise details of work to be carried out.
- Revise the project limiting the institutional charges for 10%.

2. Transforming Coconut Waste into High Value Carbon dots and Development of Nanobased Technology for Disinfection of water- Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu

The objectives of the project are as follows:

- To transform the coconut wastes (coconut shell, husk & fonds) into carbon dots (C-dots).
- To characterize the physical and chemical properties of synthesized C-dots
- To develop a water purification technology by utilizing C-dots to disinfect the water.
- To carry out bio safety tests for the developed product.

PAC perused on the recommendations of the ISC and **approved the project subject to the condition that the following details are furnished.**

- Details of consumables with cost
- Year wise details of work to be carried out
- Revise the project limiting the institutional charges for 10%.

3. Production and activation of Biochar From Coconut Shell.- Tamil Nadu Agricultural University, Coimbatore

The objectives of the project are as follows:

- To produce biochar and activation of biochar from coconut shell.
- To design a biochar reactor of 1 ton capacity with steam activation system Management of sooty mould.
- To optimize the process parameters for activated biochar production.

PAC discussed the project in detail and **rejected the project since the concept of objective is not clear. It was directed to collect more reference information and to come up with a revised project.**

4. Design and development of Smart Copra dryer- Agricultural Research Station, Kerala Agricultural University, Mannuthy

The objectives of the project are as follows:

- Design and development of a forced convection batch type copra dryer for high quality copra production.
- Conduct filed test and assess the performance of developed copra dryer comparing with that of natural convection batch type copra dryer.

PAC **deferred the project since the project could not be presented by PI through video conference.**

5. Standardization of liquid formulation and mass multiplication of promising entomopathogen *Isaria fumosorosea* against Rugose Spiraling Whitefly, Aleurodicus rugioperculatus in Andhra Pradesh- Dr. Y.S.R Horticultural University, Ambajipeta, East Godavari, Andhra Pradesh

The objectives of the project are as follows:

- To study the morphological and physiological characters of *Isaria fumosorosea* an entomopathogenic fungus on rugose spiraling whitefly.
- To develop and standardize production protocols for preparation of liquid formulation of *I.fumosorosea*
- To identify the effective concentration of *I.fumosorosea* under *in vitro* and *in vivo* conditions
- To demonstrate the effective cocncentration of *I.fumosorosea* against spiraling whitefly in farmers coconut gardens.
- Large scale production and supply of liquid formulation of *I.fumosorosea* to coconut producer societies/ companies.

PAC perused the recommendations of the ISC and **approved the project subject to the condition that the infrastructure facilities should be borne by the institute itself and also the project cost should be limited to Rs. 25.00 lakhs.**

6. **Exploration of Entomopathogenic fungus Isaria fumosorosea wize for the management of emerging invasive whiteflies in coconut- ICAR-National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru, Karnataka**

The objectives of the project are as follows:

- To standardize liquid and solid state fermentation technology for the mass production of *Isaria fumosorosea* to develop grain, talc & oil based formulations

with longer self-life, persistence and higher bio-efficacy against the invasive whiteflies on coconut.

- To evaluate the bio-efficacy of *I. fumosorosea* against invasive whiteflies in coconut and to assess the impact of *I. fumosorosea* on non-target organisms (compatibility studies with predators, parasitoids and pollinators).
- To develop protocol for scale-up of mass production of *I. fumosorosea*.
- To give hands-on training to extension officials, scientist of SAUs, KVKs and FPOs on mass production and use of *I. fumosorosea* against invasive whitefly pests in coconut.

PAC perused the recommendations of the ISC and **approved the project at a total cost limited to rs.15.00 lakhs subject to following conditions:**

- Protocol standardization of the technology only to be taken up in the project at present.
- Area of operation to be limited to Karnataka and Tamil Nadu.
- Project to be taken up at one center NBAIR- Bangalore only at present.

Revised project to be submitted as above.

7. **Development of Potentially Viable Coconut Value Added Products- Tamil Nadu Agricultural University, Coimbatore.**

The objectives of the project are as follows:

- To standardize the technology for the production of tender coconut kernel leather
- To spray dry the coconut water from copra to reduce the wastage.
- To study the physic chemical changes during storage with suitable packaging materials.
- To blend the coconut water power with instant energy drinks.

PAC **deferred the project since the project could not be presented by PI through video conference.**

8. Accelerated production of mature coconut water Vinegar- CSIR- Central Food Technological Research Institute, Mysuru, Karnataka

The objectives of the project are as follows:

- To accelerate the process of vinegar production from 4-6 weeks to 10-15 days.
- To produce a consistently similar product with defined cultures and process.

PAC perused the recommendations of the ISC and **approved the project with a total project cost of Rs.12.80 lakhs.**

9. Development of fermented tender coconut water with lactic cultures and its functional applications- CSIR- Central Food Technological Research Institute, Mysuru, Karnataka

The objectives of the project are as follows

- To extract and analyse various biochemical compounds from the fermented product.
- To study antimicrobial activities of fermented product (FP)
- To optimize different cultural conditions for the fermentation of tender coconut water with lactic acid bacterial cultures.
- Preparation of FP based food product utilising fermented coconut water for targeted ailment.

PAC perused the recommendations of the ISC and approved the project **with a total project cost of Rs.23.68 lakhs.**

Tender Coconut Water Packing Unit

10. Expansion of the Existing TCW packing Unit- M/s. Sakthi Coco Products, Unit No.9/2, Sakthi Industrial Estate, Udumalpet Road, Pollachi – 642003, TN

The objective of the project is Expansion of the Existing TCW packing Unit with capacity to process 20000 bottles per day

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	Own	-	-
Plant & Equipments	88.95	84.45	21.11
TOTAL	**88.95**	**84.45**	**21.11**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.21.11 lakhs subject to the condition that bank appraisal report is furnished.**

Coconut shell charcoal Briquette Manufacturing Unit

11. Setting up of a coconut shell charcoal briquette manufacturing unit - M/s. Neo Global, SF No.77/C3, Senapathipalayam Village, karur NH Road, Kurukkathi, Vellakovil – 638111, Tiruppur Dist., TN

The objective of the project is setting up of a coconut shell charcoal briquette manufacturing unit with a capacity to process 10 Tons/day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works (including drying yard)	23.66	23.66	5.91
Plant & Equipments	69.59	69.07	17.27
Electrification	6.75	3.45	0.86
Computer system	1.08	-	-
Working Capital margin	3.79	-	-
TOTAL	**104.87**	**96.18**	**24.04**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 24.04 lakh.**

Other items:

1. **The proposal for Market Promotion operational guidelines to promote market of coconut products by providing the support** under following :

- Infrastructure support for establishment of procurement centers by FPOs.
- Setting up of sales outlets or kiosks for value added coconut products.
- Assistance for Quality Certification.
- Assistance to exporters for participation in international exhibitions/trade fairs/buyer seller meets.
- Brand Building support

After detailed discussion **PAC approved the proposal.**

2. **Revised Ratification Proposal of fund sanctioned and released for Coconut Nursery at KVK,Motihari, Bihar and KVK, Gorakpur, Uttar Pradesh**

   PAC approved the proposal at a total cost of Rs. 6.70 lakhs.

3. **Release of further subsidies to the legal heir of Shri. Adabala Satyanarayana Murthy for "Setting up of a Ball Copra making unit" at a total cost of Rs.49.20 lakh-**

   After detailed discussion PAC **approved to release the balance amount of Rs.1.75 lakhs to** legal heir of Shri. Adabala Satyanarayana Murthy named Shri. Adbala Venugopal**.**

Other points discussed:

1. Since it is observed that most of the units assisted under TMoC have reported marketing problems for coconut products, it was decided to extend eligible market support to TMoC assisted units and to conduct state wise buyer- seller meets in support of these units.

2. On observing that the Tender Coconut Water is affected mainly by root feeding the Regional Office, Chennai was directed to collect some samples for detecting pesticide residue at recognized laboratories.

3. Research stations should assure that the projects submitted for assistance under TMoC are not duplicated by certifying the same while submitting the project and there should be screening mechanism for the same.

4. It was emphasized that the technology developed in the research stations should reach up to the farmer level and also should be farmer friendly.

5. Coconut being a 'Kalpavriksha' and every part is useful and hence more entrepreneurs should be promoted to take up various products and by products of coconut.

6. It was opined that handholding by the concerned state departments may also be considered to the entrepreneurs.

PAC meeting concluded with vote of thanks from the Chief Coconut Development Officer, Shri Saradindu Das.

Date: 07.07.2019
Place: Ernakulum

Chief Coconut Development Officer
Coconut Development Board, Kochi

Annexure-I

A	Project Approval Committee
1	Smt. Usha Rani IAS Chairperson, Coconut Development Board & Chairman PAC
2.	Shri. Dhanraj Joint Director (Hort) Govt. of Karnataka, Bangalore **Representative of:** The Secretary Horticulture Govt. of Karnataka, Bangalore
3	Dr. Anil Kumar Deputy Agricultural Marketing Adviser, Directorate of Marketing & Inspection (DMI), 2nd floor Kendriya Sadan, Sulthan Bazar, Hyderabad **Representative of:** The Joint Secretary & Agri. Marketing Adviser to Govt. of India, Krishi Bhavan, New Delhi-110 001.
4	Dr. KSMS Raghavarao Director Central Food Technological Research Institute Mysore-570 020
5	Shri. R.I.A. Selvan Deputy General Manager NABARD, Hyderabad **Representative of:** The Chairman National Bank for Agri. & Rural Development (NABARD), C-24, 'G'Block, Bandra Kural Complex(East), Mumbai – 400 051
6	Shri. K. Velayudham Assistant General Manager Indian Overseas Bank, Regional Office, 5-9-299 2nd floor Suryalok Complex,Gun Foundry, Abids , Hyderabad **Representative of:** The Managing Director & Chief Executive Officer Indian Overseas Bank 763, Anna Salai, Chennai-600 002 Ph: 044-28519500

7	Dr. Anil Kumar Deputy Agricultural Marketing Adviser, Directorate of Marketing & Inspection (DMI), 2nd floor Kendriya Sadan, Sulthan Bazar, Hyderabad **Representative of:** The Joint Secretary & Agri. Marketing Adviser to Govt. of India, Krishi Bhavan, New Delhi-110 001.
8	Shri Saradindu Das Chief Coconut Development Officer Coconut Development Board & Member Secretary, PAC
B	**Officials of CDB**
1	Smt. Jayashree A, Development Officer, CDB, Kochi

Proceedings of the 55th Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at CDB, Kochi on 25th September 2019

The 55th meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held at Coconut Development Board, Head Office, Kochi on **25th September 2019**. Smt. Usha Rani IAS Chairperson, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairperson welcomed all the members of PAC and agenda were taken up. The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 54th Project Approval Committee Meeting held on 04th July 2019

The Committee confirmed the proceedings of the 54th Project Approval Committee meeting held on 04.07.2019**.**

AGENDA No. 2: Action Taken Report on Decisions of the 54th PAC Meeting

The committee perused the action taken on decisions of the 54th meeting of Project Approval Committee. Chief Coconut Development Officer informed that 6(research) projects and 2 (adoption) projects sanctioned by the 54th PAC. First installment for 5 research projects and 1 adoption projects has been effected on signing of MoU. Chairperson directed to invite the 2 PI's of deferred projects which could not be presented through video conferencing during 53rd PAC in the next PAC without fail.

AGENDA No. 3: Approval of New Project Proposals:

1. **Optimization of processing parameters to increase the shelf life of Kalparasa (Neera) using physical, chemical and non-thermal methods- ICAR- Central Plantation Crops Research Institute, Kasaragod, Kerala.**

The objectives of the project are as follows

- To study the effect of physical, chemical, biological and thermal treatments on the shelf life of Kalparasa.
- To optimize dose and length of physical, chemical, biological and thermal treatments either alone or in combination on the shelf life of Kalparasa.
- To standardize the storage material for effective shelf life extension of Kalparasa.

PAC discussed the project in detail and **rejected the project since the objectives of the project is a repetitive one undertaken by CFTRI, Mysore.**

2. **Development of IoT based solar powered automated copra dryer using computational intelligence techniques – Sree Krishna College of Technology, Coimbatore, Tamil Nadu.**

The objectives of the project are as follows:

- Setup post harvest processing dryers for agricultural products like coconut, nuts and spices near small and marginalized farming communities where grid power is unreliable.
- Use technology to automate the post harvest drying process to produce international quality agro produce.
- Use IoT and control process and share information in realtime with farmers who use it.
- Increase the nutrition value of product by drying the agro produce at lower temperature as modern desiccation dehumidifiers are integrated into the drying chamber which is controlled by NIR moisture sensors.
- Provide technology to processed communities to help them fetch right price for their produce.
- With advances in IoT integrated temperature sensors/alarms/communication technology, the farmer is free to carry on his regular farming work and still be notified of the optimal parameter changes in the drying process so that he/ she may correct them before the post harvest procedure gets irreparable.
- The byproduct coconut shell will be 10g per nut, 50% of the total available shells shall be used as fuel in the drying system and balance shell shall be sold at market rate which also yields the farmer.
- Increase the income by 100% to the farmer by utilizing this post harvest processing technology. This combined with nutrient retain 50% from the vegetative by-products from this implementation greatly profits the farmer.

PAC discussed the project in detail and **approved the project subject to the condition that share of CDB will be restricted to Rs.10.00 lakhs.**

Desiccated Coconut Powder Manufacturing Units

3. Setting up of a Desiccated Coconut Powder Manufacturing Unit- M/s. Mahendra Agro Industry, Sy No. 14/04, Kalkele Road, Halepalya, Kasba Hobli, Tiptur, Karnataka.

The objective of the project is setting up of a desiccated coconut powder manufacturing unit with a capacity to process 20,000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	95.00	53.00	13.25
ETP	10.00	10.00	2.50
Plant & Machinery (including Generator & electrification)	60.00	56.42	14.10
Preliminary & Pre-operative expenses	5.00	1.19	0.30
Working Capital	50.00	-	-
TOTAL	**220.00**	**120.61**	**30.15**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 30.15 lakh**.

Tender Coconut Water Packing Unit

4. Establishment of Tender Coconut Water packing Unit- M/s. Kovai Agro Tech Pvt. Ltd., 12-216 Karungal kadu, Dharapuram, Tirupur, Tamil Nadu

The objective of the project is setting up Tender Coconut Water Packing Unit with a capacity to process 20000 Tender coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	43.63	-	-
ETP	4.00	4.00	1.00
Plant & Machinery	174.91	167.77	41.94
Electrification	6.00	6.00	1.5

ISO Certification	2.85	-	-
Technical know-how	3.50	-	-
Preliminary & Pre op. expenses	2.00	1.80	0.45
Working Capital Margin	33.11	-	-
TOTAL	**270.00**	**179.57**	**44.89**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 44.89 lakh**.

Virgin Coconut Oil Manufacturing Unit

5. Setting up of a Virgin Coconut Oil manufacturing unit- M/s. Old Goa Oils and Foods Pvt. Ltd., Mogo Plot No.N-50, Phase IV, Verna Industrial Estate, Salcete, Goa

The objective of the project is setting up of a Virgin Coconut Oil manufacturing unit with a capacity to process 10000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works	45.00	-	-
Plant & Machinery	120.45	115.58	28.89
ETP	15.00	10.00	2.50
Electrification	17.27	5.78	1.44
Fire Hydrant fire alarm system	2.74	-	-
Computer System	1.05	-	-
Preliminary & pre-op expenses	4.17	1.31	0.33
Technical Know-how	0.59	0.59	0.15
Working Capital margin	16.66	-	-
TOTAL	**222.93**	**133.26**	**33.31**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 33.31 lakh**.

Neera Processing Unit

6. Setting up of a Neera Processing Unit for production of fresh neera drink, neera sugar- M/s. Malenadu Nuts & Spices Producer Company Ltd, No.426/1, NH206, BH Road, Bhadravati, Shivamogga, Karnataka

The objective of the project is setting up of a Neera Processing Unit to process 2000 litres of neera per day for producing neera drink, neera slush, neera ice cream, neera sugar.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev.	lease	-	-
Building & Civil works	48.00	-	-
ETP	3.30	3.30	0.82
Plant & Machinery	183.69	179.06	44.76
Generator	3.90	3.90	0.98
Laboratory equipments	5.23	5.23	1.31
Electrical installation	8.81	8.81	2.20
Vehicles – 3 Nos.	12.89	-	-
Office equipments and computer system	2.92	-	-
Pre op. expenses	2.85	1.95	0.49
Working Capital margin	13.41	-	-
TOTAL	**285.00**	**202.25**	**50.56 Limited 50.00**

After detail discussion, PAC **rejected the project since the promoter has stated that he has availed Karnataka state government subsidy which is more than 50% of total eligible project cost.**

Integrated Coconut Processing Unit

7. Setting up of an Integrated Coconut processing Unit for the production of Virgin Coconut oil , Desiccated coconut powder, coconut chips and coconut testa oil- M/s. Vepuri Agro Products Pvt Ltd., Plot No-19, APIIC State Food Park, Mallavalli, Krishna, Andhra Pradesh

To process 10000 coconuts per day to produce 0.83MT DCP per day, 200 litre VCO per day and by products like coconut chips and coconut testa oil

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	14.11	-	-
Building & Civil works	60.39	49.00	12.25
Plant & Machinery	156.00	152.32	38.08
Electrical installation & Generator set	22.71	7.18	1.79
Preliminary & Pre op. expenses	4.00	2.08	0.52
Others (Investment & Deposit)	5.00	-	-
Furniture & Office equipment	4.00	-	-
Working Capital Margin	24.10	-	-
TOTAL	**290.31**	**210.58**	**52.64 Limited to 50.00 lakh**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 50.00 lakh**.

8. Setting up of an Integrated Coconut processing Unit for the production of Desiccated Coconut and Virgin Coconut oil- M/s. Harvika Food and Acqua Pvt Ltd Office: 'Sterling", Ambikapuram, Palakkad, Kerala

The objective of the project is setting up of an Integrated Coconut processing Unit for the production of Desiccated Coconut and Virgin Coconut oil with a capacity to process 10000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased		
Building & Civil works	53.01	35.84	8.96
ETP	3.80	3.66	0.91
Plant & Machinery	136.17	136.17	34.04
Electrification	9.61	6.81	1.70
Generator	4.75	4.75	1.19
Technical know-how	0.60	-	-
GMP/FSMS Certification & Lab equipments	10.33	-	-
Furniture & Office equipments, computer system, printer etc.	4.12	-	-

Working Capital Margin	16.87	-	-
TOTAL	**239.26**	**187.23**	**46.80**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 46.80 lakh**.

9. Setting up of an Integrated Coconut processing Unit for the production of Virgin Coconut oil and Desiccated Coconut powder- M/s. Green Aura International, Mathramkottu, Engandiyoor, Thrissur, Kerala

The objective of the project is setting up of an Integrated Coconut processing Unit for the production of Desiccated Coconut and Virgin Coconut oil with a capacity to process 10000 coconuts per day

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	8.75	-	-
Building & Civil works	26.45	26.45	-
ETP	4.53	4.52	1.13
Plant & Machinery	77.62	77.62	19.40
Electrification	5.75	3.88	0.97
Generator	3.19	3.18	0.80
Technical know-how	0.60	-	-
Computer system and printer	2.81	-	-
Preliminary & Pre op. expenses	1.70	1.15	0.29
Working Capital Margin	5.77	-	-
TOTAL	**137.17**	**116.80**	**22.59**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 22.59 lakh**.

10. Setting up of an Integrated Coconut processing Unit for the production of Coconut chips and coconut vinegar- M/s. Manley foods Office : Plot no. 342/391, Meherpalli, Oscar city,Bhubaneswar, Odisha

The objective of the project is setting up of an Integrated Coconut processing Unit for the production of Coconut chips and Coconut vinegar with a capacity to process 1000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	3.00	-	-
Plant & Machinery	18.00	17.98	4.50
Electrification	3.00	0.89	0.22
Furniture	0.50	-	-
Preliminary & Pre op. expenses	0.25	0.18	0.04
Working Capital Margin	-	-	-
TOTAL	**24.75**	**19.05**	**4.76**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs. 4.76 lakh** subject to the condition that the details viz; Bank appraisal report, Financial parameters, NoC from PCB are furnished

Coconut Oil manufacturing unit

11. Setting up of a Coconut Oil Extraction Unit at Varappetty- M/s. Varappetty Service Co-operative Bank Ltd No.1015 Varappetty, Kothamangalam, Ernakulam., Kerala

The objective of the project is setting up of a Coconut Oil manufacturing unit with a capacity to process 30000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own		
Building & Civil works	59.37	43.88	10.97
Plant & Machinery (including ETP)	120.08	91.00	22.75
Electrification and Generator	15.93	9.55	2.39
Other Expenses	0.12	-	-
Working Capital margin	31.82	-	-
TOTAL	**227.32**	**144.43**	**36.11**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.36.11 lakh**

12. Setting up of a coconut oil manufacturing unit- M/s. Gramalakshmi Marketing Producer Company Limited, Gramalakshmi Marketing Group, Udayapuram PO, Kasaragod District, Kerala

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & civil works	8.00		
Plant & Equipments	29.17	29.17	7.29
Working Capital margin	5.33	-	-
TOTAL	**42.50**	**29.17**	**7.29**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.7.29 lakh subject to the condition that the details viz;** Capacity of the unit, Copy of land document, PCB, ID proof of the promoter, Financial parameters, Project Appraisal Report from Bank, Quotation of ETP etc are furnished.

Shell Charcoal Manufacturing Unit

13. Setting up of Coconut Shell Charcoal Briquette Unit- M/s. Aditya hydro carbons, 597, 24th Main Road, Banashankari 2nd stage, Bangalore, Karnataka

The objective of the project is setting up of Shell Charcoal briquette manufacturing unit to process 10 tons of coconut shell charcoal powder per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	24.00	-	-
Plant & Machinery	65.50	65.50	16.37
Electrification	8.00	3.27	0.82
Working Capital Margin	14.58	-	-
TOTAL	**112.08**	**68.77**	**17.19**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.17.19 lakh**

14. Setting up of a Coconut shell charcoal briquetting Unit- M/s. Coco Energy, Office : 351/A1, SF No.32/3 A Varadharajulu Nagar, 9th Street, Ganapathy, Coimbatore

The objective of the project is setting up of Shell Charcoal to process 10 tons of coconut shell charcoal per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works (renovation)	35.80	-	-
Plant & Machinery	59.41	59.41	14.85
Electrification	8.00	2.97	0.74
Furniture & Office equipments	1.00	-	-
Working Capital Margin	3.05	-	-
TOTAL	**107.26**	**62.38**	**15.59**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.15.59 lakh**

Coconut Wood Briquette Manufacturing Unit

15. Setting up of a Coconut Wood Briquette Manufacturing Unit at Theni- M/s. Pranov Industry Office: 941/4 A, Kodangipatti, Bodendrapuram Road, Kodangipatti Post, Bodinaickannur, Theni, Tamil Nadu

The objective of the project is setting up of a coconut wood briquette manufacturing unit with a capacity to process 30 tons of coconut wood per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in Lakh)		
Land	Own	-	-
Building & Civil works	17.58	15.84	3.96
Plant & Machinery	86.14	86.14	21.53
Electrification	10.00	4.31	1.08
Furniture, Office equipments & computer	0.84	-	-
Preliminary & Pre op. expenses	0.50	1.06	0.26
Working Capital margin	5.94	-	-
TOTAL	**121.00**	**107.35**	**26.83**

After detail discussion, PAC wanted detail verification whether the project would use only coconut wood.

Activated Carbon manufacturing Unit

16. Setting up of a Activated Carbon Unit- M/s. Grace Pulveriser, 3/67C-1, Harbour Byepass Road, (Behind Fisheries College), Thoothukudi, Tamil Nadu

The objective of the project is setting up of an activated carbon manufacturing unit with a capacity to produce 3Tons of Activated Carbon per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works (renovation)	50.00	-	-
Plant & Equipments	170.00	170.00	42.50
Working Capital Margin	20.00	-	-
TOTAL	**240.00**	**170.00**	**42.50**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.42.50 lakh.**

17. Refinement of *in vitro* inflorescence culture of coconut for multiplication of true- to-type planting materials- ICAR- Central Plantation Crops Research Institute, Kasaragod, Kerala

The objectives of the project are as follows:

- Refinement of *in vitro* immature inflorescence culture of coconut with regard to shoot regeneration, rooting and *ex vitro* hardening
- Assessment of clonal fidelity of *in vitro* raised plantlets using molecular markers

PAC discussed the project in detail and **approved the project in principle subject to the condition to come up with a concrete proposal on exploring the possibilities to collaborate with other countries for these studies already undertaken like CIMMYT Mexico,Brazil etc. With these details, they can resubmit again.**

18. An Economic Analysis of Value Chain of Coconut in Union Territory of Puducherry- Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Nedungadu, Karaikal

The objectives of the project are as follows:

- To study the area and production trends of Coconut in Pondicherry and Karaikal region
- To identify the value added products of Coconut in the supply chain of the study area
- To estimate the marketing cost, marketing margin, price spread, marketing efficiency and farmer's share in consumer rupee in various supply chains
- To study the factors affecting the marketing efficiency of various supply chains of Coconut in the study area.
- To analyze the constraints of key players of various supply chain of Coconut in the study area.
- To suggest the suitable strategies to enhance the area, production, marketing efficiency of coconut.

PAC discussed the project in detail and **requested to submit the study report of the same project already undertaken by students of the same college.**

19. Strategizing Coconut Sector Development in Andaman & Nicobar Islands- ICAR-Central Island Agricultural Research Institute, Port Blair, Andaman & Nicobar Islands

The objectives of the project are as follows:

- To estimate the economics of coconut cultivation under different farming systems of Andaman& Nicobar Islands.
- To examine the market structure of coconut products in the islands
- To elucidate the ways and means to enhance the production and productivity of coconut plantation and the income of coconut farmers.
- To conduct an ex- ante evaluation of strategies for their feasibility of implementation and the resultant benefits to stakeholders.
- To evolve a policy framework for the development of coconut sector in Andaman & Nicobar Islands

PAC discussed the project in detail and **rejected the project.**

D. Other Items

RATIFICATIONS

20. Large scale production and demonstration of native biocontrol agents viz. Trichoderma sp, Pseudomonas sp against coconut diseases viz., Ganoderma wilt, stem bleeding and bud rot diseases in Andhra Pradesh- Dr. Y.S.R. Horticultural University, Ambajipeta, Andhra Pradesh for a total project cost of Rs.24.90 lakhs

After detail discussion, PAC ratified the project cost of **Rs 24.90 lakh.**

Other points discussed:-

1. During 53rd PAC meeting held 29.04.2019, Chairperson CDB has instructed to ascertain the current status of 502 units assisted under TMOC scheme of Board. It has been observed that out of 502 units 236 units are active and undertaking the processing of coconut, whereas 248 units have not responded. Chairperson directed to address the financing banks of 248 units to verify the status as well as concerned State Government.
2. Ascertain the status of 1st, 2nd and 3rd installments to be released for both adoption projects and research projects.
3. Action to be taken to create awareness of TMoC scheme by conducting campaigns and to create whats app and telegram account to maintain consistent contact with entrepreneurs to aware about exhibitions and schemes.
4. Address the major financing banks, District Industries Centers in major coconut growing areas about TMoC scheme.
5. Letter to be addressed to Ministry to clarify the in subsidy for SC/ST and SC/ST women farmers as per MIDH guidelines.
6. The projects sanctioned under TMoC to be informed to the State Government and Ministry of Food Processing Industries, Govt .of India to avoid any duplication.
7. Action may be initiated to propose kiosk at Lulu Mall, Kochi which can provide coconut based food products and coconut based cosmetic products.

PAC meeting concluded with vote of thanks from the Deputy Director, Smt.Deepthi Nair,S.

Date: 26.09.2019
Place: Ernakulum

Chief Coconut Development Officer i/c
Coconut Development Board, Kochi

Annexure-I

A	Project Approval Committee
1	Dr.Usha Rani IAS Chairman, Coconut Development Board & Chairman PAC
2	Dr. Anu Appaiah Senior Scientist CFTRI, Mysore **Representative of:** Director Central Food Technological Research Institute Mysore-570 020
3	Smt K.U Sathyabhama Deputy Director Dept. of Agriculture, Governmant of Kerala **Representative of:** The Principal Secretary Agriculture, Government of Kerala
4	Mr. H.R. Naik Under Secretary Dept. of Horticulture Karnataka **Representative of:** The Principal Secretary Horticulture, Government of Karnataka
5	Mr. Jitender Singh. Chief Manager, Indian Overseas Bank Regional Office, No.2384, Vettukattil Building, 5th Floor, Jose Jn., M G Road, Ernakulam, Kochi **Representative of:** The Managing Director & Chief Executive Officer Indian Overseas Bank 763, Anna Salai, Chennai-600 002 Ph: 044-28519500

6	Mr. Prasad Chakravarthy Assistant Agri. Marketing Advisor Directorate of Marketing & Inspection (DMI), Regional Officer, Block 'A', 6th Floor, Kendriya Bhavan, Kakkanad, Kochi-682 037 **Representative of:** The Joint Secretary & Agri. Marketing Adviser to Govt. of India, Krishi Bhavan, New Delhi-110 001.
7	Shri Saradindu Das Chief Coconut Development Officer Coconut Development Board & Member Secretary, PAC
B	**Technical Expert**
	Dr. Reji Jacob Thomas Scientist, CPCRI
C	**Officials of CDB**
1	Shri. R. Madhu Secretary, CDB, Kochi
2	Shri. Sreekumar Poduval Deputy Director (TD&E), CIT, Aluva
3	Smt. Deepthi Nair. S Deputy Director (Mkg), CDB, Kochi
4	Shri. Pramod .P. Kurian Assistant Director, CDB, Kochi
5	Shri K.S. Sebastian Assistant Director (Mkg), CDB, Kochi
6	Shri P. Sabareenathan Finance Officer, CDB, Kochi
7	Smt. Jayashree A, Development Officer, CDB, Kochi
8	Smt. Sharon Mariam Jacob Processing Engineer (on contract, CDB, Kochi)
9	Kum. Ciby Susan Cherian Processing Engineer (on contract, CDB, Kochi)

Proceedings of the 56th Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at National Institute of Agricultural Extension Management (MANAGE), Hyderabad on 06th December 2019

The 56th meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held at **National Institute of Agricultural Extension Management (MANAGE), Hyderabad** on **06th December 2019**. Smt. G. Jayalakshmi IAS Chairperson, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairperson welcomed all the members of PAC and agenda were taken up. The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 55th Project Approval Committee Meeting held on 25th September 2019

The Committee confirmed the proceedings of the 55th Project Approval Committee meeting held on 25.09.2019. The committe opined that eligibility for assistance under TMoC to be considered as per MIDH guidelines for SC/ST women as well as for general category on par with other regular schemes. Mrs. Minnie Mathew IAS (Retd) and Ex-Chairman, CDB opined that TMoC is formulated for assisting new innovative by products from coconut hence coconut oil needs to be examined for assistance under TMoC.

AGENDA No. 2: Action Taken Report on Decisions of the 55th PAC Meeting

The committee perused the action taken on decisions of the 55th meeting of Project Approval Committee. Chief Coconut Development Officer informed that 3(research) projects and 15 (adoption) projects sanctioned by the 55th PAC. First installment for 1 research project and 4 adoption projects is being released.

AGENDA No. 3: Approval of New Project Proposals:

1. **Development of a rapid farmer friendly Phytoplasma detection tool for Coconut Yellowing Disease. - Unibiosys Biotech Research Labs, Kochi, Kerala.**

The objectives of the project are as follows

- To develop a device to detect the pathogen quickly, efficiently, easily and with high sensitivity.
- To develop a point of care detection technology for coconut farmers for the easy identification of pathogens without lab expertise.

PAC discussed the project in detail and suggested to redesign the same for predominant debilitating root wilt disease and, to reduce the project cost with minimal infrastructure, lab equipment and also by engaging JRF's.

The project may be presented in next PAC.

2**. Development of Potentially Viable Coconut Value Added Products – Tamil Nadu Agricultural University**, **Coimbatore, Tamil Nadu.**

The objectives of the project are as follows:

- To standardize the technology for the production of tender coconut kernel leather.
- To spray dry the coconut water from copra to reduce the wastage.
- To study the physic chemical changes during storage with suitable packaging materials.
- To blend the coconut water power with instant energy drinks.

PAC discussed the project in detail and deferred the project since PI was not present. Director CFTRI commented that the project is not revised as per last PAC decision and opined that the project with coconut leather does not appear to be feasible hence better to go with pulp.

3. Design and development of Smart Copra dryer- Agricultural Research Station, Kerala Agricultural University, Mannuthy, Thrissur, Kerala.

The objectives of the project are as follows:

- Design and development of a forced convection batch type copra dryer for high quality copra production.
- Conduct field test and assess the performance of developed copra dryer comparing with that of natural convection batch type copra dryer.

PAC discussed the project in detail and suggested

- To revise and prune down the project for a prototype by scaling down the capacity for a maximum of 600 nuts/ batch which can be scaled up in future as per the demand of the farms/ entrepreneurs.
- The project may also include material energy balance for heat flow.

Project may be placed before next PAC.

4. Coconut neera sugar and its Glycemic Index (GI) and Glycemic Load (GL) studies- CSIR -National Institute for Interdisciplinary Science and Technology [NIIST], Thiruvananthapuram, Kerala.

The objectives of the project are as follows:

- Standardization of sugar preparation procedure and comparison with the popular procedures that is currently available.
- Sensory and shelf life studies.
- GI&GL Studies.
- Exploration of bioactives

PAC discussed the project in detail and suggested

- To submit revised project including GI studies for tender coconut water also with 6-8 months maturity level.
- Studies to be undertaken for neera sugar with three samples- developed by CPCRI, NIIST, and a branded sample available in the market.

Revised project may be presented before next PAC.

5. Production of Carbon Molecular Sieves from Coconut Residues/ Wastes- Agricultural Engineering College and Research Institute, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu

The objectives of the project are as follows:

- Biochar production from Coconut residues by slow pyrolysis and sequential activation using steam and dehydrating agents.
- Process optimization and production of carbon molecular sieves from activated biochar by chemical vapor deposition process.
- Validation of the developed coconut residues based carbon molecular sieves on selectivity and adsorption capacity for gas separation.

PAC discussed the project in detail and **approved the project for Rs.17.50 lakh only after excluding the cost of automatic proximate analyzer costing Rs.12.00 lakhs of the original proposal of Rs.29.50 lakhs.**

Tender Coconut Water Processing & Packing Unit

6. Establishment of Tender Coconut Water processing and packing Unit - M/s. Muthuvel Enterprises., SF No.45/7, Vaguthampalayam Village , Kinathukadavu Tk, Coimbatore, Tamil Nadu

The objective of the project is setting up Tender Coconut Water Processing and Packing Unit with a capacity to process 2000 litre of tender coconut water per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	54.20	40.00	10.00
Plant & Equipments (including electrification)	139.17	128.50	32.12
Pre op. expenses	2.00	1.68	0.42
Working Capital margin	16.00	-	-
TOTAL	**211.37**	**170.18**	**42.54**

After detail discussion, PAC suggested to furnish the following documents.

- Bank statement- repayment details of one year
- Letter of intent.
- Process technology details and to ascertain whether the change in machinery is with approval of the financing bank.
- FSSAI certification.
- Shelf life study.
- Quality testing for microbial load from a NABL accredited lab.
- Authentication detail related to co-branding.
- Inspection of the unit by the Board.

Project may be placed before next PAC.

7. Setting up of a unit for Tender Coconut Water Bottling Plant- M/s. Madhura Agro Process Pvt. Ltd., 2A Tapovan Complex, Karadimadai Road, Kuppanur Post, Coimbatore, Tamil Nadu.

The objective of the project is setting up Tender Coconut Water Processing and Packing Unit with a capacity to process 15000 tender coconuts per day to produce 5000 litre of tender coconut water per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works	20.21	-	-

Plant & Equipments	70.45	67.07	16.77
Technical know-how	10.00	-	-
Pre op. expenses	36.24	0.67	0.16
Working Capital margin	5.00	-	-
TOTAL	**141.90**	**67.74**	**16.93**

PAC approved the project subject to the condition that the following details are furnished:

- Bank statement- last 18 months loan repayment.
- Production statement- last 6 months.
- Copy of supply orders for the sale of product.
- FSSAI certification.
- Inspection of the unit by Board.

Virgin Coconut Oil Manufacturing Unit

8. Setting up of a Virgin Coconut Oil manufacturing unit- M/s. Konasseema Agro Products, Kondalamma Chintha, Mummidivaram, East Godavari District, Andhra Pradesh

The objective of the project is setting up of a Virgin Coconut Oil manufacturing unit with a capacity to process 5000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land & Land Dev	Own	-	-
Building & Civil works	14.70	6.59	1.65
Plant & Machinery including ETP	58.47	58.05	14.51
Electrical installation	9.23	2.90	0.73
Preliminary & Pre op. expenses	5.00	0.72	0.18
Generator	4.90	4.90	1.22
Furniture	2.00	-	-
Working Capital Margin	13.33	-	-
TOTAL	**107.63**	**73.16**	**18.29**

After detail discussion, **PAC approved the project with a maximum eligible subsidy of Rs. 18.29 lakh**.

Activated Carbon manufacturing Unit

9. Setting up of Coconut shell based Steam Activated Carbon unit - M/s. Indcarb Activated Carbon Pvt. Ltd., New Industrial Development Area (India), Kanjikode, Palakkad, Kerala.

The objective of the project is setting up of a Coconut shell based Steam activated carbon manufacturing unit with a capacity to produce 12.5Tons of Activated Carbon per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	26.96	-	-
Building & Civil works	774.89	180.00	45.00
Plant & Equipments	1703.24	743.21	185.80
Pre operative expenses	218.91	9.23	2.30
Working Capital margin	184.00	-	-
TOTAL	**2908.00**	**932.44**	**233.10 Limited to 50.00**

After detail discussion, PAC approved the project with a maximum eligible subsidy of **Rs.50.00 lakh subject to the following conditions**

- To check whether Kerala Financial Corporation comes under eligible financial institutions under the guidelines of TMoC.
- Inspection of the unit by the Board**.**

Report of the above mentioned conditions may be placed before next PAC.

Ball Copra Units

10. Setting up of a Ball Copra Making Unit- Sri Lakshmi Durga Coconuts, D No.1 – 82, Opp Sadhana School, Nidamarru (IMD), Bavayapalem Post, West Godavari District, Andhra Pradesh.

The objective of the project is to process 27 lakh coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Platform Dryer	40.00	31.27	7.82
TOTAL	**40.00**	**31.27**	**7.82**

After detail discussion, **PAC deferred the project since the promoter could not present.**

11. Setting up of a Ball Copra Making Unit- M/s. Madhavayya Traders, No. 4-115, Zilla Parshad Road, Bhaggeswaram, Palakol Mandal, West Godavari District, Andhra Pradesh

The objective of the project is to process 25 lakh coconuts per year

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	-	-	-
Platform Dryer	80.00	57.71	14.43
TOTAL	**80.00**	**57.71**	**14.43**

After detailed discussion PAC approved the project with a maximum eligible subsidy of Rs.14.43 lakh as per eligible norms of TMoC.

12. Impact of water/ soil moisture conservation to enhancing production of coconut under rainfed and deficit irrigated farms- ICAR-Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala.

The objectives of the project are as follows:

- To analyse the impact of water/ soil moisture conservation techniques in coconut gardens on soil moisture and ground water resource
- To assess the effect of water/ soil moisture conservation on coconut yield and economics.
- To analyse the perception of farmers and extension personal on scaling up of adoption of water/ soil moisture conservation techniques in coconut farming.

PAC discussed the project in detail and suggested

- To revise the project cost by restricting project implementation area to two states- Kerala & Karnataka instead of 4 states.
- To be undertaken for two models- one rainfed and one deficit irrigated to be undertaken in Kasaragod (Kerala) and DSP farm Dhali (Tamil Nadu).

Revised project may be placed before next PAC.

Market Promotion

13. To carry out various brand promotional programme for 'Mayooram" brand Coconut Oil and Virgin Coconut Oil- M/s.Eramala SCB Ltd., Earamala P.O., Orkkattery Via, Kozhikode, Kerala

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing (web site development, online marketing, bar coding, QR code, social media marketing etc.)	16,39,450.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	6,13,700.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	6,33,350.00
4.	OoH/Below the line activities (Hoardings (print/electronic), bill boards, products demo etc.)	14,46,600.00
	Total	43,28,600.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

14. To carry out various brand promotional programme for 'Natural" brand Coconut Oil- M/s.Kodiyathur SCB Ltd., Ernajimavu, Pannikode P.O., Kozhikode, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	16,12,250.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	6,07,500.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	4,54,100.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	13,72,700.00
	Total	40,46,550.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

15. To carry out various brand promotional programme for 'Green Dew" brand Coconut Oil- M/s.Nanniyode SCB Ltd., Pacha P.O., Trivandrum, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	17,21,400.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	6,83,900.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	6,33,350.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	15,43,100.00
	Total	45,81,750.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

16. To carry out various brand promotional programme for 'Uraco" brand Coconut Oil- M/s.Urungattiri SCB Ltd., Urungattiri, Areacode P.O., Malapuram, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	16,39,050.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	6,91,000.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	4,53,500.00
4.	OoH/Below the line activities	13,85,500.00

	(Hoardings(print/electronic), bill boards, products demo etc.)	
	Total	41,69,050.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

17. To carry out various brand promotional programme for 'Copro" brand Coconut Oil- M/s.Venginissery SCB Ltd., Paralam P.O., Thrissur, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	16,25,100.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	6,49,500.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	4,11,000.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	11,61,700.00
	Total	40,46,300.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

18. To carry out various brand promotional programme for 'Onattukara" brand Coconut Oil- M/s.Onattukara Coconut Producer Company Ltd., Kattanam, Pallickal P.O., Alappuzha, Kerala

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR	2,50,000.00

	code, social media marketing etc.)	
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	9,00,000.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	2,00,000.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	1,50,000.00
5.	Quality certification(ISO 22000/HACCP/QMS)	75,000.00
6	Participation in International Exhibitions	4,50,000.00
	Total	20,25,000.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

19. To carry out various brand promotional programme for 'Thejas" brand Coconut Oil- M/s.Thejaswini Coconut Farmers Producer Company Ltd., C.P. II-376/K7, First Floor, Thattassery Building, Cherupuzha P.O., Kannur, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	4,85,000.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	9,56,300.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	3,00,000.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	1,90,000.00
	Total	19,31,000.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

20. To carry out various brand promotional programme for 'V-nad" brand Coconut Oil- M/s.Valluvanad Coconut Producer Company Ltd., Porunnumparamba, Vattalloor P.O., Makkaraparamba, Malappuram, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	2,56,000.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	10,00,000.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	2,00,000.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	1,50,000.00
5.	Quality certification(ISO 22000/HACCP/QMS)	75,000.00
6	Participation in International Exhibitions	5,00,000.00
	Total	21,90,000.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

21. To carry out various brand promotional programme for "Green Valley" brand Virgin Coconut Oil and Coconut Oil- M/s.Green Valley Oils, Idumpakachola P.O., Kanhirapuzha, Palakkad, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code,	8,49,600.00

	social media marketing etc.)	
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	9,44,000.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	5,18,000.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	4,05,440.00
	Total	27,17,040.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

22. To carry out various brand promotional programme for 'The Happy Grove Co." brand Virgin Coconut Oil & Desiccated Coconut- M/s.KCK Agro Products Private Limited, Plot No.18, KSIDC Industrial Growth Centre, Kinaloor, Kozhikode, Kerala.

Sl. No.	Activities Proposed	Estimated Cost (Rs.)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	16,95,660.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	8,85,000.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	3,95,300.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	92,040.00
	Total	30,68,000.00

PAC discussed the project in detail and approved the project subject to the guidelines and standards followed as per DAVP norms & Directorate of Information and public relations norms. Standards to be worked separately for each component as above.

May be ratified in the next PAC.

Additional items

23. Design, fabrication and standardizing the process parameters of a portable biochar unit for tender coconut husk- ICAR-Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala.

The objectives of the project are as follows

- Design and fabrication of prototype of a portable biochar unit Optimizing the process parameters to produce quality biochar.
- To evaluate the technical performance of the prototype to convert tender coconut husk to biochar
- Modification of the prototype, if required.
- Field demonstration of the biochar unit.

PAC discussed the project in detail and approved the project for Rs.7.00 lakh .

24**. Coconut Wood Processing And Product Diversification- M/s The Edavanakad Service Co-operative Bank Ltd, Edavankad, Ernakulam, Kerala.**

The objectives of the project are as follows:

- Add value to coconut wood by producing and marketing coconut wood products to get sustainable monetary benefits to farmer community and industry associates.
- Promising product options for the furniture and veneer from coconut stem. This involves economic analysis of the value chain, product development.
- Document viable protocols for felling, grading, primary processing at site and factory, chemical treatment and transport methodologies.
- Use coconut wood lumber as a hardwood substitute and introduce to the industry.
- Design, develop and make furniture prototypes using coconut wood as the base raw material.
- Establish experimental veneer- peeling and plywood making with existing industry support.
- Determine the optimum processing parameters and protocols for peeling coconut stems and the properties of the recovered veneer through determination of the primary characteristics of dried and graded veneer.
- Follow standardization procedure for coconut ply with IPRITI.
- Develop product options for the cortex and low density part of the stem and central cores remaining after logging and peeling, for by-product utilization.
- Training unskilled people on coconut felling, sawing and sizing of felled coconut wood at site.

PAC discussed the project in detail and commented that

- Bank feasibility for research to be ascertain from the bylaw of M/s Edavanakad Service Co-operative Bank Ltd and also the capability of the bank to undertake the same.
- Project may be in collaboration with reputed institutes in relevant field like IPRITI, Bangalore
- Outcome of the study to be specific and the project may be restricted to coconut ply only.

  Based on the clarification of the above points, revised proposal can be placed in next PAC.

25. **Setting up of a coconut oil processing unit- M/s. Nanniyode Service Co-operative Bank Ltd. No.T1161, Nanniyode, Pacha PO, Trivandrum, Kerala.**

The objective of the project is to process 20 MT coconuts per day (40,000 coconuts)

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & civil works	-	-	-
Plant & Equipments	138.24	138.24	34.56
Others - Technical civil works	69.76	-	-
Working Capital margin	14.50	-	-
TOTAL	**222.50**	**138.24**	**34.56**

PAC discussed the project in detail and deferred the project since the promoter could not present.

26. Setting up of a coconut oil processing unit- M/s. Venginissery Service Co-operative Bank Ltd., No.R.528, Paralam P O, Thrissur, Kerala

The objective of the project is to process 20 MT coconuts per day (40,000 coconuts)

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & civil works	-	-	-
Plant & Equipments	196.64	196.64	49.16
Pre-operative Expenses	2.50	2.15	0.54

Electrical installation	9.66	9.83	2.45
Others – DG set, ETP Transformer	14.70	8.60	2.15
Working Capital margin	22.50	-	-
TOTAL	**246.00**	**217.22**	**54.30 Limited to 50.00**

PAC discussed the project in detail and deferred the project since the promoter could not present.

Other items:-

Sub: Reconsideration of the building cost for M/s. Green Aura International, Mathramkottu, Engandiyoor, Thrissur, Kerala for the project "Setting up of an Integrated Coconut processing unit for the production of Virgin Coconut oil and Desiccated Coconut Powder unit".

Components	Total Project Cost	Eligible Project Cost	Eligible Subsidy sanctioned by 55th PAC	Proposed Maximum eligible subsidy
	(Rs. in lakh)			
Land	8.75	-	-	-
Building & Civil works	26.45	26.45	-	**6.61**
ETP	4.53	4.52	1.13	**1.13**
Plant & Machinery	77.62	77.62	19.40	**19.40**
Electrification	5.75	3.88	0.97	**0.97**
Generator	3.19	3.18	0.80	**0.80**
Technical know-how	0.60	-	-	-
Computer system and printer	2.81	-	-	-
Preliminary & Pre op. expenses	1.70	1.15	0.29	**0.29**
Working Capital Margin	5.77	-	-	-
TOTAL	**137.17**	**116.80**	**22.59**	**29.20**

PAC discussed the project in detail and suggested

- **Inspection of the unit to be conducted by CDB to ascertain the building and roofing area.**

Sub: Approval of the project "Setting up of a Coconut Wood Briquette Manufacturing unit" in respect of M/s. Pranov Industry, Kodangipatti Village, Bodendrapuram Road, Kodangipatti Post, Bodinaickannur Taluk, Theni, Tamil Nadu.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	17.58	15.84	3.96
Plant & Machinery	86.14	86.14	21.53
Electrification	10.00	4.31	1.08
Furniture, Office equipments & computer	0.84	-	-
Preliminary & Pre op. expenses	0.50	1.06	0.26
Working Capital margin	5.94	-	-
TOTAL	**121.00**	**107.35**	**26.83**

PAC discussed the project in detail and suggested

- Supply chain for raw material availability to be ascertained.
- Technology available for coconut wood briquette to be ascertained.
- Market research study for ascertaining the market potentiality for coconut wood briquettes to be undertaken by the Board by floating EoI.

Other points discussed:-

1. Assistance for building & civil works on lease for ten years need not be considered under TMoC.
2. Lease period can be considered for assistance for the projects according to loan period under TMoC
3. Based on the suggestions a committee can be constituted by CDB to examine and the report be placed before the next PAC for appropriate decision on the modification of the existing guidelines.

PAC meeting concluded with vote of thanks by the Deputy Director (Mkg).

Date: 26.12.2019
Place: Ernakulum

Chief Coconut Development Officer
Coconut Development Board, Kochi

Annexure-I

A	Project Approval Committee
1	Mrs. G. Jayalakshmi IAS Chairperson, Coconut Development Board & Chairman PAC
2	Mr. Dhnaraj Joint Director Dept. of Horticulture Karnataka **Representative of:** The Principal Secretary Horticulture, Government of Karnataka
3	Dr. A.C. Mathew Principal Scientist CPCRI, Kasaragod **Representative of:** The Assistant General (Plantation Crops) Indian Council of Agriculture (ICAR) Pusa, New Delhi
4	Dr. Sanjay Kumar Deputy Commissioner (Hort) DAC&FW, New Delhi **Representative of:** The Horticulture Commissioner Dept. of Agriculture Cooperation & Farmers Welfare New Delhi
5	Dr. Anillumar. R Deputy Agri. Marketing Advisor Directorate of Marketing & Inspection (DMI), Hyderabad **Representative of:** The Joint Secretary & Agri. Marketing Adviser to Govt. of India, Krishi Bhavan, New Delhi-110 001.
6	Dr. K.S.M.S. Raghava Rao Director Central Food Technological Research Institute Mysore-570 020
7	Mr. R.I.A Selvan DGM, NABARD, Hyderabad **Representative of:** The Chairman National bank for Agri.& Rural Development C-24, G Block, Bandra Kural Complex, Mumbai
8	Mr. G. Vijaya Sundar AGM, Indian Overseas Bank Regional Office, Hyderabad **Representative of:**

	The Managing Director & Chief Executive Officer Indian Overseas Bank 763, Anna Salai, Chennai-600 002 Ph: 044-28519500
9	Mr. Saradindu Das Chief Coconut Development Officer Coconut Development Board, Kochi
B	**Co-opted Expert**
1	Mrs. Minnie Mathew IAS (retd)
C	**Officials of CDB**
1	Mr. Sreekumar Poduval Deputy Director (TD&E), CIT, Aluva
2	Mrs. Deepthi Nair. S Deputy Director (Mkg), CDB, Kochi
3	Mrs. Jayashree A, Development Officer, CDB, Kochi

Proceedings of the 57th Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at Kochi through videoconferencing on 08th, 9th, 13th, 14th & 16th October 2020

The 57th meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held through videoconferencing on 8th, 9th, 13th, 14th & 16th October 2020. Smt. G. Jayalakshmi IAS Chairperson, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairperson welcomed all the members of PAC and agenda were taken up.

The Projects related to Adoption were presented for review on 08.10.2020, Pest & Diseases & Processing & Product diversification on 09.10.2020 & Technical support, external evaluation and emergent requirement on 13.10.2020. Those projects that could not be completed on the above specified dates were reviewed by the PAC on 14.10.2020 & 16.10.2020. The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 56th Project Approval Committee Meeting held on 06th December 2019

The Committee confirmed the proceedings of the 56th Project Approval Committee meeting held on 06.12.2019.

AGENDA No. 2: Action Taken Report on Decisions of the 56th PAC Meeting

The committee perused the action taken on decisions of the 56th meeting of Project Approval Committee. It has been informed that 2 (research) projects and 4 (adoption) projects has been sanctioned by the 56th PAC. First installment for 2 research projects and 3 adoption project has been released.

AGENDA No. 3: Approval of Adoption Projects held on 08.10.2020 & 14.10.2020:

Activated Carbon manufacturing units

1. Setting up of an Activated Carbon manufacturing unit - M/s. Eco Fresh Carbon, Office: H-15 Thamirapathi Colony, Thiyagaraja Nagar, Maharaja Nagar Post, Tirunelveli – 627011.

The objective of the project is setting up of an Activated Carbon manufacturing unit with a capacity to process 10 tons of coconut shell charcoal per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	lease	-	-
Building & Civil works	188.87	63.96	15.99
Plant & Equipments	225.75	215.06	53.77
Electrification	7.00	-	-
Generator	7.09	5.00	1.25
Pre operative expenses	1.50	1.50	0.37
Working Capital margin	16.79	-	-
TOTAL	**447.00**	**285.52**	**71.38 Limited to Rs.50.00**

The technical, financial and marketing aspects of the proposed unit were discussed in detail and based on the discussion, **PAC approved the project with a maximum eligible subsidy of Rs.50.00 lakh.**

2. Setting up of an Activated Carbon manufacturing unit – M/s. Aliph Carbon Pvt. Ltd., Office: 1/498, Vadakkethodi house, Aripra, Perinthalmanna, Malappuram, Kerala.

The objective of the project is setting up of an Activated Carbon manufacturing unit with a capacity to process 21 tons of coconut shell charcoal per day for producing 7 tons of activated carbon per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	lease	-	-
Building & Civil works	127.61	108.00	27.00
Plant & Machinery	239.52	239.52	59.88
Electrification	12.38	11.97	2.99
Generator	7.50	5.00	1.25
Pre operative expenses	5.00	3.64	0.91
Working Capital margin	50.00	-	-
TOTAL	**442.01**	**368.13**	**92.03 Limited to 50.00**

The technical, financial and marketing aspects of the proposed unit were discussed in detail and based on the discussion, **PAC approved the project with a maximum eligible subsidy of Rs.50.00 lakh.**

3. Setting up of an Activated Carbon manufacturing unit – M/s. Kalimati Carbon Pvt. Ltd., Office: 10 C Middleton Row, 7th Floor, Kolkata - 700 071, West Bengal Factory: Plot No.115, SIPCOT Industrial Complex, Bargur Pochampalli, Krishnagiri 635206, TN.

The objective of the project is setting up of an Activated Carbon manufacturing unit with a capacity to produce 3 Tons of AC per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	50.00	30.85	7.71
Plant & Machinery	278.73	151.60	37.90
Electrification	23.00	7.83	1.96
Generator	5.85	5.00	1.25
Preliminary & Pre-op. expenses	3.00	1.95	0.49
Working Capital margin	15.15	-	-
TOTAL	**375.73**	**197.23**	**49.31**

The technical, financial and marketing aspects of the proposed unit were discussed in detail and based on the discussion, **PAC approved the project with a maximum eligible subsidy of Rs.49.31 lakh.**

Desiccated Coconut Powder Manufacturing Units

4. Setting up of a Desiccated Coconut Powder manufacturing unit - M/s. Ananya Agro Foods, Harisamudra Gate, Halkurke Road, Tiptur, Tumkur, Karnataka – 572201.

The objective of the project is setting up of a Desiccated Coconut Powder manufacturing unit with a capacity to process 25000 nuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	Own	-	-
Building & Civil works	75.65	53.00	13.25
Plant & Machinery	140.76	139.83	34.96
Electrical installation	-	-	-
Preliminary & Pre op. expenses	2.00	1.93	0.48
Others	-	-	-
Working Capital Margin	2.31	-	-
TOTAL	**220.72**	**194.76**	**48.69**

The promoter had also submitted a project for the establishment of coconut shell charcoal granules which was reviewed by the PAC and found to be viable for support. PAC was of the opinion that subsidy for two projects, though different products, need not be extended at the same time to the same promoter. **PAC rejected the project on desiccated coconut powder.**

5. Setting up of a Desiccated Coconut Powder manufacturing unit - M/s. Mandhra Exports, 3/86, Malapalayam Road, Opp. Bank of Baroda, Senjerimalai, Coimbatore - 641669, Tamil Nadu.

The objective of the project is setting up of a Desiccated Coconut Powder manufacturing unit with a capacity to process 10000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	48.00	20.68	5.17
ETP	8.00	8.00	2.00
Plant & Machinery	62.86	61.53	15.38
Electrification	3.48	3.33	0.83
Generator	8.55	5.00	1.25
Preliminary & Pre-op. expenses	0.51	0.51	0.13
Working Capital Margin	9.60	-	-
TOTAL	**141.00**	**99.05**	**24.76**

PAC discussed the project in detail and suggested to conduct preliminary inspection of the unit.

Project may be placed before next PAC

6. Setting up of a Desiccated Coconut manufacturing unit - M/s. Vaishnavi Enterprises, Sy No.28/2, Tiptur Kalkere Road, Huchanahatti, Halepalya Post, Tiptur – 572202, Karnataka.

The objective of the project is setting up of a Desiccated Coconut manufacturing unit with a capacity to process 25000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	80.00	53.00	13.25
Plant & Equipments	58.19	49.16	12.29
ETP	8.00	8.00	2.00
Electrification	4.00	1.60	0.40
Generator	4.50	4.50	1.12
Working Capital margin	10.91	-	-
TOTAL	**165.60**	**116.26**	**29.06**

PAC discussed the project in detail and suggested that since the project loan was sanctioned in 2014 and the project was held up due to litigation, the following details may be collected and the project placed before the next PAC.

- Interim order on the clearance obtained
- Loan repayment details, overall term loan due and repayment details during the litigation period
- Legal opinion

Project may be placed before next PAC

Desiccated Coconut Powder and Flakes unit

7. Setting up of a Desiccated Coconut Powder and Flakes manufacturing unit - M/s. Abhishek Agro Industries, Harisamudra Gate, Halkurke Road, Tiptur, Tumkur, Huliyar Road, Karnataka – 572201

The objective of the project is setting up of a Desiccated Coconut Powder and Flakes manufacturing unit with a capacity to process 15000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	Lease	-	-
Building & Civil works	79.00	-	-
Plant & Equipments	142.36	142.36	35.59
Electrical installation	-	-	-
Pre-operative expenses	-	-	-
Others	-	-	-
Working Capital Margin	6.23	-	-
TOTAL	**227.59**	**142.36**	**35.59**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.35.59 lakh subject to release of subsidy after inspection of the unit and ratification in next PAC.**

Integrated coconut processing units

8. Setting up of a Desiccated Coconut and Virgin Coconut Oil manufacturing Unit - M/s. Yakshasri Agri Products Pvt. Ltd., 3-173/1, Nada Padukone, Kundapur, Udupi - 576262, Karnataka.

The objective of the project is setting up of a Desiccated Coconut and Virgin Coconut Oil unit with a capacity to process 10000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	Own	-	-
Building & Civil works	65.00	49.00	12.25
RO Water Plant	3.71	3.71	0.93
Plant & Machinery	119.30	118.88	29.72
Electrification	5.00	5.00	1.25
Generator	6.97	5.00	1.25
Technical knowhow	0.70	-	-
Computer System and Printer	2.66	-	-
Working Capital Margin	16.66	-	-
TOTAL	**220.00**	**181.59**	**45.40**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.45.40 lakh subject to following conditions:**

- Preliminary inspection of the unit by the Board.
- Release of 1st installment will be considered after submission of the completion of training report from CFTRI, Mysore.

9. Setting up of a Virgin Coconut Oil & Desiccated Coconut Manufacturing unit - M/s. Indomitra Farm Products Pvt. Ltd., SF No. 212/5A, Uthupalayam, Arasur Village, Coimbatore – 641407.

The objective of the project is setting up of a Virgin Coconut Oil and Desiccated Coconut manufacturing unit with a capacity to process 12000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	Lease	-	-
Building & Civil works	8.92	-	-
Plant & Equipments (including ETP)	96.99	96.99	24.25
Technical know-how	-	-	-
Electrification	8.37	4.84	1.21
Generator	-	-	-
Preliminary & Pre op. expenses	14.04	1.01	0.25
Working Capital Margin	29.08	-	-
TOTAL	**157.40**	**102.84**	**25.71**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.25.71 lakh.**

Coconut Shell Charcoal Manufacturing Unit

10. Setting up of a Coconut Shell Charcoal manufacturing Unit - M/s. Excellent Carbon, No.4/74C, Balaji Industrial Partk, Phase – I, Senthampalayam, Ponnegounden Pudur P O, S S Kulam (Via), Coimbatore – 641107

The objective of the project is setting up of a Coconut Shell Charcoal manufacturing unit with a capacity to process 30 Tons of coconut shell to produce 10 Tons of coconut shell charcoal per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Plant & Machinery	70.80	70.80	17.70
Electrification	6.23	3.54	0.89
Preliminary & Pre-op. expenses	0.62	0.62	0.15
Working Capital margin	8.17	-	-
TOTAL	**85.82**	**74.96**	**18.74**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.18.74 lakh** subject to submission of the details of venture capital from SFAC**.**

11. Setting up of a Coconut Shell Charcoal Manufacturing unit - M/s. Kera Carbon, Pavoor Poyya, Vorkady Manjeshwar, Pavoor PO 671323Kasaragod District, Kerala.

The objective of the project is setting up of a Coconut Shell Charcoal manufacturing unit with a capacity to produce 3 Tons of coconut shell charcoal per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	20.00	12.01	3.00
Plant & Machinery	53.50	53.50	13.38
Electrification	5.00	2.85	0.71
Generator	3.50	3.50	0.87
Preliminary & Pre-op. expenses	1.90	0.72	0.18
Working Capital margin	5.10		
TOTAL	**89.00**	**72.58**	**18.14**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project in principle with a maximum subsidy of Rs.18.14 lakh** subject to submission of lease agreement and details of venture capital support received from SFAC.

Coconut Shell Charcoal Granules Unit

12. Setting up of a Coconut Shell Charcoal granules Unit - M/s. K R S Agri Care, Harisamudra Gate, Halkurke Road, Tiptur, Tumkur, Huliyar Road, Karnataka – 572201.

The objective of the project is setting up of a Coconut Shell Charcoal granules unit with a capacity to produce 15 Tons of coconut shell charcoal granules per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev.	Own	-	-
Plant & Equipments	125.87	125.08	31.27
Building & Civil works	76.50	34.50	8.625
Electrical installation	-	-	-
Pre-operative Expenses	-	-	-
Others	-	-	-
Working Capital margin	3.00	-	-
TOTAL	**205.37**	**159.58**	**39.89**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.39.89 lakh.**

Spray Dried Coconut Milk Powder Unit

13. Expansion of a Spray Dried Coconut Milk Powder unit - M/s Shriram Coconut Products Ltd., Sy No.750/1-4 & 749/5B2, P B #1, Sevugampatti, Dindigul Road, Batlagundu, TN – 624202.

The objective of the project is expansion of a Spray Dried Coconut Milk Powder unit with a capacity to process 40 – 45 thousand coconuts per day for producing 2000 Kg of coconut milk Powder.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev. (Lease)	5.00	-	-
Building & Civil works	69.00	-	-
Plant & Equipments (including generator)	218.61	168.86	42.22
Electrical installation	15.00	8.44	2.11
ETP (added civil)	-	-	-
Technology transfer fee	-	-	-
Preliminary & Pre op. expenses	6.17	1.77	0.44
Working Capital Margin	13.22	-	-
TOTAL	**327.00**	**179.07**	**44.77**

The unit was extended a support of Rs. 2.5 lakh in 1999 before the introduction of the scheme TMoC for the setting up of coconut milk powder unit**.**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.44.77 lakh subject to inspection of the unit.**

Virgin Coconut Oil units

14. Expansion of Virgin Coconut Oil unit for the production of value added products - M/s. Unycare Coconut Products, Nadal PO, Edakkad, Pin – 670663 Kannur Dist., Kerala.

The objective of the project is expansion of Virgin Coconut Oil unit for the production of value added productswith a capacity to process 25000 coconuts per day for production of value added cosmetic products from VCO.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works (renovation)	18.00	12.25	3.06
Plant & Equipments	51.50	45.40	11.35
Electrification	2.00	2.00	0.50
TOTAL	**69.50**	**59.65**	**14.91**

It may be noted that during 2013 in the 40th PAC an amount of Rs.32.437 lakh was sanctioned and released in three installments for setting up of VCO and DC unit with an installed capacity of 15,000 coconuts per day. The repayment details for the same may be obtained for record.

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.14.91 lakh.**

15. Setting up of Virgin Coconut Oil manufacturing unit - M/s. Rubco Coconuts India Pvt. Ltd., (Fully owned by Kerala State Rubber Co-operative Ltd.) Rubco House, South Bazar, Kannur – 670002.

The objective of the project is setting up of Virgin Coconut Oil manufacturing unit with a capacity to process 4500 coconuts per day for producing 300 litres of VCO.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	Own	-	-
Building & Civil works	79.00	-	-
Plant & Equipments	66.00	62.68	15.67
Electrical installation	5.00	3.21	0.80
ETP	4.50	4.50	1.12
Technology transfer fee	-	-	-
Preliminary & Pre op. expenses	3.00	0.72	0.18
DG set	1.50	1.50	0.38
Working Capital Margin	16.00	-	-
TOTAL	**175.00**	**72.61**	**18.15**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.18.15 lakh.**

Coconut Oil Units

Three projects were placed before the PAC seeking support for establishment of Coconut Oil processing units out of which two were submitted by Co-operative Societies and one by a private entrepreneur who is also a ex defence personnel. The Committee discussed in detail on extending support to Coconut Oil processing units which was a traditional product. The scheme Technology Mission on Coconut was introduced in coconut sector in 2001-02 in order to promote processing and product diversification in coconut. Smt. Minnie Mathew IAS, co-opted expert pointed out that the main objective of TMoC was to promote product diversification, new

product development, adoption of innovative technologies and encouraging research in this direction. This was with a view to enable coconut farmers to get higher income and reduce dependency on coconut oil which was subject to a lot of fluctuations on account of market vagaries. It would therefore not be advisable to continue supporting the establishment of coconut oil units under TMOC unless they are adopting modern or innovative technology or producing other variants of coconut oil which will result in higher value addition and income augmentation.

Extending support for establishment of Coconut Oil units has been discussed in previous PAC meetings and it was suggested in the 56thPAC meeting that support could be extended to coconut oil processing units proposed by Farmer Producer Organisations and Cooperative Societies. The Committee took note of the fact that as per the MIDH guidelines for TMoC scheme, under adoption of technologies for processing and product diversification, the cost norm is 25% of the cost of technology adoption and as per operational guidelines, eligible institutions include registered cooperative societies, entrepreneurs, individuals, NGOs or any institution having the capability to adopt proven technologies in processing/product diversification. The Committee also noted that apart from the Board, support for coconut processing units was included in the schemes of Ministry of Food Processing Industries under Creation/Expansion of Food Processing/Preservation Capacities where pattern of assistance is 35% of the eligible project cost subject to a maximum of Rs.5 crores in general areas. But the units for assistance would be considered in Mega Food Parks and agro processing clusters assisted by the Ministry. The Committee also discussed the fact that coconut oil was still the most traded commodity from coconut and globally two third of the trade of coconut products was coconut oil, which is not consumed as edible oil but goes in for a variety of industrial uses for production of fatty acids, fatty alcohols, glycerine, methyl esters etc which further are utilised in lubricants, toiletries, paints, varnishes, detergents etc. The project proposals on coconut oil were perused by the Committee taking into account the above aspects related to the product.

16. Setting up of a Coconut Oil manufacturing Unit - M/s. Venginissery Service Co-operative Bank Ltd., No.R.528, Paralam P O, Thrissur District, Kerala – 680563.

The objective of the project is setting up of a Coconut Oil manufacturing unit with a capacity to process 20 MT coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & civil works	-	-	-
Plant & Equipments	196.64	196.64	49.16
Pre-operative Expenses	2.50	2.15	0.54
Electrical installation	9.66	9.83	2.45
Others – DG set, ETP	14.70	8.60	2.15

Transformer			
Working Capital margin	22.50	-	-
TOTAL	**246.00**	**217.22**	**54.30 Limited to 50.00**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.50.00 lakh**.

17. Setting up of a Coconut Oil manufacturing Unit - M/s. Nanniyode Service Co-operative Bank Ltd. No.T1161, Nanniyode, Pacha P O, Trivandrum - 695 562.

The objective of the project is setting up of a Coconut Oil manufacturing unit with a capacity to process 20 MT coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & civil works	-	-	-
Plant & Equipments	138.24	138.24	34.56
Others - Technical civil works	69.76	-	-
Working Capital margin	14.50	-	-
TOTAL	**222.50**	**138.24**	**34.56**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.34.56 lakh**.

18. Setting up of a Coconut Oil and Oil Cake manufacturing Unit - M/s. Jawan Oil Mill, CP11/268A, Padinjarekkara, Cheruvannur Grama Panchayath, Padinjarekkara, Muyippoth, Perambra, Koyilandy, Kozhikode – 673528.

The objective of the project is setting up of a Coconut Oil and Oil Cake manufacturing unit with a capacity to process 10000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & civil works	11.70	7.93	1.98
Plant & Equipments	29.94	29.02	7.26

Pre-operative Expenses	0.54	0.38	0.09
Electrical installation	4.61	1.45	0.36
(Others). ETP	1.50	-	-
Working Capital margin	-	-	-
TOTAL	**48.29**	**38.78**	**9.69**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.9.69 lakh subject to the inspection of the unit.**

Ball copra units

19. Setting up of a Ball copra unit –M/s. Sri lakshmi Durga Coconuts, D No.1 – 82, Opp Sadhana School, Nidamarru (IMD), Bavayapalem Post, West Godavari District, AP – 534198.

The objective of the project is setting up of a Ball Copra unit with a capacity to process 27 lakh coconuts per year.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Platform Dryer	40.00	31.27	7.82
TOTAL	**40.00**	**31.27**	**7.82**

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.7.82 lakh subject to the inspection of the unit.**

20. Setting up of a Ball copra unit - Shri. Lingolu Srinivasa Rao, S/o Lingolu Satyanarayana Murthy, 6-17/1, Rajupalem, Allavaram, East Godavari District, AP – 533217.

The objective of the project is setting up of a Ball Copra unit with a capacity to process 4250 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	30.00	28.64	7.16

Working Capital Margin	12.00	-	-
TOTAL	**42.00**	**28.64**	**7.16**

The father of the promoter received assistance from the Board in 2016 for a total amount of Rs.3.75 lakh.

After detailed discussion on the technical, financial and marketing aspects of the proposed unit, **PAC approved the project with a maximum eligible subsidy of Rs.7.16 lakh.**

Other items

1. **Sub: Reconsideration of the building cost for M/s. Green Aura International, Mathramkottu, Engandiyoor, Thrissur, Kerala for the project "Setting up of an Integrated Coconut processing unit for the production of Virgin Coconut Oil and Desiccated Coconut Powder unit".**

Components	**Total Project Cost**	**Eligible Project Cost**	**Eligible Subsidy sanctioned by 55th PAC**	**Proposed Maximum eligible subsidy**
	(Rs. in lakh)			
Land	8.75	-	-	**-**
Building & Civil works	26.45	23.77	-	**5.94**
ETP	4.53	4.52	1.13	**1.13**
Plant &Machinery	77.62	77.62	19.40	**19.40**
Electrification	5.75	3.88	0.97	**0.97**
Generator	3.19	3.18	0.80	**0.80**
Technical know-how	0.60	-	-	**-**
Computer system and printer	2.81	-	-	**-**
Preliminary & Pre op. expenses	1.70	1.15	0.29	**0.29**
Working Capital Margin	5.77	-	-	**-**
TOTAL	**137.17**	**114.12**	**22.59**	**28.53**

After detailed discussion, **PAC approved the project with a maximum eligible subsidy of Rs.28.53 lakh** by including the building cost of Rs.5.94 lakh for 2777 sq.ft. area. The inspection report along with photographs need to be included in the report for records.

2. **Sub: Reconsideration of the building cost for M/s. Old Goa Oils and Foods Pvt. Ltd.,Mogo Plot No.N-50, Phase IV, Near Asian Paints & D-Link, Verna Industrial Estate, Verna, Salcete, Goa – 403722 for the project "Setting up of Virgin Coconut Oil manufacturing unit" at Goa.**

Components	Total Project Cost	Eligible Project Cost	Eligible Subsidy sanctioned by 55th PAC	Proposed Maximum eligible subsidy
	(Rs. in lakh)			
Land	Lease	-	-	-
Building & Civil works	45.00	45.00	-	11.25
Plant &Machinery	120.45	115.58	28.89	28.89
ETP	15.00	10.00	2.50	2.50
Electrification	17.27	5.78	1.44	1.44
Fire hydrant fire alarm system	2.74	-	-	-
Computer system	1.05	-	-	-
Preliminary & Pre op. expenses	4.17	1.31	0.33	0.33
Technical know-how	0.59	0.59	0.15	0.15
Working Capital Margin	16.66	-	-	-
TOTAL	**222.93**	**178.26**	**33.31**	**44.56**

After detailed discussion, **PAC approved the project with a maximum eligible subsidy of Rs.44.56 lakh** by including the building cost of Rs.11.25 lakh since the lease agreement for 30 years has been submitted.

3. **Sub: M/s. Indcarb Activated Carbon Pvt. Ltd., New Industrial Development Area (India), Kanjikode, Palakkad, Kerala for the project "Setting up of Coconut shell based Steam Activated Carbon Unit" – Report placed before PAC**

PAC perused the both reports and approved. The **inspection report along with photographs to be included in the report for records.**

4. **Sub: M/s. Pranov Industry, Kodangipatti Village, Bodendrapuram Road, Kodangipatti Post, Bodinaickannur Taluk, Theni, Tamil Nadu for the project "Setting up of a Coconut Wood Briquette Manufacturing unit".**

The details of market study on Asia charcoal briquettes market including charcoal from coconut was presented. The market stood at USD 952.5 million in 2019 and the market size is

expected to showcase a CAGR of 6.2% during the forecast period of 2020-2024. The major utilization of charcoal briquettes in industries (metallurgical, automotive etc for heat intensive processes) which preferred them to mitigate global warming, grilled and barbecued foods. The promoter has informed that the raw material is to be sourced from Shri. P. Thunaimani Timbers and Wood Waste, Theni and M/s. A. P. S Timbers & Plywoods, Theni each of 10 tons of coconut wood per day.

After detailed discussion, **PAC** suggested to forward the documents on technology used for the production of coconut wood briquette along with the sources of raw material supply to IIFPT, Thanjavur for expert opinion.

Ratification

1. **Sub: Setting up of an Integrated Coconut Processing Unit for Coconut products like Coconut Milk Powder, Coconut Sugar – M/s. De Alben, 6/49 B, K.Pungampalayam, Marudhur Post, Karamandai, Coimbatore, Tamilnadu - reg.**

After detail discussion, **PAC approved the project with a maximum eligible subsidy of Rs.31.35 lakh for establishment of coconut sugar unit only. The inspection report along with photographs is to be included in the report for records.**

AGENDA No. 4: Approval of Projects related to Pest & Diseases & Processing & Product diversification held on 09.10.2020 & 16.10.2020:

1. **Development and Validation of Biointensive Integrated Pest Management strategies for Coconut Invasive Whiteflies in Karnataka- ICAR-National Bureau of Agricultural Insect Resources (NBAIR), Bengaluru, Karnataka.**

The objectives of the project are as follows:-

1. To develop bio-intensive integrated pest management (BIPM) modules for invasive whiteflies infesting coconut in Karnataka.
2. To mass produce the potential biocontrol agents viz., parasitoids, predators and entomopathogenic fungi for distribution and field validation in coconut of Karnataka.
3. To validate the BIPM modules at different climatic conditions for the management of invasive whiteflies of coconut in Karnataka.
4. To give hands-on training on mass production and establishment of biocontrol agents production unit to extension officials, scientists of SAUs, KVKs and FPOs.

PAC discussed the project in detail and suggested that the project should focus only on the bio-intensive IPM studies initially. PAC **approved the project for Rs. 22.99 lakh for a**

project duration of 2 years 4 months only after excluding the cost for Toxicological data generation/registration and institutional charges.

2. **Developing Integrated Crop Management Methods for Coconut Invasive Whiteflies and Validation under area wide integrated ICM methods (AWICM) through Farmer Participatory Approach in Tamil Nadu-Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India.**

The objectives of the project are as follows:-

1. To assess the terrestrial arthropod communities, seasonality, damage and the trophic structure and relationship in coconut after invasion by the alien species comprising RSW and BNW.
2. To study the long term impact of the invasive species and abiotic stress on palm health and yield loss.
3. To use Artificial Intelligence and remote sensing technologies for the Area wide monitoring and surveillance of RSW and BNW and other anticipated new invasive pests and diseases (Brontispalongissimaetc).
4. To exploit the induced systematic resistance phenomenon against RSW and BNW through exogenous foliar nutrition by drone technology and soil application by ground methodologies.
5. To promote biodiversity of beneficial arthropod communities and services through profitable crop mixes in coconut ecosystem.
6. To study the feasibility of inaculative/ inundative release of Mallada spp. Against RSW and BNW.
7. To validate the integrated crop management (ICM) methods under area wide integrated ICM methods (AWICM) through farmer participatory approach.
8. To empower farmers and rural youth/ unemployed graduates of coconut growing districts through capacity or skill development programmes on mass production and distribution of biocontrol agents.

PAC discussed the project in detail and observed that the project may focus on one concept instead of diversified objectives. PAC suggested that the project could be resubmitted by developing into three projects as

1. Development of Integrated Crop Management (ICM) method for control of whitefly
2. Studying the efficacy, mass production and methodology for release of Mallada sp.against RSW and BNW
3. Artificial Intelligence and remote sensing technologies for the area wide monitoring and surveillance of RSW and BNW and other anticipated new invasive pests and diseases

PAC decided to defer the project.

3. **Diversity analysis of Ganoderma sp. Infecting coconut and their eco-friendly management-ICAR- Central Plantation Crops Research Institute, Kasaragod, Kerala, India**.

The objectives of the project are as follows:-

1. To understand the diversity of Ganoderma sp. infecting coconut and key epidemiological factors aggravating disease spread and severity.
2. To develop an eco-friendly integrated disease management strategy with more efficient and effective bio control agents.

PAC discussed the project in detail and suggested that the PI should explore the possibilities of sharing the equipments like table top refrigerated ultra centrifuge, high resolution DSLR camera with accessories, high precision electronic balance and UPS backup for PCR with the institute itself. **PAC approved the project in principle with a total project cost not exceeding Rs. 30.00 lakhs for a project duration of two years and place the same in next PAC.**

4. **Screening and Identification of root (wilt) resistant superior coconut mother palms for the large scale production of disease free elite palm seedlings on Onatukkara- Kerala Agricultural University (KAU), Kayamkulam (ORARS), Kerala, India.**

The objectives of the project are as follows:-

1. To identify root wilt resistant high yielding coconut palms in the area.
2. Large scale production of elite palm seedlings.
3. Revive the coconut cultivation in the Onattukara region by supply of quality seedlings.

PAC discussed the project in detail and suggested the project is a duplication of work already done by CPCRI in Onattukara region and a database of mother palms has been developed which could be shared by CPCRI. **PAC decided not to consider the project.**

5. **Formulation development of entomopathogenic fungi, Simplicillium spp. and its utilization in the management of coconut invasive whiteflies- ICAR- Central Plantation Crops Research Institute, Kasaragod, Kerala, India.**

The objectives of the project are as follows:-

1. Standardization of mass production techniques for Simplicillium spp. with longer shelf life.

2. Bio-efficacy of Simplicillium spp. on invasive coconut whiteflies and its impact on non-target organisms.
3. Demonstration of whitefly management with entomopathogenic fungi, Simplicillium spp. in hot spot areas at Kasargod, Kerala.

PAC discussed the project in detail and **approved the project for Rs. 17.82 lakh for a project duration of 2 years after excluding the cost for toxicological data generation.**

6. Production of Natural enemies for the management whitefly fauna of coconut- University of Horticultural Sciences, Horticultural Research & Extension, Hassan district, Karnataka, India.

The objectives of the project are as follows:-

1. Survey on whiteflies of coconut in major coconut growing areas of Karnataka. (Hassan, Tumkur, Mysore, Mandya, Ramanagara and Shivamogaa)
2. Identification of hot spot areas for whitefly in coconut.
3. Production and supply of natural enemies for the management of whitefly in coconut.
4. Creating awareness among coconut growers regarding management whitefly in coconut through trainings, and mass media.

PAC discussed the project in detail and suggested that the PI may kindly look into preliminary study on *Encarsiaguadeloupae* and *Dichochrysa aster* done by other institutes. Further PAC also suggested that the PI to have a discussion with Central Plantation Crop Research Institute (CPCRI), Kasargode and develop a concrete revised proposal.

PAC decided to defer the project.

7. Establishment of bio control laboratory in Dr. Y.S.R. Horticultural University, Andhra Pradesh for mass production of bio agents- Dr. Y.S.R. Horticultural University, Ambajipeta, East Godavari, Andhra Pradesh, India.

The objectives of the project are as follows:-

1. To establish bio control units for mass production of bio agents.
2. To mass produce need based bio agents and supply the same to the farmers.

PAC discussed the project in detail and **approved the project for Rs. 27.25 lakh for a project duration of 12 months subject to the following conditions**

1. Furnishing future plan of the biocontrol lab for next five years even after the completion of Boards funding

2. Production details proposed for the biocontrol agents per year
3. Potential for involving FPO's in adopting technology by availing assistance under TMOC to be explored.

8. Development of a rapid farmer friendly Phytoplasma detection tool for Root Wilt Disease- M/s. Unibiosys, Biotech Research Labs, Kalamassery, Cochin, Kerala, India.

The objectives of the project are as follows:-

1. To develop a device to detect the pathogen quickly, efficiently, easily and with high sensitivity.
2. To develop a point of care detection technology for coconut farmers for the easy identification of pathogens without lab expertise.

PAC discussed the project in detail and observed that as per the norms of TMOC for 'development of technology for management of insect pest and disease affected garden',50% of the total project cost limited to Rs.25.00 lakh can be considered for NGOs and other organizations.PAC discussed the project in detail and **approved the project for Rs. 9.17 lakh for project duration of 1 years and 6 months.** PAC also suggested to submit the final prototype of the device to the Board.

9. Development of Biodegradable Plate from Tender Coconut Husk- ICAR- Central Plantation Crops Research Institute (CPCRI) ,Kasaragod, Kerala, India.

The objectives of the project are as follows:-

1. Study the structural and mechanical properties of tender coconut husk.
2. Optimizing the process parameters to produce biodegradable plate.
3. To evaluate the mechanical, barrier and biodegradable behaviour of the developed plate.
4. Modification of the process parameters, if required.

PAC discussed the project in detail and suggested to reduce the project period, to explore the possibility of outsourcing the texture analyzer and to do project in collaboration with other institutes having facilities required for the project. **PAC recommended to place the revised project before the next PAC.**

10. Tender coconut water from shell to gel- CSIR - Central Food Technological Research Institute (CFTRI), Mysuru, Karnataka, India.

The objectives of the project are as follows:-

1. Enriching the nutritional profile of tender coconut water (TCW) by membrane process and/or freeze drying.
2. Development of restructured electrolyte dense TCW gels by embedding in gel matrix.
3. Extending the shelf life of TCW in newer gel form.

PAC discussed the project in detail and **approved the project for Rs. 24.662 lakh for a project duration of 2 years**. PAC also suggested to study the alternate uses of TCW gel in confectionaries and beverages.

11. Nutritional evaluation of protein and fibers from spent coconut and by-products of coconut processing- CSIR - Central Food Technological Research Institute (CFTRI), Mysuru, Karnataka, India.

The objectives of the project are as follows:-

1. Isolation and separation of proteins and soluble fibres from spent coconut and by products of coconut processing.
2. Nutritional evaluation of proteins and soluble fibres from spent coconut in experimental animals.
3. Utilization of spent coconut constituents (protein and soluble fibres) as food supplements and product development.
4. Utilization of insoluble fibres (Crystalline cellulose) for pharmaceutical and food supplement applications (as natural laxatives).

PAC discussed the project in detail and reduced the cost of contingencies to Rs. 1.00 lakh ie. Rs. 50,000/- per year. **PAC approved the project for Rs. 23.838 lakh for a project duration of 3years.**

12. Medium chain triglycerides (MCTs) enriched oil and its functionality- CSIR - Central Food Technological Research Institute (CFTRI), Mysuru, Karnataka, India.

The objectives of the project are as follows:-

1. Characterization of the raw material: Physico- chemical, functional and nutraceutical properties of the conventionally produced coconut oil and extracted virgin coconut oil.
2. Optimization of the methodology for developing MCTs enriched Virgin Coconut oil using enzymatic and chemical catalysis methods in combination with thermal and non thermal processes.
3. Formulation and standardization of two MCTs based products (a beverage mix and chocolates) and studies of their physic chemical characteristics, sensory quality and storage stability of the prepared products.

4. Scale- up/ large scale trials of the process for the separation of MCTs from VCO, and demonstration and transfer of technology.

PAC discussed the project in detail and **approved the project for Rs. 42.10 lakh for a project duration of 3 years only after excluding the cost for homogenizer and GC/centrifuge spare parts and accessories.**

13. Development of edible and bio degradable food packaging containers and cutleries from senile coconut wood, coconut milk residue and coconut de-oiled cake. CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram, Kerala, India.

The objectives of the project are as follows:-

1. Development and optimization of processing parameters for senile coconut palm wood based biodegradable products (food packaging containers, plates, bowls, cups and cutleries) by compression and injection method.
2. Optimize the parameters for developed products with different raw material composition (sugarcane bagasse, rice husk and banana stem fibre).
3. Development and optimization of processing parameters for coconut milk residue, coconut de oil cake and wheat bran based edible products (food packaging containers, plates of various sizes, bowls, cups, forks, knife and spoon).
4. To study quality, mechanical, thermal and barrier properties of developed products.
5. Shelf- life studies, biodegradability test, CO_2 emission test and cost- effective analysis comparison with existing plastic products.

PAC discussed the project in detail and **approved the project in principle subject to the following conditions**

1. The project duration should be reduced to 18 months.
2. The manpower should be reduced to one ie project assistant grade II need to be excluded.

PAC recommended to submit the revised project.

14. Development of 3D printed MCT oil pastilles- Indian Institute of Food Processing Technology, Thanjavur, Tamil Nadu, India.

The objectives of the project are as follows:-

1. Preparation and optimization of MCT oil oleogel.

2. Standardization of extrusion process and 3D printability of MCT oil pastilles.
3. Incorporation of nutraceutical compounds into the 3D printed oleo gel structures.
4. Characterization and validation of 3 D printed nutraceutical oleo gels for stability and bioavailability.

PAC discussed the project in detail and suggested to propose the project for isolating MCT from coconut oil and then go for 3D printing. The sources should be from coconut oil only. **PAC decided not to consider the project.**

15. **Techno economic feasibility of coconut sugar production using open pan evaporator, vacuum pan evaporator and spray dryer- ICAR- Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, India.**

The objectives of the project are as follows:-

1. To study the technical viability of coconut sugar production using modified open pan evaporator, vacuum pan evaporator and spray dryer.
2. To standardize the processing parameters of sugar production by the three methods.
3. To study the economic feasibility of coconut sugar production by the three methods.
4. To develop the quality standards of coconut sugar.

PAC discussed the project in detail and observed that the cost of equipments is 88% of the total project cost and the project is not cost feasible. The PAC also suggested to reduce the capacity of vaccum pan evaporator to 25 litres and spray dryer to 1-2 litres. **PAC decided to defer the project.**

16. **Design and development of Smart Copra dryer-Kerala Agricultural University, Mannuthy, Thrissur, Kerala, India.**

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The objectives of the project are as follows:-

1. Design and development of a forced convection batch type copra dryer for high quality copra production
2. Conduct field test and assess the performance of developed copra dryer comparing with that of natural convection batch type copra dryer.

PAC discussed the project in detail and **approved the project for Rs. 9.15 lakh for a project duration of 12 months.**

17. **Development of Potentially Viable Coconut Value Added Products- Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India.**

The objectives of the project are as follows:-

1. To standardize the technology for the production of coconut kernel leather.
2. To study the physic chemical changes during storage with suitable packaging materials.

PAC discussed the project in detail and **approved the project for Rs. 12.30 lakh for project duration of 18 months after excluding the cost for Automatic Cup filling and sealing machine and Impulse sealer.**

18. Coconut neera sugar and its Glycemic Index (GI) and Glycemic Load (GL) studies - CSIR- National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram, Kerala, India.

The objectives of the project are as follows:-

1. Standardization of sugar preparation procedure and comparison with the popular procedures that are currently available
2. Sensory and shelf life studies
3. GI&GL Studies of 3 samples of neera sugar (developed by CPCRI, CSIR-NIIST and a branded sample) and tender coconut water with 6-8 months maturity.
4. Exploration of bioactives.

PAC discussed the project in detail and **approved the project for Rs. 10.153 lakh for project duration of 12 months.** PAC suggested to do the project in human trials only with all the safety precautions related to Covid-19. Further PAC suggested that the PI should study on lowering the GI below 50 so that the coconut sugar will have a market in India. PAC also recommended to analyze the coconut sugars produced in Indonesia and Philippines too in comparison with the other three samples suggested to have a comparison.

19. Desiccated Coconut Industry Effluent Treatment – Model demonstration plant - CSIR- National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram, Kerala, India.

The objectives of the project are as follows:-

1. Customized designing of ETP for treating the effluent from desiccated coconut industries.
2. Installation of ETP at a desiccated coconut factory site.
3. Commissioning, Performance monitoring and analysis.
4. Demonstration to prospective users & other stakeholders.

PAC discussed the project in detail and suggested that the proposal could be considered after obtaining approval from the Department of Science and Technology, Govt. of India, New Delhi**. PAC decided not to consider the project.**

20. Development and Setting-up of Pilot-Scale Production of Supercapacitor Grade Activated Carbon Derived from Coconut Shell based Charcoal for Electrical Energy Storage Applications- International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Balapur, Hyderabad, Andhra Pradesh, India.

The objectives of the project are as follows:-

1. Development and setting-up of pilot-scale production of supercapacitor grade activated carbon derived from coconut shell based charcoal.
2. Screening and selection of different grade carbons used as raw materials
3. In-depth characterisation of obtained supercapacitor grade activated carbon in each and every batch of production.
4. Fine-tuning of the pore size and surface area of activated carbon according to the ionic size of the selected electrolyte
5. Evaluation of the electrochemical performances of the obtained supercapacitor grade activated carbon for electrical energy storage applications.
6. Testing and validation of supercapacitor grade activated carbon materials.
7. Field trials and improve upon the quality on the basis of buyers on the feedback/ requirements
8. Market research, Market sensitization and Market feasibility analysis
9. Development of process technology for supercapacitor grade activatedcarbon in pilot scale
10. Technology transfer to the Industry for commercialization.

PAC discussed the project in detail and observed that project cost is on the higher side and since activated carbon is having a steady market growth, partial funding from industry could also be considered. PAC also suggested that a market study for supercapacitor grade activated carbon will ensure viability of the project. **PAC decided not to consider the project.**

21. Proposal for setting up of mini coconut extraction processing unit at Resubelpara andR- Bhoi districts- Govt. of Meghalaya, India.

The objective of Technology Demonstration cum Business Incubation centre is to offer techno-economics to the entrepreneur/coconut producer/self help group for setting up coconut processing units. In the initial stage it is proposed to set up a virgin coconut oil an defatted desiccated coconut demonstration unit. The centre shall also have the mandate to develop feasible technologies to the beneficiaries though training cum process demonstration.

PAC discussed the project in detail and suggested the following:-

1. A government land preferable with building, belonging to any agriculture/horticulture department to be identified, for the project.
2. Identify registered FPO's who are already dealing with horticulture produce under horticulture department in Resubelpara and R- Bhoi districts for the project.
3. Information on the cluster of farmers and their numbers who are going to undergo training should also be furnished.

PAC decided to defer the project.

AGENDA No. 5: Approval of Projects related to Technical support, external evaluation and emergent requirement held on 13.10.2020:

1. Soil and Leaf test Based integrated nutrient management for sustained palm health and productivity in coconut- ICAR- Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, India.

The objectives of the project are as follows:-

1. To assess the soil and leaf nutrient status in coconut gardens of selected AEUs.
2. To demonstrate the efficacy of soil and leaf test based application of nutrient combinations on sustaining palm health and productivity
3. Developing a nutrient management package for sustained palm health and productivity

PAC discussed the project in detail and observed that the research concept of the project is of a general study related to integrated nutrient management which has already been undertaken and the project cost and project duration is very high. **PAC decided not to consider the project.**

2. Demonstration cum training on drip and fertigation technique for coconut farmers of Theni and Dindigul districts-Tamil Nadu Agricultural University (TNAU), Periyakulam, Tamil Nadu, India.

The objectives of the project are as follows:-

1. To impart hands on training on drip irrigation and fertigation techniques to small and marginal coconut growers of Theni and Dindigul districts.
2. To lay out fertigation demonstration units in 10 farmers holdings of the Theni and Dindigul districts.

3. To increase coconut yield by reducing input cost to ensure the livelihood security of small and marginal coconut growers.

PAC discussed the project in detail and observed that drip and fertigation technologies have already been standardized and there is no technology innovation in the project. PAC suggested that demonstrations of the project can be done in collaboration with/assistance from State Govt. in farmer's field having irrigation and fertigation facility, with contribution from farmers. **PAC decided not to consider the project.**

3. Demonstration of micro irrigation and fertigation techniques for coconut in ARS, Bhavanisagar- Tamil Nadu Agricultural University (TNAU), Coimbatore, Tamil Nadu, India.

The objectives of the project are as follows:-

1. To conduct the demonstration on hi-tech cultivation techniques (drip irrigation and fertigation) in established coconut garden.
2. To create awareness and educate the small and marginal coconut growers on hi-tech cultivation techniques through conduct of trainings.

PAC discussed the project in detail and observed that drip and fertigation technologies have already been standardized and there is no technology innovation in the project. PAC suggested that demonstrations of the project can be done in collaboration with/assistance from State Govt. in farmer's field having irrigation and fertigation facility, with contribution from farmers. **PAC decided not to consider the project.**

4. Impact of water/ soil moisture conservation to enhancing production of coconut under rainfed and deficit irrigated farms- ICAR-Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, India.

The objectives of the project are as follows:-

1. To analyze the impact of water/ soil moisture conservation techniques in coconut gardens on soil moisture, soil nutrient status and ground water resource.
2. To assess the effect of water/ soil moisture conservation on coconut yield and economics.

PAC discussed the project in detail and **approved the project subject to conditions**

- The project should be implemented in a farmer participatory mode through cluster approach.
- Total project cost should be reduced.
- Clusters should be selected carefully in contiguous areas where the farmers are willing to contribute their own resources.

Further PAC also suggested that the first installment will be released after submission of the revised project and further funds will be released based on the progress of the project as per the approved conditions.

PAC recommended to submit the revised project.

5. **Production of quality seedlings of coconut through *in vitro* culture techniques- Tamil Nadu Agricultural University, Madurai, Tamil Nadu, India.**

The objectives of the project are as follows:-

1. To produce quality seedlings through organogenesis and somatic embryogenesis.
2. To evaluate the plantlets for genetic fidelity and field transfer of hardened plants.

PAC discussed the project in detail and **approved the project for Rs. 30.24 lakh only after excluding the cost for International training and travel.**

6. **Establishment of a molecular marker based accreditation laboratory for coconut hybrids- ICAR-Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, India.**

The objectives of the project are as follows:-

1. To establish infrastructure for setting up a molecular marker based accreditation laboratory for coconut seedlings.
2. To fingerprint parental lines used in coconut hybrid seed production using microsatellite markers and to develop a DNA fingerprint database of the parental lines used in hybrid seed production.
3. To undertake molecular marker-enabled authentication of coconut hybrids.
4. To distribute QR code labeled authentic coconut hybrids to stakeholders.

PAC discussed the project in detail and **approved the project subject to the following conditions**

- Inspection of the institute by an internal committee of the Board to ascertain the facilities and equipments available with the institution.
- Only those equipments not available with the institute need to be considered.
- The cost of the equipments should be based on the quotations and PI is requested to share the details of the tender process.
- Equipment cost will be restricted to the actual cost.

7. **Identification of Drought Tolerant Coconut Palms in Tamil Nadu and Utilization for Developing Adaptive Gene Pool- ICAR-Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, India.**

The objectives of the project are as follows:-

1. Identification of palms showing tolerance to low moisture stress in areas where deficit rainfall was recorded for three consecutive years.
2. Characterization of local coconut populations, including identified drought tolerant palms.
3. Collection of seed nuts from the identified palms and raising seedling progenies
4. Progeny testing and seedling selection.
5. Distribution of selected seedling progenies for evaluation for low moisture stress tolerance in areas receiving low rain fall.

PAC discussed the project in detail and **approved the project subject to the following conditions**

- The project study should be restricted to two years.
- Institutional charges not to be included as the mandate of both the organizations (CDB & CPCRI) is the same.
- The project should include only 1 JRF and 1 Field Assistant.
- Contingencies should be reduced to Rs. 50,000/- per year making the total cost at Rs. 1.00/- lakh for 2 years.

PAC recommended to submit the revised project.

VI. Market Research

8. An Economic Analysis of Value Chain of Coconut in Union Territory of Puducherry- Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Nedungadu, Karaikal, Tamil Nadu.

The objectives of the project are as follows:-

1. To study the area and production trends of Coconut in Pondicherry and Karaikal region
2. To identify the value added products of Coconut in the supply chain of the study area
3. To estimate the marketing cost, marketing margin, price spread, marketing efficiency and farmer's share in consumer rupee in various supply chains
4. To study the factors affecting the marketing efficiency of various supply chains of Coconut in the study area.
5. To analyze the constraints of key players of various supply chain of Coconut in the study area.
6. To suggest the suitable strategies to enhance the area, production, marketing efficiency of Coconut.

PAC discussed the project in detail and observed that the project is more of academic nature rather than benefitting farmers directly. Value chain studies have to be undertaken in a larger area for meaningful conclusions like in the major coconut growing states in South India. **Hence PAC decided not to consider the project.**

VII. Market Promotion

9. The guidelines and standards for the different components under market promotion viz., Brand publicity through mass media, digital marketing, printing of publicity materials and outdoor advertising were developed and presented. **PAC approved the proposal**.

VIII. Other items

1. Development and Launching of Tetra Packed Neera in Kerala- M/s Palakkad Coconut Producers Company Ltd (PCPCL), 10/728 A, Little Tree, Urkulam, Govindapuram,(PO), Muthalamada, Palakkad- 678007 Kerala, India.

The objectives of the project are as follows:-

1. Product Development: Neera and Neera blends with Fruit juices in tetra packs.
2. Evaluation of Shelf life.
3. Consumer Acceptability Tests of Product**.**

PAC discussed the project in detail and observed that 75% of the total project cost limited to Rs.35.00/- lakh can only be given. **Further PAC approved the funding of the trials on the product development of Neera with other blends, testing and designing of tetra pack for improving the shelf life of Neera, the total cost coming to Rs. 32.14 lakh (total of items 1 to 6) with a subsidy limited to Rs.24.10 lakh.**

PAC also suggested that for activities related to marketing of the product, PCPCL can approach CDB separately for assistance under Market Promotion once the product is launched.

2. Refinement of in vitro inflorescence culture of coconut for multiplication of true- to-type planting materials - ICAR- Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, India.

The objectives of the project are as follows:-

1. Refinement of in vitro immature inflorescence culture of coconut with regard to shoot regeneration, rooting and ex vitro hardening
2 . Assessment of clonal fidelity of in vitro raised plantlets using molecular markers.

PAC discussed the project in detail after deducting the cost of water purification unit, and limiting cost under research contingencies chemical/glass wares/lab wares **approved the project for Rs. 28.95 lakh for a project duration of 3 years.**

Ratification

1. Production of Carbon Molecular Sieves from Coconut Residues/ Wastes- Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India.

Subject: Incorporation of the institutional charges (10% of the recurring cost) in the project.

PAC approved the revised project cost of Rs. 18.25 lakh by including Rs. 0.75 lakh as institutional charges.

Other points discussed:-

1. A cost norm for the machinery required for the major coconut processing units supported under the scheme may be developed and a Technical Committee with members from CFTRI, IIFPT and CPCRI was proposed to develop the same.
2. A preliminary inspection of the units may be undertaken before the release of the first installment of subsidy.
3. Market studies on potential domestic and international markets for activated carbon may be undertaken.
4. Market study on the potential domestic and international markets for desiccated coconut may be undertaken including the impact of import of desiccated coconut on the domestic industry.
5. Chairperson, CDB has instructed that the completed research projects can also be presented in PAC meeting by the respective institutions.
6. PAC meetings could be convened quarterly based on the number of projects received under TMoC scheme of Board.
7. Chairperson, CDB has instructed that the maximum ceiling amount that can be provided for the purchase of equipments under a research project should be assessed by an Internal Committee of the Board and placed for approval.
8. In order to promote the development of coconut industry in north eastern states, more seminars/webinars, trainings and other activities should be conducted in NE states.

PAC meeting concluded with vote of thanks by the Chief Coconut Development Officer.

Date: 20.10.2020
Place: Ernakulum

Chief Coconut Development Officer
Coconut Development Board, Kochi

Annexure-I

A	Project Approval Committee
1	Mrs. G. Jayalakshmi IAS Chairperson, Coconut Development Board & Chairman PAC
2	Secretary Horticulture, Government of Karnataka **Represented by** Shri. K. Dhanaraj, Joint Director of Horticulture Karnataka
3	Asst. Director General (Plantation Crops), ICAR **Represented by** Dr. Anitha Karun Director, ICAR- Central Plantation Crops Research Institute (CPCRI) Kasargod, Kerala
4	The Horticulture Commissioner Department of Agriculture & Cooperation Krishi Bhavan, New Delhi-110 001 **Represented by** Dr.Sanjay Kumar Dy. Commissioner(Hort.) DAC&FW,Krishi Bhawan,New Delhi
5	Ministry of Food processing Industries **Represented by** Dr. C. Anandaramakrishnan, Director, IIFPT, Thanjavur, Tamil Nadu
6	Joint Advisor, Directorate of Marketing and Inspection **Represented by** Shri. Prasanth Chakravarthy Asst. Agrl Mkg Adviser Kakkanad, Kochi, Kerala & Shri Venu Gopal Reddy R., Marketing Officer, DMI, R.O, Kochi, Kerala

7	The Director Central Food Technological Research Institute,Mysore **<u>Represented by</u>** Dr. G. Suresh Kumar, Scientist Dept. of Biochemistry CSIR- Central Food Technological Research Institute , Mysuru , Karnataka & Dr. Sukumar Debnath Senior Principal Scientist Dept. of Food Engineering CSIR- Central Food Technological Research Institute , Mysuru , Karnataka
8	Chief General Manager, Technical Service Dept., NABARD, Mumbai **Representative by:** Smt. Dini S. Panikar Deputy General Manager NABARD, Trivandrum, Kerala
9	Chief General Manager, Indian Overseas Bank Bangalore **<u>Represented by</u>** Shri Philip Y. Chief Regional Manager, Indian Overseas Bank Regional Office, No.2384, Vettukattil Building, 5th Floor Jose Jn., M G Road, Ernakulam, Kochi
10	Mr. Saradindu Das Chief Coconut Development Officer Coconut Development Board, Kochi
B	**Co-opted Expert**
1	Mrs. Minnie Mathew IAS (retd)
C	**Officials of CDB**
1	Shri. R. Madhu Secretary, CDB, Kochi
2	Smt. Deepthi Nair. S. Deputy Director, CDB, Kochi
3	Shri Sreekumar Poduval Deputy Director (TD&E) CIT, Vazhakulam, Aluva

4	Mr. Pramod. P. Kurian, Assistant Director, CDB, Kochi
5	Mr. Sebastian K.S, Assistant Director (Marketing), CDB, Kochi
6	Shri P. Sabareenathan Finance Officer, CDB, Kochi
7	Mrs. Vincy Varghese, Technical Officer, CDB, Kochi
8	Mrs . Sharon Mariam Jacob Processing Engineer (on contract, CDB, Kochi)

Proceedings of the 58th Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at Kochi through videoconferencing On 21st March 2022

The 58th meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held through videoconferencing on 21st March 2022.Shri.Rajbir Singh Panwar IFS, Chairman, Coconut Development Board and Chairman PAC presided over the meeting. At the outset Chairman welcomed all the members of PAC and agenda were taken up.

The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 57thProject Approval Committee Meeting held on 8th, 9th, 13th, 14th& 16th October 2020

The Committee confirmed the proceedings of the 57th Project Approval Committee meeting held on 8th, 9th, 13th, 14th& 16th October 2020.

AGENDA No. 2: Action Taken Report on Decisions of the 57thPAC Meeting

The committee perused the action taken on decisions of the 57th meeting of Project Approval Committee. It has been informed that 14 (research) projects and 17 (adoption) projects has been sanctioned by the 57th PAC. First installment for 14 research projects and 6 adoption projects, 2nd installment of 5 adoption projects & 3rd& final installment of 4 adoption projects has been released.

AGENDA No. 3: Approval of New Project Proposals:

1. **Diversity analysis of Ganoderma sp. Infecting coconut and their eco-friendly management – ICAR-Central Plantation Crop Research Institute, Kasargode, Kerala.**

The objectives of the project are as follows:-

1. To understand the diversity of Ganoderma sp.infecting coconut and key epidemiological factors aggravating disease spread and severity.
2. To develop an eco-friendly integrated disease management strategy with more efficient and effective bio control agents.

PAC discussed the modifications made to the project as per suggestions made during the previous meeting and **approved the project with a total eligible financial assistance of Rs. 30.00 lakh** for a duration of 2 years.

2. **Dynamics of exotic whitefly complex on coconut, population assessment and evolving eco-friendly management strategies-University of Horticultural Sciences, Horticultural Research & Extension, Karnataka**

The objectives of the project are as follows:-

1. Dynamics of exotic whitefly geo-morphs on coconut and population assessment versus weather factors in different agro-ecological regions of the Karnataka state
2. Assessment of co-existence of whitefly complex and competitive regulation of whiteflies
3. Identification of defender population pertaining to each whitefly species and mass production of potential natural enemies and area-wide demonstration
4. Capacity building and knowledge empowerment of different stakeholder for the state

PAC discussed the modifications made to the project as per suggestions made during the previous meeting. PAC also discussed the aspect that CPCRI had published technical bulletin on management of white fly. Since the project period is for 2 years, PAC opined that the sustainability of the project needs to be ascertained even after the project period. It was suggested to distribute the bio-control agents on a cost basis for ensuring sustenance. The project title was changed to "Production of natural enemies for the management of whitefly" in accordance with the modification of the objectives. **The PAC approved the project with an eligible financial assistance of Rs.25.00 lakhs for a duration of 2 years, since the project comes under demonstration of technology.**

3. **Front Line Demonstration of Bio-Intensive Integrated Pest Management for coconut white grub LeucopholisconeophoraBurmeister - ICAR-Central Plantation Crop Research Institute, Kasargode, Kerala.**

The objectives of the project are as follows:-

1. To demonstrate the refined Integrated Pest Management package of coconut white grub in farmer's field and envisage participatory learning
2. To assess the impact of adoption of IPM technology on farm income
3. To create awareness and capacity building programmes for extension personnel and farmers on the management of root grubs infesting coconut palm

PAC discussed the proposal and suggested to reduce the capital cost. Under TMOC, the maximum eligible financial assistance is Rs.25.00 lakh for demonstration of technology. Since perfect technology for IPM of white grub is already available, it was suggested that project cost may be reduced to Rs.25.00 lakh by reducing the area of demonstration from 5ha to 3-3.5 ha and working out the actual cost based on the new proposed area of demonstration. **The project was approved in principle subject to the condition that the suggestions may be incorporated.**

4. **Demonstration and creation of awareness for the integrated management of root wilt disease of coconut with microbial consortia in Tamil Nadu: A farmer participatory approach - Tamil Nadu Agricultural University (TNAU),Coimbatore, TamilNadu.**

The objectives of the project are as follows:-

1. To conduct large scale demonstrations (100 acres) for the integrated management of root wilt disease of coconut with microbial consortia in Tamil Nadu through farmers' participatory approach
2. To create awareness among the coconut farmers of Tamil Nadu for the integrated management of root wilt disease of coconut

PAC discussed the project and requested for clarification on the source of funding since the project cost proposed was Rs.76.69 lakh and the maximum eligible financial assistance that could be extended by the Board, if approved, was only Rs.25.00 lakh. The PAC also requested for details on the microbial consortia proposed to be used in the demonstration for management of root wilt. The details on toxicological data generated and registration under Central Insecticide Board and Registration Committee (CIB&RC)also needs to be ascertained. **PAC suggested to revise the project suitably based on the discussions providing all relevant details for consideration of PAC as a fresh project.**

5. **Low temperature-Low humidity drying of Desiccated coconut - National Institute of Food Technology, Entrepreneurship & Management (NIFTEM)- Thanjavur, Tamil Nadu**

The objectives of the project are as follows:-

1. To study the effect of Low temperature-Low humidity drying on physicochemical, functional and structural properties of Desiccated coconut.
2. To study the effect of different parameters on Low temperature-Low humidity drying of Desiccated coconut.
3. To determine the storage stability and quality characteristics of Desiccated coconut.
4. Optimization of low-temperature- Low- humidity drying of Desiccated coconut.

PAC discussed the proposed project. The co-opted expert in PAC from NIIST informed that the technology proposed to be developed was not a new technology since the same was developed successfully for other products by them in 2009 itself and technology transfer also undertaken. He opined that the proposed technology was scalable only up to 2 MT. Also desiccated coconut is manufactured by other methods currently, the quality of the product is good and acceptable in the market and scalable up to 5 MT. **The PAC suggested that the project may be modified and a comparative study done with the available technology and placed before next PAC with proper justification.**

6. **NMR (nuclear magnetic resonance) based metabolites profiling of coconut water – CSIR-Central Food Technological Research Institute, Mysuru, Karnataka.**

The objectives of the project are as follows:-

1. Development of ^{1}H-NMR method for coconut water.
2. Quality control by targeted analysis of a multitude of relevant parameters like sugars, organic and amino acids.
3. Variation in metabolites with respect to fluctuation and age of coconut

PAC discussed the proposal in detail on the study of the profiling of metabolites at different stages of maturity, the affordability by industry and the potential for the same likely to become mandatory under FSSAI in future. The NMR profiling done in case of honey was also quoted. **The PAC approved the project with an eligible financial assistance of Rs. 15.29 lakh with a project duration of 20 months.**

7. **Development and characterization of coconut oil and bioactive compound enriched edible Oleogel as a shortening alternate to bakery fat - CSIR-Central Food Technological Research Institute, Mysuru, Karnataka.**

The objectives of the project are as follows:-

1. To formulate, optimize Oleogel from coconut oil with other vegetable oils which are rich in mono and poly unsaturated fatty acids.
2. To develop coconut oil blendOleogel with suitable gelator and evaluate stability under different conditions.
3. To incorporate lipophilic bioactive components to the coconut oil blend Oleogel in order to maximize its nutritional profile and improve the stability / bio-accessibility.
4. To eliminate hydrogenated fat/ shortening with suitable ratio of lipophilic molecule enriched coconut oil blend Oleogel for bakery applications.
5. To evaluate in-vitro lipolysis & starch digestibility of Oleogel and bakery products.
6. To evaluate toxicity and dietary effect on obese rat models.

PAC discussed the project and suggestedto study the incorporation of plant based carriers with micronutrients which would add to the healthy profile of the oleogeland could be promoted as a nutraceutical. **The PAC approved the project with an eligible financial assistance of Rs.25.37 lakh for a duration of 2 years.**

8. **Development of novel food products and convenience foods based on coconut kernel - M/s. Vanavarayar Institute of Agriculture, Manakkadavu, Pollachi, Tamil Nadu**

The objectives of the project are as follows:

1. Development of new technology to evolve recipes for kernel products with long term storage life from mature coconut which are suitable for city, upcountry markets and for export.
2. To study different methods to minimize microbial spoilage and extended long term storage life for the products developed.
3. Development of packaging technologies and labelling for individual products, so as to increase their shelf life and improve consumer acceptance.
4. To work out the cost economics for the above mentioned products at microenterprises level.
5. To test and demonstrate the technology in the campus for prospective entrepreneurs and self help groups.
6. To act as a common facility center for SHGs and entrepreneurs in the region for scaling up production of the innovative value added products developed to commercial levels observing statutory obligations, branding the products and marketing through a common sales outlet.

PAC discussed the project and its application for small scale processing by farmers and farmer groups for production of coconut products. The PAC **approved the project for an eligible financial assistance of Rs.35.00 lakh** being 75% of the project cost as per norms for a project duration of 3 years with a suggestion for proper monitoring in different stages of product development, establishment of incubation centre and transfer of technology to entrepreneurs.

9. **Separation, Purification and Characterization of Valuable Compounds from Coconut Waste/by-products for incorporation in health foods - Vignan's Foundation for Science, Technology and Research (VFSTR), Guntur, Andhra Pradesh**

The objectives of the project are as follows:

1. Standardization of methods for solvent field assisted extraction of poly phenols from coconut brown testa.
2. Process development of protein powder with enhanced protein value (albumins, globulins, prolamines, glutelins-1, and glutelins-2) from defatted coconut flour, coconut whey (soluble) and insoluble protein obtained in Centrifugation for the production of VCO
3. Sensory analysis and storage studies of the products developed
4. Scale up, large scale/pilot plant trails and Technology transfer.

The project was discussed and **approved by PAC for an eligible financial assistance of Rs.22.485 lakh** being the 75% of the project cost as per norms for a project duration of 3 years with a suggestion that the extraction protocol need to be totally green, free from hazardous solvent and to establish the health aspects in term of invivo and invitro studies.

10. Effects of exosomal micro RNAs isolated from tender and mature coconut water on gut health and microbiome dynamics - CSIR-*National Institute for Interdisciplinary Science and Technology* (*NIIST*), Trivandrum, Kerala

The objectives of the project are as follows:-

1. Isolation of exosome like nanoparticles (ELNs) from tender and mature coconut water
2. Physico chemical and biological characterization of isolated ELNs.
3. Effects of ELNs and its miRNAs on gut health and microbiome dynamics.

PAC discussed the project and approved with an eligible financial assistance of Rs.22.63 lakh for a duration of 18 months. It was also suggested to undertake invivo studies.

11. Development of Biodegradable Plate from Tender Coconut Husk - ICAR-Central Plantation Crop Research Institute, Kasargode, Kerala.

The objectives of the project are as follows:-

1. Optimizing the process parameters to produce biodegradable plate
2. To evaluate the mechanical, barrier and biodegradable behaviour of the developed plate
3. Modification of the process parameters, if required

PAC discussed and approved the project with an eligible financial assistance of Rs.25.50 lakh for a project duration of 2 years in collaboration with CSIR-NIIST, Trivandrum. It was also suggested that the technology could be utilized by coconut farmers, start-ups and entrepreneurs, ITC was already involved in ecofriendly endeavoursin collaboration

with farmers. It was also informed that SFAC is providing 50% subsidy of the project cost to similar enterprises involved in production of eco-friendly materials.

12. Techno economic feasibility of coconut sugar production using open pan evaporator, vacuum pan evaporator and spray dryer

The objectives of the project are as follows:-

1. To study the technical viability of coconut sugar production using modified open pan evaporator, vacuum pan evaporator and spray dryer.
2. To standardize the processing parameters of sugar production by the three methods.
3. To study the economic feasibility of coconut sugar production by the three methods.
4. To develop the quality standards of coconut sugar.

PAC discussed the project and suggested to modify the project since the spray drying method is not found economical for coconut sugar in comparison with the other methods. It was suggested to have formulations based on coconut sugar as a functional food with nutraceutical properties. **It was suggested to place the modified project before next PAC.**

Desiccated Coconut Powder Unit

13. Setting up of a Desiccated Coconut Powder Manufacturing unit - M/s. K A Sons Coconut Industries, Sy No. 463/423, B H Road, Niluvaagilu Village, HunsurTaluk, Mysore District, Karnataka – 571105

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 30000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own		
Building & Civil works	131.00	83.00	20.75
Plant & Machinery	75.00	75.00	18.75
Working Capital Margin	22.00	-	-
TOTAL	**228.00**	**158.00**	**39.50**

PAC discussed the project and **approved for an eligible subsidy of Rs.39.50 lakh**.

14. Setting up of a Desiccated Coconut Powder Manufacturing unit - M/s. Alavi and Sons Coconut Products, Sy No. 63, Kelkere Road, Halepalya Post, Tiptur – 572201, Tumkur District, Karnataka

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 40000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	Own	-	-
Building & Civil works	75.00	55.20	13.80
Plant & Machinery	69.11	69.11	17.27
ETP	8.85	8.85	2.21
Working Capital Margin	20.19	-	-
TOTAL	**173.15**	**133.16**	**33.29 Limited to 16.15**

PAC discussed the project and observed that the **firm had already availed subsidy amounting Rs. 50.43 Lakh from DIC, Government of Karnataka. Accordingly PAC approved the project, limiting the subsidy to Rs.16.15 Lakh, restricting total subsidy to 50% of eligible project cost.**

15. Expansion, Modernization and automation of the existing Desiccated Coconut unit - M/s Krishna Agro Industries, 1/266, 1/267, Asodu, Koteshwara, KundapuraTaluk, Udupi District, Karnataka 576222

The objective of the project is setting up of a Desiccated Coconut unit with a capacity to process 25000 coconuts per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works (Renovation & construction of well)	30.50	28.92	7.23
Plant &Machinery	49.28	41.99	10.50
ETP	23.60	10.00	2.50
RO water plant	2.77	2.77	0.69
Electrification	5.41	2.35	0.59
Generator	6.35	5.00	1.25
Preliminary & Pre op. expenses	2.09	0.91	0.23
Working Capital Margin	5.00	-	-
TOTAL	**125.00**	**91.94**	**22.99**

PAC discussed and did not approve the project as the unit is more than 20 years old.

16. Setting up of Desiccated Coconut Powder unit - M/s Naidu Agro Corp, Reg Office: No.1464, Sri Shivarathana, 3rd main Road, Near reliance Tower, Lakshmipura, Arsikere – 573103, Hassan District, Karnataka

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 15000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	25.00	25.00	6.25
Plant &Machinery	62.51	62.51	15.63
ETP	10.00	9.44	2.36
Electrification	3.00	3.00	0.75
Generator	3.00	2.54	0.63
Working Capital Margin	8.49	-	-
TOTAL	**112.00**	**102.49**	**25.62**

PAC discussed the project and **approved with an eligible subsidy of Rs.25.62 lakh.**

17. Expansion and Upgradation of Desiccated Coconut unit - M/s Sharavati Agrotech Pvt Ltd., Sy. No.48, Mugwa, Kulkod, HonavarTq, Karnataka - 581 334

The objective of the project is setting up of a Desiccated Coconut unit with a capacity to process 25000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev.	Own	-	-
Building & Civil works	10.00	10.00	2.50
Plant &Equipments	83.00	67.11	16.78
Electrical installation	2.00	2.00	0.50
Preliminary& Pre op. expenses	2.00	0.69	0.17
Working Capital Margin	-	-	-
TOTAL	**97.00**	**79.80**	**19.95**

PAC discussed the proposal and suggested that since it is reported as a new unit as per inspection done by Board officials, the promoter may resubmit the project as new unit instead of expansion of existing unit and place the same before next PAC for consideration.

18. Setting up of Desiccated Coconut Powder unit - M/s. Mathan Engineering Services India Pvt. Ltd., Reg Office: No.14/8, Eswarachettipalayam, Sadayapalayam Post, Kundadam, DharapuramTaluk, Tirupur, TN-638702

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 30000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev	Lease	-	-
Building & Civil works	45.00	45.00	11.25
Plant &Equipments	130.86	120.26	30.06
Furniture & fittings	1.00	-	-
Electrification	30.36	6.01	1.50
Preliminary & Pre op. expenses	4.30	1.71	0.43
Working Capital Margin	19.41	-	-
TOTAL	**230.93**	**172.98**	**43.24**

PAC discussed the project and **approved with an eligible subsidy of Rs.43.24 lakh** subject to submission of NOC from Pollution Control Board

Virgin Coconut Oil Unit

19. Setting up of a Virgin Coconut Oil Manufacturing unit - M/s. C M Products, Office: Sy No.248/3 & 4, Inchmudi Village, Inchamudi P O, Thrissur District, Kerala - 680564

The objective of the project is setting up of a Virgin Coconut oil unit with a capacity to process 2000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-

Building & Civil works	7.50	3.00	0.75
Plant & Machinery	15.68	15.45	3.86
Electrification (including solar panel)	4.88	0.77	0.19
Working Capital margin	5.00	-	-
TOTAL	**33.06**	**19.22**	**4.80**

PAC discussed the project and **approved with an eligible subsidy of Rs.4.80 lakh.**

Activated Carbon blocks & pellets unit

20. Setting up of coconut shell charcoal based activated carbon blocks and activated carbon pellets Manufacturing unit - M/s. Ecogreen Clean Tech Private Limited, Formerly Adsorbent Carbons Private Limited, Reg. Office: C-92, Sipcot Industrial Estate, Tuticorin - 628 008

The objective of the project is setting up of a coconut shell charcoal based activated carbon blocks and activated carbon pelletsunit with a capacity to produce Carbon blocks - 12,00,000 pieces per annum & Pellet Carbon – 1200 mts per annum

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & civil works	-	-	-
Plant &Equipments	209.60	169.03	42.26
Electrical installation	24.60	8.45	2.11
Pre-operative expenses	7.40	1.77	0.44
Others (contingencies)	32.40	-	-
Working Capital margin	-	-	-
TOTAL	**274.00**	**179.25**	**44.81**

PAC discussed the project and **approved with an eligible subsidy of Rs.44.81 lakh.**

Coconut Wood Briquetting unit

21. Expansion of the existing coconut wood briquetting unit - M/s. Sri Murugan Bio Fuels, SF No.59/2, Kallangkattuvalasu, Polavakkalipalayam PO, Gobi Taluk, Erode District, TN – 638476

The objective of the project is setting up of a coconut wood briquettingunit to process 20 tons of coconut wood per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in Lakh)		
Land	Own	-	-
Building & Civil works	Own	-	-
Plant & Machinery	70.38	70.37	17.59
Electrification	5.00	3.52	0.88
Preliminary & Pre op. expenses	0.82	0.70	0.18
Working Capital margin	7.27	-	-
TOTAL	**83.47**	**74.59**	**18.65**

PAC discussed the project and **approved with an eligible subsidy of Rs.18.65 lakh.**

22. Soil Health Management in Coconut Based Cropping Systems Involving Tuber Crops for Enhanced Yield and Income – ICAR-Central Tuber Crops Research Institute, Thiruvanathapuram, Kerala.

The objective of the project is as follows:-

1. To build resilience and generate higher productivity and profit in coconut gardens through frontier nutrient management technologies in tuber crops.

PAC discussed the project and **approved with an eligible financial assistance of Rs. 33.00 lakh**for a duration of 3 years. And also the PI has changed to Dr.D. Jaganathan, Senior Scientist (Agricultural Extension), CTCRI, Thiruvanathapuram.

23. Identification of Drought Tolerant Coconut Palms in Tamil Nadu and Utilization for Developing Adaptive Gene Pool - ICAR-Central Plantation Crop Research Institute, Kasargode, Kerala.

The objectives of the project are as follows:-

1. Identification of palms showing tolerance to low moisture stress in areas where deficit rainfall was recorded for three consecutive years.
2. Characterization of local coconut populations, including identified drought tolerant palms.
3. Collection of seed nuts from the identified palms and raising seedling progenies.

4. Distribution of selected seedling for cultivation in drought affected areas.

PAC discussed the project and **approved with an eligible subsidy of Rs.18.16 lakh for a duration of 2 years.**

Confirmation of Projects placed in the 57th PAC for which observations and comments of PAC members were received and resubmitting for final decision

24. Development of 3D printed MCT oil pastilles – National Institute of Food Technology, Entrepreneurship & Management (NIFTEM)- Thanjavur, Tamil Nadu

The objectives of the project are as follows:-

1. Preparation and optimization of MCT oil oleogel.
2. Standardization of extrusion process and 3D printability of MCT oil pastilles.
3. Incorporation of nutraceutical compounds into the 3D printed oleo gel structures.
4. Characterization and validation of 3 D printed nutraceutical oleo gels for stability and bioavailability.

PAC discussed the project and **approved with an eligible subsidy of Rs.43.10 lakh** for duration of 2 years with inclusion of extraction of MCT from coconut oil. PAC suggested that PAC suggested that the methodology for the extraction of MCT from coconut oil need to be furnished.

25. Development and Launching of Tetra Packed Neera in Kerala - M/s Palakkad Coconut Producers Company Ltd (PCPCL), Palakkad, Kerala

The objectives of the project are as follows:-

1. Product Development: Neera and Neera blends with Fruit juices in tetra packs
2. Evaluation of Shelf life
3. Consumer Acceptability Tests of Product

PAC discussed the project and decided to release an amount of Rs.24.10 lakhs, which was already approved in the 57th PAC subject to concurrence from the Government of Karnataka by 30th April 2022. If concurrence from the Government of Karnataka is not received within the stipulated time, the matter is to be placed before the next PAC.

26. Soil and Leaf test Based integrated nutrient management for sustained palm health and productivity in coconut - ICAR-Central Plantation Crop Research Institute, Kasargode, Kerala.

The objectives of the project are as follows:-

1. To assess the soil and leaf nutrient status in coconut gardens of selected AEUs.
2. To demonstrate the efficacy of soil test based application of essential nutrients on sustaining palm health and productivity.

PAC discussed the project and suggested to modify the project as demonstration of 'Kalpavardhini' and to study on the effect on plant and soil health. Since it comes under demonstration of technology, the project cost need to be limited to Rs.25.00 lakh. PAC **approved the project in principle** subject to modifications suggested.

27. Establishment of a molecular marker based accreditation laboratory for coconut hybrids - ICAR-Central Plantation Crop Research Institute, Kasargode, Kerala.

The objectives of the project are as follows:-

1. To establish infrastructure for setting up a molecular marker based accreditation laboratory for coconut seedlings.
2. To fingerprint parental lines used in coconut hybrid seed production using microsatellite markers to develop a DNA fingerprint database of the parental lines in hybrid seed production.
3. To undertake molecular marker enabled authentication of coconut hybrids.
4. To distribute QR code labeled authentic hybrids to stakeholders.

PAC discussed the project and observed that the Head of the Institution has recommended the project, there is no need for inspection by an internal committee of the Board. **PAC approved the project with an eligible financial assistance of Rs.41.23 lakh with a project duration of 2 years.**

28. Developing Integrated Crop Management Methods for Coconut Invasive Whiteflies and Validation under area wide integrated ICM methods (AWICM) through Farmer Participatory Approach in Tamil Nadu – Tamilnadu Agricultural University, Coimbatore, TamilNadu.

The objectives of the project are as follows:-

1. To assess the terrestrial arthropod communities, seasonality, damage and the trophic structure and relationship in coconut after invasion by the alien species comprising RSW and BNW.
2. To study the long term impact of the invasive species and abiotic stress on palm health and yield loss.
3. To use Artificial Intelligence and remote sensing technologies for the areawide monitoring and surveillance of RSW and BNW and other anticipated new invasive pests and diseases (Brontispalongissimaetc).
4. To exploit the induced systematic resistance phenomenon against RSW and BNW through exogenous foliar nutrition by drone technology and soil application by ground methodologies.
5. To promote biodiversity of beneficial arthropod communities and services through profitable crop mixes in coconut ecosystem.
6. To study the feasibility of inaculative/ inundative release of Mallada spp. Against RSW and BNW.
7. To validate the Integrated Crop Management (ICM) methods under areawide integrated ICM methods (AWICM) through farmer participatory approach.
8. To empower farmers and rural youth/ unemployed graduates of coconut growing districts through capacity or skill developmentprogrammes on mass production and distribution of biocontrol agents

PAC directed to exclude the suggestion of submitting a project on 'Artificial Intelligence and remote sensing technologies for the area wide monitoring and surveillance of RSW and BNW and other anticipated new invasive pests and diseases'. **PAC suggested to modify the project with the other 2 objectives, within the norms of TMOC scheme and resubmit the proposal for consideration of PAC.**

Market Promotion

29. To carry out various brand promotional programme for 'Copol" brand Coconut Oil and Virgin Coconut Oil - The North Malabar District Co-operative Supply & Marketing Society Ltd. No.F 1003, Silk Street, Beach P.O., Kozhikode 673032

Sl. No.	Activities Proposed	Estimated Cost (Rs. in lakh)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	16.251
2.	Brand Publicity through mass media News paper, magazines, TV advertising,	6.495

	AIR, Railway Announcement)	
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	4.11
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	11.613
	Total	**38.469**

PAC discussed and decided not to consider the proposal.

30. To carry out various brand promotional programme for 'Decocos" brand Coconut Oil and other products viz. Neera, Pure Coconut Oil, Virgin Coconut Oil, Baby Oil, Anti Dandruff oil, Neera Honey, Bio dish wash, Veggi wash, Neera honey, Activated Carbon, NeeraJaggery - M/s.Vadakara Coconut Farmers Producer Company Ltd.,Al-Diyafa Complex, Karimbanapalam, Co-Operative Hospital Road, Vatakara, Calicut 673101

Sl. No.	**Activities Proposed**	**Estimated Cost (Rs. in lakh)**
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	4.895
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	19.00
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	6.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	2.10
	Total	**31.995**

PAC discussed and decided not to consider the proposal.

31. To carry out various brand promotional programme for "KERAGEM" Coconut Oil, Virgin Coconut Oil, Neera - Kerala State Coconut Development Corporation Limited(A Government of Kerala Undertaking) Head Office: Elathur P.O., Kozhikode, Kerala 673303

Sl. No.	Activities Proposed	Estimated Cost (Rs. in lakh)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	2.00
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	12.50
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	3.00
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	7.50
	Total	**25.00**

PAC discussed and decided not to consider the proposal.

32. To carry out various brand promotional programme for 'AADRICS' Coconut oil, Virgin Coconut Oil - M/s.Aadrics Agro Products, Edappallam (PO), Naduvattom(Via), Palakkad, Kerala 679308

Sl. No.	Activities Proposed	Estimated Cost (Rs. in lakh)
1	Brand Publicity through digital marketing(web site development, online marketing, bar coding, QR code, social media marketing etc.)	5.62
2.	Brand Publicity through mass media News paper, magazines, TV advertising, AIR, Railway Announcement)	6.10
3.	Printing of publicity materials (Leaflets, pamphlets, Brochures, Posters, pull outs etc.)	3.55
4.	OoH/Below the line activities (Hoardings(print/electronic), bill boards, products demo etc.)	3.75
	Total	**19.02**

PAC discussed and decided not to consider the proposal.

Other items

33. Setting up of Desiccated Coconut Powder manufacturing unit- M/s. Mandhra Exports, 3/86, Malapalayam Road, Opp. Bank of Baroda, Senjerimalai, Coimbatore - 641669, Tamil Nadu

The objective of the project is Setting up of a Desiccated Coconut Powder Manufacturing Unit with a capacity to process 10000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	48.00	20.68	5.17
ETP	8.00	8.00	2.00
Plant & Machinery	62.86	61.53	15.38
Electrification	3.48	3.33	0.83
Generator	8.55	5.00	1.25
Preliminary & Pre-op. expenses	0.51	0.51	0.13
Working Capital Margin	9.60	-	-
TOTAL	**141.00**	**99.05**	**24.76**

PAC discussed and **approved the project with an eligible subsidy of Rs.24.76 lakh** subject to a physical verification of the existing unit before release of funds.

34. Establishment of Tender Coconut Water processing and packing Unit - M/s. Muthuvel Enterprises., SF No.45/7, Vaguthampalayam Village , KinathukadavuTk, Coimbatore, Tamil Nadu

The objective of the project is setting up Tender Coconut Water Processing and Packing Unit with a capacity to process 2000 litre of tender coconut water per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	54.20	40.00	10.00

Plant &Equipments (including electrification)	139.17	128.50	32.12
Pre op. expenses	2.00	1.68	0.42
Working Capital margin	16.00	-	-
TOTAL	**211.37**	**170.18**	**42.54**

PAC discussed and **approved the project with an eligible subsidy of Rs.42.54 lakh.**

35. Setting up of a Copra making unit - M/s. Chengottukavu Federation of Coconut Producer Societies, Koyilandi PO, Kozhikode, Kerala

The objective of the project is "Setting up of a Copra making Unit" with a capacity to process 10000 coconuts per day.

PAC **approved the project with an eligible subsidy of Rs.6.31 lakhs** subject to joint inspection of the unit along with financing institute before release of funds. It is suggested to ascertain the loan repayment status and present status of the unit.

36.Setting up of a Coconut Oil & Oil Cake unit - M/s. Kozhikode Coconut Farmers Producer Company, Coconut Complex, PoyilThazham Road, PuttumannilThazham, Payimbra PO, Kunnamangalm, Kozhikode - 673 571, Koyilandi PO, Kozhikode, Kerala

The objective of the project is "Setting up of a Coconut Oil & Oil Cake Unit" with a capacity to process 10 MT of copra per day for producing 6.40 MT of Coconut Oil and 3.60 MT of Coconut Oil Cake.

PAC **approved the project with an eligible subsidy of Rs.48.68 lakh** subject to joint inspection of the unit along with financing institute before release of funds. It is suggested to ascertain the loan repayment status and present status of the unit.

IV. Ratification of extension of project period

1. Exploration of Entomopathogenic fungus Isariafumosoroseawize for the management of emerging invasive whiteflies in coconut - ICAR-National Bureau of Agricultural Insect Resources, Karnataka

PAC ratified the extension of project period for 3 months upto 12th February 2022.

2. **Application of coconut flour in improving functional, rheological and nutritional properties of wheat dough - CSIR-CFTRI, Mysore, Karnataka**

PAC ratified the extension of project period for 6 months upto September 2021 & 3 months upto December 2021.

3. **Development of fermented tender coconut water with lactic cultures and its functional applications - CSIR-CFTRI, Mysore, Karnataka**

PAC ratified the extension of project period for 6 months uptoMarch 2022.

4. **Evaluation of Coconut Oil for Application in High Voltage Transformer - North Eastern Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh**

PAC ratified the extension of project period for 6 months upto September 2021 & 6 months upto March 2022.

5. **Transforming Coconut Waste into High Value Carbon dots and Development of Nanobased Technology for Disinfection of water - Tamil Nadu Agricultural University, Coimbatore**

PAC ratified the extension of project period for 6 months upto March 2022.

6. **Pest and Disease Surveillance on Coconut Palms by Unmanned Aerial Vehicles (UAV) - ICAR-Central Plantation Crops Research Institute (CPCRI), Kasaragode, Kerala**

PAC ratified the extension of project period for 6 months upto September 2021 & 3 months upto December 2021.

7. **Processing of coconut milk, development of beverage from curcumin enriched nanoemulisiifed coconut milk (partially defatted) coconut - CSIR-CFTRI, Mysore, Karnataka &Tezpur University, Tezpur, Assam**

PAC ratified the extension of project period for 3 months upto June 2021.

8. **Development of Sensors for Quality Evaluation of Coconut Oil - NIFTEM, Thanjavur, Tamil Nadu**

PAC ratified the extension of project period for 6 months upto September 2021.

9. **Effect of Virgin Coconut Oil on Cardio metabolic Parameters in Patients with Dyslipidemia: A Randomized, add- on, Placebo Controlled Clinical Trial - All India Institute of Medical Sciences, Bhubaneswar, Odisha**

PAC ratified the extension of project period for 6 months upto September 2021.

10. **Development of Sensory Lexicon for Selected Coconut Based Products - CSIR-CFTRI, Mysore, Karnataka**

PAC ratified the extension of project period for 6 months upto September 2021.

11. **Design and Development of Digital Image Database with an Android Apps and Web system for the detection of major pests and diseases of coconut of Assam - Assam Agricultural University, Jorhat**

PAC ratified the extension of project period for 6 months upto September 2021.

12. **Design and Development of Reactor for Processing of Coconut-Based Beverages with UV-C Irradiation - CSIR-CFTRI, Mysore, Karnataka**

PAC ratified the extension of project period for 3 months upto June 2021.

13. **Developing Chitosan Nano formulation as an alternate to toxic sulphur for the safe preservation of coconut copra - Tamil Nadu Agricultural University, Coimbatore**

PAC ratified the extension of project period for 6 months upto March 2022.

IV. Revalidation of unspent balance

1. **Improved Coconut Wood Canoes for Small Scale Fishing Sector of Southeast Coast of India- ICAR-Central Institute of Fisheries Technology (CIFT), Kochi, Kerala.**

PAC ratified the revalidation of unspent amount of Rs.6,12,706/- to be utilized during the current financial year 2021-22 till 31st March 2022.

2. **Establishment of bio control laboratory in Dr. Y.S.R. Horticultural University, Andhra Pradesh for mass production of bio agents- Dr. Y.S.R. Horticultural University, Venkataramanagudem, Andhra Pradesh.**

PAC ratified the revalidation of unspent balance of Rs.13,62,500/- to be utilized during the current financial year 2021-22 till 31st March 2022.

3. **Study the Efficacy of Virgin Coconut Oil in Preventing Oral Cancer in Patient with an Oral Premalignant Lesion- All India Institute of Medical Sciences, Bhubaneswar.**

PAC ratified the revalidation unspent balance of Rs.5,63,884/- to be utilized during the current financial year 2021-22till 31st March 2022 and permission has been given for utilization of the unspent balance of Rs.3,46,610/- under recurring head for manpower expenses subject to the conditionthat thetotal expenditure under various head in the final utilization certificate should be as per the amount sanctioned by the PAC.

IV. Reappropriation of Project cost

1. **Coconut neera sugar and its Glycemic Index (GI) and Glycemic Load (GL) studies - CSIR -National Institute for Interdisciplinary Science and Technology [NIIST] Thiruvananthapuram**

PAC ratified the reallocation of Rs.10,15,300/- within the approved budget.

2. **Transforming Coconut Waste into High Value Carbon dots and Development of Nanobased Technology for Disinfection of water - Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu**

PAC ratified the reappropriation of budget from TA (Rs. 60,796/-) to Man power (Rs. 24,022/-) and recurring head (Rs. 37,274/-) which is within the approved budget. PAC suggested to furnish the detailed breakup of the budget.

V Ratification

1. **M/s. Abhishek Agro Industries, Harisamudra Gate, Halkurke Road, Tiptur, Tumkur, Huliyar Road, Karnataka - 572201for the project "Setting up of a Desiccated Coconut Powder and Flakes manufacturing unit**

PAC **approved the project with an eligible subsidy of Rs.35.59 lakh.**

Other decisions of PAC

1. PAC suggested to insist the State Governments, Govt. institutions, research institutions, NGOs, other organizationsetc to submit the project as per the guidelines and cost norms of TMOC and MIDH.
2. PAC suggested that the Internal Screening Committee (ISC) should scrutinize projects strictly as per extant guidelines and cost norms and weed out the projects not confirming to scheme guidelines and cost norms, before placing the projects before the PAC.
3. PAC suggested to undertake preliminary inspection before release of subsidy for projects under adoption.

Date:23.03.2022 Chief Coconut Development Officer
Place :ErnakulamCoconut Development Board, Kochi

Annexure-I

A	**Project Approval Committee**
1	Shri. Rajbir Singh Panwar IFS Chairman, Coconut Development Board & Chairman PAC
2	Secretary Horticulture, Government of Karnataka **Represented by** Shri. K.Nagendra Prasad Director Department of Horticulture Govt. of Karnataka Shri. Prasad Joint Director of Horticulture Karnataka
3	Secretary Horticulture, Government of Kerala **Represented by** Shri Ali Asgar Pasha IAS Secretary for Agriculture Govt. of Kerala
3	Asst. Director General (Plantation Crops), ICAR **Represented by** Shri. Brajeesh Kumar Pandey Asst. Director General (Plantation Crops) ICAR, New Delhi
4	The Horticulture Commissioner Department of Agriculture & Cooperation KrishiBhavan, New Delhi-110 001 **Represented by** Dr. Naveen Patle Additional Commissioner (Hort.) DAC&FW,KrishiBhawan,New Delhi
5	Ministry of Food processing Industries **Represented by** Shri S. K. Verma Director Ministry of Food Processing Industries,**New Delhi**

6	Joint Advisor, Directorate of Marketing and Inspection **Represented by** Shri. PrasanthChakravarthy Asst. AgrlMkg Adviser Kakkanad, Kochi, Kerala
7	The Director Central Food Technological Research Institute,Mysore **Represented by** Dr. H. UmeshHebbar Chief Scientist CSIR- Central Food Technological Research Institute , Mysuru , Karnataka
8	Chief General Manager, Technical Service Dept., NABARD, Mumbai **Representative by:** Shri. K Subramaniyam Deputy General Manager NABARD, Trivandrum, Kerala
9	Chief General Manager, Indian Overseas Bank Bangalore **Represented by** Shri. Dhanasingh I Chief Regional Manager, Indian Overseas Bank Regional Office, Ernakulam, Kochi
10	Shri. Rajeev Bhushan Prasad Chief Coconut Development Officer Coconut Development Board, Kochi
B	**Co-opted Expert**
1	Shri. Venugopalan V V Senior Principal Scientist & Head Agroprocessing Technology Division CSIR NIIST Thiruvananthapuram
C	**Officials of CDB**
1	Shri. R. Madhu Secretary, CDB, Kochi
2	Smt. Deepthi Nair. S. Deputy Director, CDB, Kochi

3	Mr. Pramod. P. Kurian, Assistant Director, CDB, Kochi
4	Smt.JoycyChacko Finance Officer, CDB, Kochi
5	Smt.Renu P Viswam Statistical Officer i/c
6	Mrs. Vincy Varghese, Development Officer, CDB, Kochi
7	Smt. Geethu A.S. Food Processing Engineer (on contract, CDB, Kochi)
8	Kum. Surya Thankachan Food Processing Engineer (on contract, CDB, Kochi)

Proceedings of the 59th Meeting of
Project Approval Committee (PAC) of Technology Mission on Coconut
held at Kochi through videoconferencing on 12th September 2022

The 59th meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held through videoconferencing on 12th September 2022. Dr. Vijayalakshmi Nadendla, IAS Chief Executive Officer, Coconut Development Board and Chairman PAC presided over the meeting. At the outset the Dr. B. Hanumanthe Gowda, Chief Coconut Development Officer welcomed all the members of PAC. The agenda for the meeting were taken up by Smt. Deepthi Nair S, Deputy Director (Marketing).

The list of participants is enclosed as **Annexure-I.**

AGENDA No. 1: Confirmation of the Proceedings of 58thProject Approval Committee Meeting held on 21st March 2022

The Committee confirmed the proceedings of the 58th Project Approval Committee meeting held on 21st March 2022.

AGENDA No. 2: Action Taken Report on Decisions of the 58thPAC Meeting

The committee perused the action taken on decisions of the 58th meeting of Project Approval Committee. It has been informed that 11 (research) projects and 7 (adoption) projects has been sanctioned by the 58th PAC. First instalment for 8 research projects and 2 adoption projects has been released.

AGENDA No. 3: Approval of New Project Proposals:

1. **Development and field evaluation of biodegradable pheromone nano gels against major coleopteran pests of coconut – College of Agriculture, Vellayani, Kerala Agricultural University & Government Womens College, Trivandrum, Govt. of Kerala.**

The objectives of the project are as follows:-

1. Synthesis of the supramolecular polymer via inclusion complexation of β-Cyclodextrin and target molecules and fabrication of proposed hydrogel based pheromone.
2. To study the rheological properties and mechanical stability of gels
3. To study the volatility of pheromone immobilised hydrogels and that of ordinary pheromone by using GC-MS.
4. To assess the impact and efficacy of pheromone immobilised nanogels by conducting field trials

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 33.67 lakhs with project duration of 24 months as per the norms of TMOC. PAC opinioned that since ICAR- National Bureau of Agricultural Insect Resources (NBAIR), Bangalore has developed pheromone trap for the pests, suggestions from ICAR-NBAIR will help to make this study more fruitful.

2. Demonstration and creation of awareness for the integrated management of root wilt disease of coconut with microbial consortia in Tamil Nadu: A farmer participatory approach - Tamil Nadu Agricultural University (TNAU), Tamil Nadu.

The objectives of the project are as follows:-

1. To conduct large scale demonstrations (40 acres) for the integrated management of root wilt disease of coconut with microbial consortia in Tamil Nadu through farmers' participatory approach
2. To create awareness among the coconut farmers of Tamil Nadu for the integrated management of root wilt disease of coconut

The Project Approval Committee (PAC) discussed the proposal and approved the revised project with an eligible financial assistance limited to Rs. 25.00 lakhs with project duration of 24 months as per the norms of TMOC**.**

3. Nanotechnology interventions for process intensification for production of value added products from coconut - Indian Institute of Technology, Tirupati, Andhra Pradesh.

The objectives of the project are as follows:-

1. Developing nanotechnology based osmotic membrane process (OMD and FO) membranes for the selective removal of traces of oil from coconut whey facilitating subsequent recovery of proteins
2. Development of nanotechnology based membranes for removal of residual moisture from VCO
3. Developing nanotechnology based osmotic membrane process (OMD and FO) membranes for the cold sterilization of tender and mature coconut water
4. Sensory analysis and storage studies of the products will be carried out
5. Scale up, pilot plant studies and Technology Transfer

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 42.61 lakhs with project duration of 30 months as per the norms of TMOC**.** PAC opined that the nano membrane available in the market has low flux rate so the project may focus on industrial use.

4. Development of Pilot-Scale Electrospun Membrane-Based Nanofiltration Unit for Shelf-life Extension of Coconut Neera - National Institute of Food Technology, Entrepreneurship and Management - Thanjavur (NIFTEM - T), Tamilnadu

The objectives of the project are as follows:-

1. Fabrication and characterization of electrospun filtration membrane, and evaluation of membrane performance
2. Design and fabrication of pilot-scale nanofiber membrane-based filtration unit for neera
3. Evaluation of quality, microbial load, and shelf life extension of filtered neera obtained from the pilot-scale nano-filtration unit
4. Field trials and guidelines development for commercial usage.

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 24.83 lakhs with project duration of 24 months as per the norms of TMOC**.** PAC suggested to do cost benefit analysis and impact of the project to ensure the technology is benefited to the enterprising entrepreneurs.

5. Customised anti-fatigue products from coconut and by-products - CSIR-Central Food Technological Research Institute, Mysuru, Karnataka

The objectives of the project are as follows:-

1. To develop anti fatigue coconut based food products for energy sustenance.
2. To monitor the levels of bio-actives during storage.
3. Shelf life, sensory analysis and nutritional labeling of the developed product.
4. Behavioral studies on rat models.
5. Technology transfer and commercialization.

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 16.25 lakhs with project duration of 24 months as per the norms of TMOC**.**

6. Technology development for production of high value medium-chain triglycerides oil from coconut oil - CSIR-National Institute for Interdisciplinary Sciences and Technology (NIIST), Trivandrum

The objectives of the project are as follows:-

1. To develop a cost effective transesterification protocol for the production of methylated ester of fatty acids at mild processing conditions
2. Dry fractionation of the methylated ester of fatty acids to obtain short and medium chain fatty acid esters (C8 & C10)

3. Re-esterification of C8 and C10 fractionated fatty ester cuts with glycerol
4. Overall process optimization, refining and quality analysis of synthesized MCT oil to comply with regulations

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 28.49 lakhs with project duration of 24 months as per the norms of TMOC**.**

7. Value addition of coconut milk through in situ production of monolaurine and its evaluation as health promoting molecule - ICAR- National Institute of Animal Nutrition and Physiology (NIANP), Bangalore, Karnataka

The objectives of the project are as follows:-

1. Identification of plausible lipase-producing probiotic microorganisms from database
2. Validation and optimization of selected probiotics for lipase production
3. Production of monlaurin through fermentative action of selected probiotic
4. Evaluation of monolaurin as disease ameliorating and health promoting agents in *in vitro* and animal models

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 54.37 lakhs with project duration of 36 months as per the norms of TMOC**.**

8. Value added dietary formulation by the virtue of coconut milk exosomes and Sesamol: A novel Co-adjuvant therapeutic approach targeting breast cancer - CSIR-Central Food Technological Research Institute (CFTRI), Mysore, Karnataka

The objectives of the project are as follows:-

1. Isolation and characterization of coconut milk exosomes for their potential use as a compelling anticancer agent per se and as an innovative therapeutic carrier.
2. To fabricate coconut milk-derived exosomal formulation of sesamol and their characterization.
3. In vitro and in vivo analysis to understand the plausible mechanism of coconut exosome-mediated delivery of sesamol targeting cancer progression by the virtue of dual therapeutic nature of both coconut milk exosome and the cargo
4. Value-added dietary formulation of coconut milk-based yoghurt/milkshake enriched with coconut milk-derived exosomes loaded with sesamol and its storage and sensory evaluation.

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 26.73 lakhs with project duration of 36 months as per the norms of TMOC**.**

9. Techno economic feasibility of coconut sugar production using open pan evaporator and vacuum pan evaporator- ICAR-Central Plantation Crops Research Institute, Kasaragod (CPCRI), Kerala

The objectives of the project are as follows:-

1. To study the technical viability of coconut sugar production using modified open pan evaporator and vacuum pan evaporator
2. To standardize the processing parameters of sugar production by the two methods
3. To study the economic feasibility of coconut sugar production by the two methods
4. To develop the quality standards of coconut sugar and coconut sugar based functional food formulations

The Project Approval Committee (PAC) discussed the proposal and didn't consider the revised proposal since it was felt that there is no novelty in the project.

10. Development and Launching of tetra packed Neera in Kerala - M/s Palakkad Coconut Producers Company Ltd (PCPCL), Muthalamada, Palakkad, Kerala.

The objectives of the project are as follows:-

1. Product development: Neera and Neera blends with fruit juices in tetra packs
2. Evaluation of shelf life
3. Consumer acceptability tests of product

The Project Approval Committee (PAC) decided not to release financial assistance to M/s Palakkad Coconut Producers Company Ltd (PCPCL).

11. A comparative study of different drying methods to make desiccated coconut- National Institute of Food Technology, Entrepreneurship & Management (NIFTEM) – Thanjavur, Tamilnadu.

The objectives of the project are as follows:-

1. To study the effect of different drying methods like hot air, microwave and radio-frequency and low-temperature-low-humidity drying on physic-chemical, functional and structural properties of desiccated coconut.
2. To study the effect of different pretreatments on low-temperature-low-humidity drying of desiccated coconut.
3. To determine desiccated coconut's storage stability and quality characteristics under different storage conditions.
4. Optimization of process parameters for different drying methods for desiccated coconut.

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs.24.44 lakhs with project duration of 24

months as per the norms of TMOC**.** PAC suggested to work out the cost and to study the shelf life of the product developed using the method proposed.

12. Setting up of an incubation centre at CDB Institute of Technology (CIT), South Vazhakulam, Aluva, Kerala - CDB Institute of Technology, Aluva

The objectives of the project are as follows:-

1. To function as coconut processing technology demonstration centre for the benefit of prospective young entrepreneurs from all over India.
2. To create or enhance capacity of entrepreneurs in processing and value addition in Coconut.
3. To offer short-term hands-on training.
4. Realizing more income for the small and marginal farmers.
5. To empower the budding entrepreneurs and women self-help groups to start coconut-based enterprises.
6. To provide an atmosphere of a production centre of a commercial nature.
7. Generate additional income to CIT.

The Project Approval Committee (PAC) discussed the proposal and approved the project for a total project cost of Rs.40.29 lakhs with an eligible financial assistance of Rs. 24.97 lakhs with project duration of 18 months as per the norms of TMOC**.**

Desiccated Coconut Powder Unit

13. Setting up of a Desiccated Coconut Powder Manufacturing unit - M/s. Anuja Extrusion, Office: 1 Avudaipoigai Main Road, O Siruvayal, Karaikudi Taluk, Sivagangai Dist., Tamil Nadu, Factory: Y No. 161/11, Uyyakondan Siruvayal (S Akkotti Block), Karaikudi Tk, Sivangangai Dist., Tamil Nadu

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 5000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	15.00	15.00	3.75
ETP	2.95	2.95	0.73
Plant & Machinery	28.56	28.56	7.14
Electrification	4.13	1.68	0.42
Generator	5.04	5.00	1.25
Working Capital margin	2.28	-	-
TOTAL	**57.96**	**53.19**	**13.29**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.13.29 lakhs as per the norms of Technology Mission on Coconut.

14. Setting up of a Desiccated Coconut Powder Manufacturing unit - M/s. St. Antony's Sweets, 666/31, Cochin Corporation, Vaduthala, Cochin – 682023

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 5000 coconuts per day**.**

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	8.00	-	-
Plant & Machinery	11.87	10.75	2.68
Vessels SS	0.06	-	-
Electrification	0.30	0.30	0.07
Working Capital margin	1.48	-	-
Total	**21.71**	**11.05**	**2.76**

The Project Approval Committee (PAC) discussed the proposal and approved in principle for an eligible subsidy of Rs. 2.76 lakhs as per TMOC norms subject to physical verification of the unit.

15. Setting up of a Desiccated Coconut Powder Manufacturing unit - M/s. Anugraha Agro Processing, Sy No.152, Near KSRTC Bus Stand, Dharmasthala Village, Belthangadi Taluk, Dakshina Kannada District, Karnataka

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 30,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	65.63	45.00	11.25
Plant & Machinery	141.26	139.86	34.96
Generator	7.80	5.00	1.25
Electrification	29.21	7.24	1.81
ETP	23.12	10.00	2.50
Computer system with printer	1.98	-	-
Working Capital margin	25.00	-	-
TOTAL	**294.00**	**207.10**	**51.77 Limited to 50.00**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy limited to Rs. 50.00 lakhs as per the norms of Technology Mission on Coconut.

16. Setting up of a Desiccated Coconut Powder Manufacturing unit - M/s Sharavati Agrotech Pvt. Ltd. Sy. No.48, Mugwa, Kulkod, Honavar Tq, Karnataka - 581 334

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 25,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land & Land Dev.	Own	-	-
Building & Civil works	10.00	10.00	2.50
Plant & Equipments	83.00	67.11	16.78
Electrical installation	2.00	2.00	0.50
Preliminary & Pre op. expenses	2.00	0.69	0.17
Working Capital Margin	-	-	-
TOTAL	**97.00**	**79.80**	**19.95**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 19.95 lakhs as per the norms of Technology Mission on Coconut.

Coconut Oil Unit

17. Setting up of a Coconut Oil Manufacturing unit - M/s. Mankada Agricultural & General Marketing Co-operative Society Ltd. No. M – 462 Office: Makkaraparamba PO, Malappuram 676507 Factory: Pookod-perinchola, Pang south P O.

The objective of the project is setting up of a Coconut oil manufacturing unit with a capacity to process 15,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	32.00	27.51	6.87
Plant & Machinery	69.59	69.52	17.38
Transformer	14.88	3.47	0.87
Generator	4.80	4.80	1.20
Office Furniture & Computer System	1.47	-	-
Working Capital margin	6.13	-	-
TOTAL	**128.87**	**105.30**	**26.32**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 26.32 lakhs as per the norms of Technology Mission on Coconut.

Virgin Coconut Oil Unit

18. Setting up of a Virgin Coconut Oil manufacturing unit - M/s. Dream Rays Pvt. Ltd., Office: No.21 Shivalaya, Vijayanagar 2nd stage, B. M Road, Hassan, Karnataka – 573201

The objective of the project is setting up of a virgin coconut oil manufacturing unit with a capacity to process 5,000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land - Leased	-	-	-
Building (renovation)	12.39	-	-
Plant & Machinery	61.09	59.47	14.87
ETP	6.19	6.19	1.55
Generator	9.86	5.00	1.25
Electrification	5.55	3.22	0.80
Technical know how	0.72	-	-
Working Capital margin	3.33	-	-
TOTAL	**99.13**	**73.88**	**18.47**

The Project Approval Committee (PAC) discussed the proposal and approved PAC discussed the project and **approved for an eligible subsidy of Rs. 18.47 lakhs as per the norms of Technology Mission on Coconut.**

Neera Cold Room Unit

19. Setting up of a cold room for storing Neera - M/s. Global Coconut Farmers Producer Co. Ltd (GCFPCL), 39, Chettipalayam Road, Palladam-641664, Tamil Nadu

The objective of the project is setting up of a cold room for storing Neera with a capacity to process 1000 liters per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev. (Specify)	-	-	-
Building & Civil works	10.15	7.81	1.95
Plant & Equipments	43.80	43.80	10.95
SS Containers and rack	20.32	20.31	5.08

Reefer Van with body building	13.11	13.11	3.28
Generator set	8.67	5.00	1.25
Electrical installation	10.06	4.11	1.03
Working Capital margin	-	-	-
TOTAL	**106.11**	**94.14**	**23.54**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 23.54 lakhs as per the norms of Technology Mission on Coconut.

Coconut Shell Powder Manufacturing Unit

20. Expansion of existing coconut shell powder manufacturing unit - M/s. Vivan Industries, Office: No.913, GIDC Industrial Estate, Bavala, Ahmedabad-362220

The objective of the project is setting up coconut shell Powder manufacturing unit with processing capacity of 2 tons of coconut shells per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land - Leased	16.00	-	-
Building	22.98	20.68	5.17
Plant & Machinery	30.45	30.44	7.61
Electrification	3.32	1.52	0.38
Working Capital margin	1.25	-	-
TOTAL	**74.00**	**52.64**	**13.16**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 13.16 lakhs as per the norms of Technology Mission on Coconut.

Coconut Shell Charcoal Briquetting Unit

21. Expansion of the existing Coconut Shell Charcoal Briquetting Unit - M/s. Aditya hydro carbons, 597, 24th Main Road, Banashankari 2nd stage, Bangalore - 560070

The objective of the project is setting up Coconut Shell Charcoal Briquetting Unit with processing capacity of 15 tons of coconut shell charcoal powder per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	41.33	30.00	7.50
Plant & Machinery	81.77	81.77	20.44
Working Capital Margin	6.04	-	-
TOTAL	**129.14**	**111.77**	**27.94**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 27.94 lakhs as per the norms of Technology Mission on Coconut.

Integrated Unit for Coconut Products

22. Expansion of an Integrated Unit for Coconut Products such as Nata-de-coco and Nata drink - M/s Nata Nutrico Coconut Food Products LLP, Office – KA 582 A1, Zims, Manikkakavu Road, C/o: Deepika Nivas, Kannukkara, Kannur - 670012, Kerala

The objective of the project is setting up **integrated unit for coconut products** to process 2000 litres of coconut water per day for Nata-de-coco & Nata Drink.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Lease	-	-
Building & Civil works	45.00	45.00	11.25
Plant & Equipments	63.95	63.92	15.98
ETP	4.50	4.50	1.12
Water Purification Plant (Reverse Osmosis)	2.00	2.00	0.50
Laboratory Equipments	11.48	10.06	2.51
Electrification	7.59	3.19	0.80
Working Capital margin	6.93	-	-
TOTAL	**141.45**	**128.67**	**32.16**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 32.16 lakhs as per the norms of Technology Mission on Coconut.

23. Setting up of an integrated coconut processing unit for the production of Desiccated Coconut Powder & Virgin Coconut Oil - M/s. Premier Coco Products, Office: 66, First Street, Sivandandha Colony, Coimbatore - 641 012

The objective of the project is setting up Desiccated Coconut Powder & Virgin Coconut Oil to process 10,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	29.00	29.00	7.25
ETP	2.40	2.40	0.60
Plant & Machinery	44.40	44.40	11.10
Electrification	3.25	2.47	0.62
Generator	6.35	5.00	1.25
Technical knowhow	0.65	-	-
TOTAL	**86.05**	**83.27**	**20.82**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 20.82 lakhs as per the norms of Technology Mission on Coconut.

24. Setting Up of a Ball Copra Making Unit - Shri. Dangeti Dharma Satish, S/o Narayana Murthy, Door No.1-263/1, Gantipedapudi Village, P. Gannavaram mandal, East Godavari District, Andra Pradesh-533274

The objective of the project is setting up of a ball copra making unit to process 25 lakhs coconuts per year.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	60.00	17.10	4.27
Working Capital Margin	-	-	-
TOTAL	**60.00**	**17.10**	**4.27**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs. 4.27 lakhs as per the norms of Technology Mission on Coconut.

Other Item

25. The project for "Expansion, Modernisation & Automation of the existing Desiccated Coconut Unit" by M/s Krishna Agro Industries, 1/266, 1/267, Asodu, Koteshwara, Kundapura Taluk, Udupi District, Karnataka 576222.

The objective of the project is Expansion, Modernisation & Automation of the existing Desiccated Coconut Unit with a capacity to process 25,000 coconuts per day.

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	30.50	28.92	7.23
Plant & Machinery	49.28	41.99	10.50
ETP	23.60	10.00	2.50
RO water plant	2.77	2.77	0.69
Electrification	5.41	2.35	0.59
Generator	6.35	5.00	1.25
Preliminary & Pre op. expenses	2.09	0.91	0.23
Working Capital Margin	5.00	-	-
TOTAL	**125.00**	**91.94**	**22.99**

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible subsidy of Rs.22.99 lakhs as per the norms of Technology Mission on Coconut.

General Discussions of PAC

- PAC suggested that instead of assisting multiple projects to multiple institutes on Neera, a consolidated system need to be designed for projects assisted/assisting on Neera so that a standardized technology is developed for the processing and preservation of Neera.

Date:20.09.2022
Place :Ernakulam

Chief Coconut Development Officer
Coconut Development Board, Kochi

Annexure-I

A	**Project Approval Committee**
1	Dr. N Vijayalakshmi Nadendla, IAS Chief Executive Officer, Coconut Development Board & Chairman PAC
2	Secretary Horticulture, Government of Karnataka **<u>Represented by</u>** Shri. Rajender Kumar Kataria, IAS Principal Secretary, Secretary to Govt., Directorate of Horticulture Govt. of Karnataka Dr. Kadire Gowda Joint Director of Horticulture Directorate of Horticulture Govt. of Karnataka
3	Secretary Horticulture, Government of Kerala **<u>Represented by</u>** Shri. T. V. Subhash IAS Director Directorate of Agriculture Govt. of Kerala
4	Asst. Director General (Plantation Crops), ICAR **<u>Represented by</u>** Dr. Vikramaditya Pandey Asst. Director General (Plantation Crops) ICAR, New Delhi
5	The Horticulture Commissioner Department of Agriculture & Cooperation KrishiBhavan, New Delhi-110 001 **<u>Represented by</u>** Shri. Dinesh Undersecretary Horticulture DAC&FW, KrishiBhawan, New Delhi
6	Ministry of Food processing Industries **<u>Represented by</u>** Shri Pankaj Kumar Director Ministry of Food Processing Industries, New Delhi

7	Joint Advisor, Directorate of Marketing and Inspection **<u>Represented by</u>** Shri. Anil Kumar R Asst. Agricultural Marketing Adviser Kakkanad, Kochi, Kerala
8	The Director Central Food Technological Research Institute, Mysore **<u>Represented by</u>** Dr. Navin Kumar Rastogi Chief Scientist CSIR-CFTRI
9	Chief General Manager, Technical Service Dept., NABARD, Mumbai **Representative by:** Shri. K Subramaniyam Deputy General Manager NABARD, Trivandrum, Kerala
10	Chief General Manager, Indian Overseas Bank Bangalore **<u>Represented by</u>** Shri. I Dhanasingh, Chief Manager Indian Overseas Bank Regional Office, Ernakulam, Kochi
11	Shri. B Hanumanthe Gowda Chief Coconut Development Officer Coconut Development Board, Kochi
B	**Co-opted Expert**
1	**Dr. M. Loganathan** Director i/c National Institute of Food Technology, Entrepreneurship and Management – Thanjavur (NIFTEM-T), Tamilnadu
C	**Officials of CDB**
1	Shri. R. Madhu Secretary, CDB, Kochi
2	Shri. Hemachandra Director
3	Smt. Deepthi Nair. S. Deputy Director, CDB, Kochi
4	Shri. Pramod. P. Kurian, Assistant Director, CDB, Kochi

5	Shri. K.S .Sebastian Assistant Director, CDB, Kochi
6	Smt. Resmi D S Deputy Director i/c, CIT, Aluva
7	Smt. Joycy Chacko Finance Officer i/c, CDB, Kochi
8	Smt. Renu P Viswam Statistical Officer i/c
9	Smt. Vincy Varghese, Development Officer, CDB, Kochi
10	Smt. Aneeta Joy Trainer, CIT, Aluva (on contract, CIT, Aluva)
11	Shri. Vishnu Eswaran Food Processing Engineer (on contract, CIT, Aluva)
12	Smt. Geethu A.S. Food Processing Engineer (on contract, CDB, Kochi)
13	Kum. Surya Thankachan Food Processing Engineer (on contract, CDB, Kochi)

Proceedings of the 60th Meeting of Project Approval Committee (PAC) of Technology Mission on Coconut held at Kochi through video conferencing on 24th March 2023

The 60th meeting of the Project Approval Committee (PAC) on Technology Mission on Coconut was held through video conferencing on 24th March 2023. Dr. Vijayalakshmi Nadendla, IAS Chief Executive Officer, Coconut Development Board and Chairperson PAC presided over the meeting. At the outset Dr. B. Hanumanthe Gowda, Chief Coconut Development Officer welcomed all the members of PAC. The agenda for the meeting was presented by Smt. Deepthi Nair S, Director (Marketing), Coconut Development Board.

The list of participants is enclosed as ***Annexure-I***.

AGENDA No. 1: Confirmation of the Proceedings of 59thProject Approval Committee Meeting held on 12th September 2022

The Committee confirmed the proceedings of the 59th Project Approval Committee meeting held on 12th September 2022.

AGENDA No. II: Action Taken Report on Decisions of the 59thPAC Meeting

The committee perused the action taken on decisions of the 59th meeting of Project Approval Committee. In the 59th PAC, 10 (research) projects and 12 (adoption) projects were sanctioned. First instalment for 9 research projects and 10 adoption projects has been released.

AGENDA No. III: Approval of New Project Proposals:

1. Extension of shelf life and retention of freshness and natural taste of tender coconut water using hybrid technique: high pressure processing (HPP)+ pulsed electric field (PEF) treatment - National Institute of Food Technology, Entrepreneurship & Management (NIFTEM)Thanjavur

The objectives of the project are as follows:-

1. To conduct nutritional evaluation of tender coconut from different varieties.
2. To treat the collected samples using high pressure processing and pulsed electric filed technique individually and in hybrid mode and analyse the quality compared to thermal treatments.
3. To conduct shelf-life studies on non-thermally treated coconut water samples and also to analyse the commercial viability of the developed technology.

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 19.82 lakhs for a project duration of 24 months as per the norms of TMOC. It was suggested to focus on Tender Coconut Water.

2. Hydrodynamic cavitation assisted fractionation of coconut waste shell to MCC and its conversion to LGO - CSIR- Indian Institute of Chemical Technology, Hyderabad, Telangana and CSIR-National Institute for Interdisciplinary Science & Technology, Thiruvananthapuram, Kerala

The objectives of the project are as follows:-

1. Pre-treatment of coconut husk biomass for the delignification using the Hydrodynamic cavitation technique for the preparation of microcrystalline cellulose (MCC).
2. A green solvent-assisted pyrolysis of MCC for the production of high-value-added compound levoglucosenone (LGO)/furfural.
3. Engineering data collection for Pilot Plant Design for processing of 10 kg/batch of coconut husk.
4. Process intensification via integration of the waste resource recovery and utilization of by-products (hemicelluloses and lignin).

The Project Approval Committee (PAC) discussed the proposal and approved project in principle. It was suggested to reduce the total project cost.

3. Preclinical evaluation of the effects of coconut vinegar on gut health - CSIR-National Institute for Interdisciplinary Sciences and Technology, Trivandrum. Kerala

The objectives of the project are as follows:-

1. Preclinical evaluation of the effects of coconut vinegar on gut health and prevention of gut leakage.
2. Evaluation of its effects on microbiome dynamics.
3. Effects of coconut vinegar on biomarkers associated with Gastroesophageal reflux disease (GERD).

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 28.41 lakhs with project duration of 18 months as per the norms of TMOC

4. Development of advanced portable Neera-freezer (Nefreezer) - JKKM Group of Institutions, Erode, Tamil Nadu

The objectives of the project are as follows:-

1. Develop a low-cost portable refrigerator for collection of NEERA
    a. Design the containment chamber
    b. Design Power supply
    c. Study Mechanical Compressor Vs Semiconductor cooling

2. Integrate various sensors into the NeFreezer a. Ultrasonic sensor (depth measurement) for volume estimation
    a. Temperature sensor
    b. LED light and Webcam for monitoring
    c. Wireless communication module for remote operation
3. Integrate various electrical implements into the Nefreezer a. Solenoid valve
    a. Fans
    b. 12V dc power supply to run the freezer
    DC relays to turn on/off the fan.

The Project Approval Committee (PAC) discussed the proposal and decided not to approve the proposal considering low practicality, adaptability and cost effectiveness of the project.

5. Therapeutic management of diabetes by dietary intervention with virgin coconut oil - NIMS Centre for Genomic Medicine, Noorul Islam Institute of Medical Science and Research Foundation Trivandrum, Kerala

The objectives of the project are as follows:-

1. Effects of VCO diet on metabolic profiles of patients with diabetes will be identified.
2. VCO-mediated alterations of dysregulated immune responses in patients with diabetes will be analyzed.
3. Mechanisms through which VCO mediate these alterations in biochemical parameters will be examined at cellular and molecular levels.

The Project Approval Committee (PAC) discussed the proposal and decided not to approve the proposal.

6. Design, fabrication and field demonstration of a portable electrical in-situ 'Cocosap concentrator' for the production of coconut sugar - ICAR-Central Plantation Crops Research Institute, Kasargod.

The objectives of the project are as follows:-

1. To optimize the relation between heating temperature vs. sap concentration.
2. To design a temperature gradient heating element to attain desired sap concentration.
3. To design the electric power interface with algorithm for time and temperature control.
4. To develop the electric power interface with all the essential safety standards.
5. To fabricate the concentrator with appropriate thermal insulation for eco-friendly operation.
6. To evaluate the performance of the concentrator under field condition.

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 27.00 lakhs with project duration of 24 months as per the norms of TMOC.

7. Training and demonstration on utilization of waste green coconut into energy rich and clean solid biofuel (bio coal) among rural people in Puri district of Odisha - Socio Cultural Development Centre (SCDC), Odisha

The objectives of the project are as follows:-

1. Development and fabrication of small capacity (30-40 kg input material charring drum for preparing char from waste green coconut
2. Preparation of briquette from the char (bio-coal) by following biomass carbonization process
3. To demonstrate and popularize bio-coal among rural people as a domestic cooking fuel

The Project Approval Committee (PAC) discussed the proposal and approved the project with a total project cost of Rs.20.83 lakhs for a project duration of 12 months. The eligible financial assistance is limited to Rs.10.00 lakhs being the 50% of the Board's share as per the norms of TMOC. Success story of this project should be video documented and list of beneficiaries should be furnished.

8. In situ structure for recording real time observation on coconut crown - ICAR- CPCRI Kasaragod / AICRP on Palms centre in Karnataka, Tamil Nadu, Andhra Pradesh and Bihar

The objectives of the project are as follows:

1. To study the impacts of climate change on leaf emergence, inflorescence development and sex differentiation.
2. To study floral phenology, during pollination, and fertilization under different temperature regimes.
3. To collect dataset on internal and external properties (color, shape, size, shaking sound) of coconut to develop gadget for maturity detection.
4. To collect real time data on sequence of events on the coconut crown upon infection of pests and diseases to develop sensors algorithms for UAVs.
5. To study the genotypic and nutrient interaction in alleviating climate stress.

The Project Approval Committee (PAC) discussed the proposal and approved the project with an eligible financial assistance of Rs. 50.50 lakhs excluding the institutional charge for project duration of 36 months as per the norms of TMOC.

Virgin Coconut Oil Unit

9. Setting up of a Virgin Coconut Oil Manufacturing unit -M/s. U.P. Exports, Sy.No: 137, Halkurike Amruthamahal Kaval, Honnavally Hobli, Tiptur Taluk,Tumakuru, Karnataka - 572201

The objectives of the project is setting up of a virgin coconut oil manufacturing unit with a capacity to process 5000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land- Leased	Own	-	-
Building & civil works	87.45	36.00	9.00
Plant and Machinery	51.26	51.26	12.81
Effluent Treatment Plant	6.76	3.83	0.96
Electrification	3.84	2.81	0.70
Technology Transfer	0.70	-	-
Generator	6.30	5.00	1.25
Interest during Implementation	6.00	-	-
Preliminary & Pre op. expenses	3.42	0.99	0.25
TOTAL	**165.73**	**99.89**	**24.97**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.24.97 lakhs as per the norms of Technology Mission on Coconut.

10. Setting up of a Virgin Coconut Oil Manufacturing unit - M/s. Solo Farms, Office : Devi Kripa, 3N, Chandragandhi Nagar, 5th Street, Gowripalayam PO, Coimbatore - 641028

The objectives of the project is setting up of a virgin coconut oil manufacturing unit with a capacity to process 5000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
			(Rs. in lakh)
Land	Own	-	-
Building - Renovation	5.50	5.50	1.38
Effluent Treatment Plant	5.02	5.02	1.25
Plant & Machinery	84.04	83.45	20.86
Technology Transfer for VCO	0.60	-	-
Working capital margin	8.35	-	-
TOTAL	**103.51**	**93.97**	**23.49**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.23.49 lakhs as per the norms of Technology Mission on Coconut.

11. Setting up of a Virgin Coconut Oil & Vinegar unit - M/s. Guru Raghavendra Coconut Industries Y.T. Road, Saraswathanagara, Goragondanahalli, Tiptur, Tumkur - 572 201, Karnataka

The objectives of the project is setting up of a VCO & Vinegar unit with a capacity to process 5,000 coconuts per day and 400 litres of coconut water per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	44.00	44.00	11.00
Plant & Machinery	70.56	70.56	17.64
ETP	19.44	10.00	2.50
Miscellaneous Assets	3.00	-	-
Technical know-how	0.80	-	-
Preliminary & Pre op. expenses	1.00	1.24	0.31
Working Capital margin	12.00	-	-
TOTAL	**150.80**	**125.80**	**31.45**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.31.45 lakhs as per the norms of Technology Mission on Coconut.

Desiccated Coconut Powder Unit

12. Expansion of the existing Desiccated Coconut Powder unit – M/s. Sri Guru Coconut Industry, Halkurke, Road, Geddalehalli, Tiptur, Tumkur District, Karnataka – 572202

The objectives of the project are expansion of the existing DCP unit with a capacity to process 25000 to 30000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	31.00	9.35	2.34
Plant & Machinery	19.50	8.07	2.01
Working Capital margin	6.50	-	-
TOTAL	**57.00**	**17.42**	**4.35**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.4.35 lakhs as per the norms of Technology Mission on Coconut.

13. Setting up of a Desiccated Coconut Powder manufacturing unit-M/s.Mithra Sabithara Coco Products. Sy.No: 755, Karuppudevanpatty Village, Thirumalapuram Panchayath, Kunnoor Post, Pin-625512 Andipatti Taluk, Theni District , Tamilnadu

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 20000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	44.50	30.00	7.50
Water Purification Plant	18.99	18.99	4.74
Plant and Machinery	145.69	145.68	36.42
Effluent Treatment Plant	28.13	10.00	2.50
Electrification	11.01	7.53	1.88
Generator	5.44	5.00	1.25
TOTAL	**253.76**	**217.20**	**54.30 Limited to 50.00**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.50.00 lakhs as per the norms of Technology Mission on Coconut.

14. Setting up of a Desiccated Coconut Powder Manufacturing unit - M/s. S.P.Agro Industries, SNo. 158/1, Gaddebuvanahalli Village, Kasaba Hobli, Nagamangala Taluk, Mandya District - 571432

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 20 Tones per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev.(Specify)	Own	-	-
Plant & Equipments	151.30	134.50	33.62
Building & Civil works	98.00	83.00	20.75
Electrical installation	9.00	4.65	1.16
Contingencies	2.71	-	-

(others Fixed Assets)	13.64	-	-
Working Capital margin	15.00	-	-
Interest during implementation	9.92	-	-
TOTAL	**299.57**	**222.15**	**55.53 Limited to 50.00**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.50.00 lakhs as per the norms of Technology Mission on Coconut.

15. Setting up of Desiccated Coconut Powder unit - M/s Manyashree Agro Tech, Sy.No.84/2 & 85/2, Near Meesethimanahalli, Tiptur Taluk,Tumkur Dist, Karnataka - 572201

The objective of the project is setting up of a Desiccated Coconut Powder unit with a capacity to process 23000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Building & Civil work	70.00	53.00	13.25
Plant & Equipments (including generator)	106.40	104.03	26.01
Electrification	7.50	5.20	1.30
ETP	10.00	10.00	2.50
Pre- operative expenses	2.00	1.72	0.43
Working capital margin	17.00	-	-
TOTAL	**212.90**	**173.95**	**43.49**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.43.49 lakhs as per the norms of Technology Mission on Coconut.

16. Setting up of a Desiccated Coconut Powder Manufacturing unit –M/s. Mahadeva Agro Industry, Haleplaya, Halepalya Post, Tiptur Dist, Karnataka-572201

The objective of the project is setting up of a Desiccated Coconut unit with a capacity to process 30000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
			(Rs. in lakh)
Land and Land	2.00	-	-

Dev.(Specify)			
Building & Civil work	93.00	83.00	20.75
Plant & Equipments (including generator)	96.45	94.71	23.68
ETP	12.98	10.00	2.50
Electrification	7.00	4.73	1.18
Pre- operative expenses	1.00	1.00	0.25
Working capital margin	35.00	-	-
TOTAL	**247.43**	**193.44**	**48.36**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.48.36 lakhs as per the norms of Technology Mission on Coconut

Coconut Oil Unit

17. Setting up of a Coconut Oil unit - M/s. MRL Kuttanadan Coconut Oil, Kalathil House, Punnamada, Avalukunnu PO, Alappuzha, Kerala -688006

The objective of the project is setting up of a coconut oil unit with a capacity to process 8 Tones of Copra per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building & Civil works	46.00	26.29	6.57
Plant & Machinery (including generator)	142.59	127.91	31.98
Electrification (including transformer)	26.80	6.39	1.59
Lab Equipments	2.92	2.92	0.73
License fee	2.30	-	-
Other assets	6.66	-	-
Pre & Pre op expenses	3.00	1.63	0.41
Working Capital margin	27.12	-	-
TOTAL	**257.39**	**165.14**	**41.28**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.41.28 lakhs as per the norms of Technology Mission on Coconut

18. Setting up of a Coconut Oil Manufacturing unit - M/s. Gramalakshmi Marketing Producer Company Limited, Udayapuram PO, Kodothe, Anadashrem, Kasaragod District, Kerala - 671531

The objective of the project is setting up of a Virgin Coconut oil unit with a capacity to process 6000 coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev.(Specify)	14.00	-	-
Plant & Equipments	29.40	29.40	7.35
Building & Civil works	43.11	24.69	6.17
Electrical installation	6.04	1.72	0.43
Pre-operative Expenses	3.00	0.62	0.15
(others) DG Set	5.00	5.00	1.25
Working capital Margin	8.12	-	-
ETP	1.75	1.75	0.44
Others Misc. Assets	1.50	-	-
TOTAL	**111.92**	**63.18**	**15.79**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.15.79 lakhs as per the norms of Technology Mission on Coconut.

19. Setting up of a Coconut Oil processing unit - M/s. Kannur Industrial Development Pvt. Ltd., Chakkarakkal, Mowanchery P.O., Kannur - 670613

The objective of the project is setting up of a coconut oil processing unit with a capacity to process 5 MT coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
			(Rs. in lakh)
Land and Land Dev. (Specify)	-	-	-
Building	18.05	18.05	4.51
Machinery &Equipments	31.96	31.96	7.99
Electrical works	3.84	1.69	0.42
Furniture, Office Equipment & other fixed assests	7.90	-	-

Transformer & generator 35 KVA	5.50	1.83	0.46
Vehicle	9.40	-	-
Firefighting & Pre-operative Expenses	1.27	-	-
Pre & Pre- operative expenses	3.00	0.53	0.13
Working capital margin	26.08	-	-
TOTAL	**107.00**	**54.06**	**13.51**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.13.51 lakhs as per the norms of Technology Mission on Coconut.

20. Setting up of a Coconut Oil & VCO Processing unit - M/s. Eramala Service Co - operative Bank Ltd. No. 1044 Orkatteri, Vadakara, Kozhikode, Kerala Pin: 673501

The objective of the project is setting up of a Coconut Oil & VCO Processing unit to process Coconut Oil : 20 MT coconuts/day and Virgin Coconut Oil : 2 MT coconuts/day

Components	**Total Project Cost**	**Eligible Project Cost**	**Maximum Eligible Subsidy**
			(Rs. in lakh)
Land Cost	Own	-	-
Copra dryer chamber & other technical civil works.	29.21	160.33	40.08
Machinery &Equipments	131.12		
Effluent Treatment Plant	7.00	7.00	1.75
Electrification	19.78	8.03	2.01
DG Set	7.00	5.00	1.25
Transformer	5.90	-	-
Preliminary & Pre-operative expenses	3.00	1.80	0.45
Working capital margin	29.19	-	-
TOTAL	**232.20**	**182.16**	**45.54**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.45.54 lakhs as per the norms of Technology Mission on Coconut.

Tender Coconut Water

21. Expansion of the existing TCW packing unit – M/s. Sakthi Coco Products, Unit No.9, Sakthi Industrial Estate, Udumalpet Road, Pollachi Pin: 642003, TN, India

The objective of the project is Expansion of the existing TCW packing unit to process 20000 bottles per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land & Land Dev.	Lease		
Building & Civil works	-	-	-
Plant & Equipments	170.00	146.20	36.55
Electrical installation	9.00	7.31	1.82
Working Capital margin	1.00	-	-
TOTAL	**180.00**	**153.51**	**38.37**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.38.37 lakhs as per the norms of Technology Mission on Coconut.

22. Setting up of a unit for packing & preservation of Tender Coconut Water - M/s. Aadhil Food Pvt. Ltd., Reg. Office: Plot No.91, Meenakshi Sundareshwar Nagar, Thoppampatti PO, Pollachi – 642120, Coimbatore, Tamil Nadu

The objective of the project is Setting up of a unit for packing & preservation of Tender Coconut Water to process 15000 tender coconuts per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
			(Rs. in lakh)
Land	Leased		
Building & Civil works	93.48	62.00	15.50
ETP	9.21	9.21	2.30
Plant & Machinery	169.71	113.87	28.47
Electrification	7.44	5.94	1.49
Generator	5.85	5.00	1.25
Technical know how	4.00	4.00	1.00
Preliminary & Pre-op expenses	6.81	1.94	0.48
Working Capital margin	30.00	-	-
TOTAL	**326.50**	**202.02**	**50.50 Limited to 50.00**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.50.00 lakhs as per the norms of Technology Mission on Coconut.

Integrated coconut processing unit

23. Setting up of an integrated coconut processing unit for the production of Desiccated Coconut, Virgin Coconut Oil, Coconut Milk and Coconut Chips - M/s. Malabar Coconut Products Kozhummal Road, Peralam, Kozhummal, P O - 670521, via Karivallur, Payyannur, Kannur

The objective of the project is setting up of an integrated coconut processing unit for the production of Desiccated Coconut, Virgin Coconut Oil, Coconut Milk And Coconut Chips to process 15600 coconuts per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		
Land	Leased	-	-
Building	45.62	28.02	7.00
Plant & Machinery (including generator)	106.90	106.90	26.72
Effluent Treatment Plant(ETP)	5.00	5.00	1.25
Solar Panelling for Power Generation	7.72	-	-
Electrification	9.03	5.34	1.34
Technical know-how	0.60	-	-
Furniture, Office equipments, computer system & printer etc.	1.13	-	-
Working Capital margin	10.00	-	-
TOTAL	**186.00**	**145.26**	**36.31**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.36.31 lakhs as per the norms of Technology Mission on Coconut.

Coconut Shell Powder unit

24. Setting up of a Coconut Shell Powdering unit - M/s. Karumalaiyan Agro Industries, 82/4, Kommakovil Perundurai R.S (post), Erode District,Tamil Nadu-638052

The objective of the project is setting up of a coconut shell powdering unit to process 20 Tons of shell per day

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in lakh)		

Land	Own	-	-
Building & Civil works	50.00	5.50	1.38
Plant & Machinery	168.77	168.77	42.19
Electrification	4.17	4.17	1.04
(Others) Computer	1.01	-	-
Weigh Bridge	12.07	-	-
Working Capital margin	10.00	-	-
TOTAL	**246.02**	**178.44**	**44.61**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.44.61 lakhs as per the norms of Technology Mission on Coconut.

Coconut Wood Briquetting unit

25. Setting up of a Coconut Wood Briquetting unit - M/s. Surya Agro Fuels, 1/265-1 Bharathi Nagar, Uthumalai main Road, North Kavalakurichi, Rukkumaniammalpuram PO, Tirunelveli Dist., TN-627860

The objective of the project is Setting up of a Coconut Wood Briquetting unit to process 15 tons of coconut wood per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy
	(Rs. in Lakh)		
Land	Own	-	-
Building & Civil works	32.26	13.79	3.45
Plant & Machinery	56.44	56.44	14.11
Electrification	6.97	2.82	0.70
Working Capital margin	3.33	-	-
TOTAL	**99.00**	**73.05**	**18.26**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.18.26 lakhs as per the norms of Technology Mission on Coconut.

Ball Copra Unit

26. Setting up of a Ball Copra making unit - Smt. Namana Durga Lakshmi, Sy no. 146/4A, 146/3B, Bodasakurru Village & Grama Panchayath, Allavaram Mandal, East Godavari Dist., AP

The objective of the project is setting up of a Ball Copra making unit to process 10.50 lakh coconuts per day.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy

	(Rs. in lakh)		
Land	Own	-	-
Building & Civil works	52.65	36.75	9.19
Working Capital margin	-	-	-
TOTAL	**52.65**	**36.75**	**9.19**

The Project Approval Committee (PAC) discussed the proposal and approved for an eligible subsidy of Rs.9.19 lakhs as per the norms of Technology Mission on Coconut.

Other Items

Sub: Enhance of the building cost for Shri. Dangeti Dharma Satish, Andhra Pradesh for the project "Setting up of a Ball Copra making unit"

The objective of the project is setting up of a Ball Copra making unit with a capacity to process 25 lakhs coconuts per year.

Components	Total Project Cost	Eligible Project Cost	Maximum Eligible Subsidy sanctioned by 59th PAC	Proposed Maximum eligible subsidy
	(Rs. in lakh)			
Land	Own	-	-	-
Building & Civil works	60.00	51.30	4.27	12.82
Working Capital Margin	-	-	-	-
TOTAL	**60.00**	**51.30**	**4.27**	**12.82**

The Project Approval Committee (PAC) discussed the proposal and approved for revision of eligible subsidy to Rs.12.82 lakhs as per the norms of Technology Mission on Coconut.

AGENDA NO: IV Deferred project by Internal Screening Committee (ISC)

The Project Approval Committee (PAC) discussed the following projects deferred by Internal Screening Committee

Sl No	Name of the Project	Implementing Agency
1	Coconut based formulation for the post covid effect / immune boosting	Central Food Technological Research Institute, Mysore
2	Centre for coconut business incubation	Indian Institute of Plantation Management (IIPM), Bengaluru
3	Green synthesis of nano particles	Calicut University, Malappuram,

	illustrates a new way of approach toprevent mites infestation in coconuttrees revealed through geospatial and diversity analysis	Kerala
4	Value addition of mature coconut water through microbial valorization for augmenting coconut value chain	ICAR - Central Plantation Crops Research Institute (CPCRI), Regional Station, Kayamkulam, Kerala
5	Identification of coconut varieties suitable for coconut inflorescence sap production and popularization among farmers	ICAR- Central Plantation Crops Research Institute (CPCRI), Kasargod, Kerala
6	A novel application of cellulose aerogel composites from coconut fibres (CF) as rooting media for crops	Tamil Nadu Agriculture University (TNAU), Coimbatore, Tamil Nadu
7	Spent coconut meal from Virgin coconut oil industries: Circular economic approach by scientific validation of the health benefits and development of value added/ functional food products	CSIR – National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram, Kerala
8	Diagnostics, epidemiology, farmer participatory surveillance and management of lethal wilt disease of coconut	ICAR -CPCRI, Regional Station, Kayamkulam
9	Developing a nanoformulation carrying bioactive compounds derived from entomopathogenic nematode gut bacteria for the management of major pests of coconut	TNAU - Tamilnadu Agricultural University, Coimbatore
10	Supply of Rocker Sprayer- Management of Rugose Spiralling Whitefly in coconut	Department of Agriculture, Tamilnadu
11	Proposal for new initiatives proposed for 2023-24 by Director of Agriculture (OPC), Govt. of Tamil Nadu	Department of Agriculture, Directorate of Agriculture, Tamil Nadu
12	Developing Integrated Crop and Pest Management Methods for the management of invasive whiteflies in coconut	TNAU - Tamilnadu Agricultural University, Coimbatore

The Project Approval Committee approved the decision of Internal Screening Committee to defer the above projects.

AGENDA NO: V. Revision of cost norm for the machinery required for the major coconut processing units supported under the Technology Mission on Coconut (TMOC) scheme

The committee discussed and approved the revised cost norm for building, civil work, building area, ETP, electrification, DG set, transformer, solar energy system, fire control system etc for the major coconut processing units supported under the Technology Mission on Coconut (TMOC) scheme. Chairman of PAC directed to undertake consultation with CPWD for items in which CPWD cost norm was not taken.

PAC meeting concluded with vote of thanks by the Chief Coconut Development Officer.

Date: 24.03.2023
Place: Ernakulam

Chief Coconut Development Officer
Coconut Development Board, Kochi

Annexure-I

A	**Project Approval Committee**
1	Dr. N Vijayalakshmi Nadendla, IAS Chief Executive Officer, Coconut Development Board & Chairman PAC
2	Secretary Horticulture, Government of Karnataka **Represented by** **Shri.Kadire Gowda** Joint Director of Horticulture Government of Karnataka
3	Secretary Horticulture, Government of Kerala **Represented by** **Shri.Anju K.S., *IAS*** Director Dept of Agriculture Government of Kerala
4	Asst. Director General (Plantation Crops), ICAR **Represented by** **Dr.K.B.Hebbar** Director CPCRI, Kasargodu
5	**Dr. Prabhat Kumar** The Horticulture Commissioner Department of Agriculture & Cooperation KrishiBhavan, New Delhi-110 001
6	Ministry of Food processing Industries **Represented by** **Shri Dr. M. Loganathan**, Director(i/c) NIFTEM-T
7	Joint Advisor, Directorate of Marketing and Inspection **Represented by** **Shri B. K. Tiwari** In -charge Joint Agricultural Marketing Adviser and in-charge of QC division Directorate of Marketing & Inspection, Faridabad
8	The Director Central Food Technological Research Institute, Mysore **Represented by** **Dr. SureshKumar,** Principal Scientist, CSIR-CFTRI

9	Chief General Manager, Technical Service Dept., NABARD, Mumbai **Representative by:** **Smt. Minu Anwar** Assistant Deputy General Manager, NABARD, Trivandrum, Kerala
10	Chief General Manager, Indian Overseas Bank Bangalore **Represented by** **Shri.Dhanasigh I** Chief Manager, Overseas Bank Regional Office, Ernakulam, Kochi
11	**Dr. B Hanumanthe Gowda** Chief Coconut Development Officer Coconut Development Board, Kochi
B	**Officials of CDB**
1	Shri. R. Madhu Secretary, CDB, Kochi
2	Smt. Deepthi Nair. S. Director(Marketing), CDB, Kochi
3	Shri. Pramod. P. Kurian, Deputy Director(Development),CDB, Kochi
4	Shri. K.S .Sebastian Deputy Director(Marketing),CDB, Kochi
5	Smt.Jayashree A Assistant Director (Development) CDB, Kochi
6	Smt.Leenamol M.A Assistant Director (Marketing) CDB, Kochi
7	Smt.Mini Mathew Assistant Director (Publicity and Public Relations) CDB, Kochi
8	Smt.Vincy Varghese Development Officer, CDB, Kochi
9	Smt.Joycy Chacko Accounts Officer, CDB, Kochi
10	Smt.Renu P Viswam Statistical Officer, CDB, Kochi
11	Smt. Geethu A.S Food Processing Engineer (on contract, CDB, Kochi)
12	Kum. Surya Thankachan Food Processing Engineer (on contract, CDB, Kochi)